



Research article

Opportunity abandonment: Why are entrepreneurs vulnerable to type I and II errors?

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ABSTRACT

Opportunity actualization is a critical competency attributed to entrepreneurs, which has received widespread attention in the entrepreneurship literature. However, the knowledge of Entrepreneurial Opportunity Abandonment (EOA) decisions is limited. We, therefore, explore the relatively under-studied EOA, analyzing why entrepreneurs commit decision errors, abandon potentially viable opportunities (type I error) or pursue non-opportunity spaces (type II error), and ultimately forsake them later. Through a scoping literature review, we highlight more profound psychological variables that shape entrepreneurial opportunity behavior triggering EOA decisions. We discuss entrepreneurial cognitive limitations in articulating, concretizing, and communicating the opportunity. We argue that varying construal mindsets cause reification fallacies and create perceptual blocks in enunciating an opportunity idea. Further, subjective stakeholder feedback and biased information exchange largely shape EOA decisions, which are mediated through the information processing capacity of entrepreneurs. Finally, we propose four entrepreneurial decision-limiting hypotheses which require an empirical investigation.

1. Introduction

Entrepreneurial opportunity is one of the most intriguing topics in modern entrepreneurship literature [1,2]. Ramoglou & Tsang [3] define entrepreneurial opportunity as “*the propensity of market demand to be actualized into profits through the introduction of novel products or services.*” The current body of research delineates various phases involved in the process of pursuing an entrepreneurial opportunity, which includes opportunity discovery, conceptualization, refinement, and actualization [4–7]. However, a widely observed phenomenon of Entrepreneurial Opportunity Abandonment (EOA) is yet to be universally conceptualized or thoroughly investigated. Crawford et al. [8], Wood & McKinley [9], and Dimov [10] explained EOA as a deflection of the entrepreneur’s attention and efforts away from an opportunity idea, accompanied by a decision not to pursue it.

While entrepreneurial evaluation of opportunity ideas revolves around feasibility and viability considerations, cognitive biases in articulating them while they take shape are often misjudged. Fallacies in EOA decisions can take place at the individual or social level. Further, entrepreneurs seek validation of their opportunity ideas by taking feedback from various stakeholders. Type I error-abandoning potentially viable opportunities or Type II error-pursuing incorrect opportunities-may occur if the stakeholders are not

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well informed about the opportunity idea, providing biased feedback. Furthermore, the entrepreneur may fail to adequately interpret the stakeholder's information and vice versa, leading to incorrect decisions.

1.1. Theoretical and empirical research gaps

There are several gaps in the conceptualization of the EOA construct. The different stages of opportunity persuasion have drawn varying attention from entrepreneurship researchers, and cognitive framing of various opportunity stages is fragmented in the extant literature. The limited literature focuses on rational and economic perspectives of opportunity persuasion or abandonment decisions [11,12]. Although the existing literature applies a psychological perspective to opportunity persuasion decisions, it does not do so for opportunity abandonment decisions, even though both follow a similar trajectory of opportunity discovery, conceptualization, and refinement. Additionally, there has been an inadequate examination of the socio-psychological perspective in EOA decisions, especially when the decisions are erroneous. While the literature credits entrepreneurs with the quality of complex decision-making of opportunity persuasion [13], the entrepreneurial cognitive weaknesses related to an alternative decision behavior of EOA have received scant attention and are yet to draw a robust discourse. The errors in opportunity decisions must be thoroughly examined, as opportunity behavior is a collaborative and iterative process where opportunities are created through social interaction. Hence, we conclude that studies have yet to fully explore the cognitive and psychological biases that lead to incorrect EOA decisions – Type I or Type II errors.

1.2. Research aims

The rationale for the study emerges from the under-theorization of the EOA construct and limited knowledge of the inherent psychological causes leading to decision errors. Therefore, this study aims to identify the underlying reasons for entrepreneurial mistakes in making decisions related to opportunity abandonment. We first conceptualize EOA and its theoretical dimensions through a psychological perspective at the individual and societal levels. We argue that the cognitive domain holds the answer to many enigmatic behaviors related to entrepreneurial opportunity abandonment decisions [14]. We theorize that cognitive limitations and biases can logically be attributed to fallacies in such EOA decisions [15]. Burmeister-Lamp [16] explained that entrepreneurs are susceptible to cognitive errors and biases due to the uncertainty of opportunities and associated risks and their inability to process them objectively. Therefore, we delve into psychological and cognitive domains to uncover reasons for entrepreneurial oversights during the opportunity development journey.

Secondly, we recognize the need to consider the social aspects of these decisions and question the idea that entrepreneurs are solely in control of opportunity-related decisions. It recognizes the need to consider the social aspects of these decisions and questions the idea that entrepreneurs are solely in control of opportunity-related decisions. Therefore, it highlights the importance of environmental factors and stakeholders in these decisions. To fill the gaps in previous research, we situate EOA within construal-level [17] and stakeholder theories [18,19] to explain possible reasons entrepreneurs may make Type I and Type II errors.

2. Theoretical background

The psychologically oriented Construal-Level Theory (CLT) developed by Trope and Liberman [17] posits that individuals develop mental representations of future events based on temporal, spatial, and social distances. CLT theory provides a valuable framework for understanding entrepreneurs' planning mistakes and impulsive behaviors during different phases of opportunity development [11, 20]. In light of the CLT theory, we opine that there is a substantial degree of entrepreneurial agency involved in the early stages of opportunity navigation, exposing entrepreneurs to vulnerabilities when using their cognitive capacity and mental alertness to discover, objectify, and refine or abandon opportunities [21,22].

CLT theory suggests that individuals develop an abstract or high-construal mindset if the imagined event is far in time or perceived as having high physical and social distance. Such a high-construal mindset increases the psychological distance, making individuals think of objects and events in broad and general terms and may also lead to the reification fallacy.

Reification is considering or formulating an abstract idea as something natural or a material opportunity [23]. The reification fallacy occurs when there is a misplaced objectivation of an abstract idea in the cognitive domain of entrepreneurs and may also create biased communication with stakeholders. The opportunity idea may seem attractive and worth pursuing in the initial stages of opportunity discovery and objectivation, but predictable and planned strategies become challenging under uncertain conditions. Entrepreneurs apply a high construal mindset in opportunity evaluation since there is a low psychological proximity to the venturing event. Liuberté et al. [24] further argued that such visualized and de-contextualized entrepreneurial opportunities may represent entrepreneurial aspirations rather than real ones. Such entrepreneurial choices are more consistent with non-predictive processes and experimentation, which is logical when the opportunity vision takes shape [25]. Supported by Falchetti et al. [26], Hallam et al. [27], and Zampetakis et al. [28], we argue that when evaluating opportunities with a high construal mindset, novelty may seem to be attractive while risks may not be apparent. Contrastingly, entrepreneurs begin to think more concretely when implementation is imminent and requires impending action, demonstrating a low-construal mindset [29,30]. In such situations, the psychological distance is shorter as entrepreneurs directly experience objects, and the venturing event becomes increasingly foreseeable [20,31]. Chandler et al. [32] pointed out that entrepreneurs engage in causal reasoning at the later stages of opportunity development, which occurs under low construal mindsets, and feasibility and viability challenges dominate entrepreneurial perceptions towards opportunity novelty and risk, leading to opportunity abandonment decisions.

However, the CLT theory is focused only on individual cognition and behavior and hence does not fully explain entrepreneurial engagement with stakeholders to actualize the opportunities. Adler and Sarstedt [20] suggested that the CLT theory needs to expand to incorporate interdependent and societal-level construal. Synthesizing CLT with stakeholder theory and analyzing individual and interdependent construal in shaping novelty and risk perceptions within entrepreneurial opportunity research can provide new insights into EOA decisions. Ramoglou et al. [4] and Ratten [33] argue that the stakeholder theory is well-positioned to capture the breadth, depth, and intricacies of entrepreneur-stakeholder engagement and offer insights into how biased stakeholder feedback can shape opportunity abandonment decisions at different stages of the opportunity development process. When entrepreneurs view opportunities with high construal mindsets, they fail to recognize the importance of feedback and commitment of non-market stakeholders, many of which may not be overtly evident. As a result, potentially viable opportunities may be abandoned at the altar of economic utility (type I error). Such a view of stakeholders may project opportunity spaces as narrower, leading to incorrect or inconclusive opportunity assessments.

Similarly, stakeholders in the early stages of opportunity evaluation may apply a high construal mindset while providing feedback to entrepreneurs. At this stage, an entrepreneurially intensive opportunity framing occurs supported by construal-influenced stakeholder feedback [34,35]. Such entrepreneurial and stakeholder engagement may drive entrepreneurs into non-opportunity spaces, ultimately influencing abandonment decisions later in opportunity development (type II error). Realistic feedback from stakeholders with a low construal mindset may make entrepreneurs realize the lack of potential opportunity and result in opportunity abandonment decisions.

3. Methods

The study conducted a scoping literature review on entrepreneurial opportunity abandonment. There are two reasons why we chose a scoping review of the literature. Firstly, there is a lack of sufficient research on the subject, and the study's central research question of why entrepreneurs are vulnerable to committing type I and II Errors is not comprehensively answered in the existing literature. Mak and Thomas [36] explained that scoping reviews are ideal when there is a need to synthesize an existing or emerging body of literature that is unclear and highlight the gaps around a central research question. Secondly, a scoping review can assist in widening the compass of entrepreneurial opportunity abandonment to socio-psychological dimensions. Integrating the rational and economic reasons traditionally associated with EOA with individual and shared cognitive limitations could pose future research hypotheses that can be investigated [37].

As a first step in scoping the literature review, a central research question was first identified based on the recommendations of Mak and Thomas [36]. The breadth and depth of the literature on this research question were limited. Therefore, the inclusion criteria were those research studies that analyzed entrepreneurial opportunity from a psychological perspective at the individual and stakeholder levels. The scoping review results were thematically reported under two categories: entrepreneurs' cognitive limitations and stakeholders' role in articulating and concretizing the opportunity idea. The study also identified the reification fallacies at both individual and societal levels. Finally, theoretical and empirical gaps on the subject were analyzed, and future research directions were proposed, as suggested by Munn et al. [38].

4. Results of scoping literature review

Results conclusively indicate that entrepreneurs are vulnerable to committing type I errors when they abandon an idea they should have pursued and type II errors when they venture into non-viable opportunities. Kuckertz et al. [39] and Eisenmann et al. [40] argued that entrepreneurs struggle to accurately determine whether to pursue or abandon the idea due to limited information, uncertainty, and risks associated with the opportunity idea. The evaluation of opportunities requires entrepreneurs to assess their perceived feasibility, shaped by gain and loss estimation and cognitive biases during the formative stages of assessment [41]. Several researchers, such as Davidsson [42], Davidsson et al. [43], and George et al. [2], have pointed out that entrepreneurial opportunity research is yet to conclude conclusively on entrepreneurial fallacies based on opportunity evaluations and associated errors.

4.1. Reification fallacies influencing EOA

The scoping review findings suggest that entrepreneurs have limitations in influencing market structures within which entrepreneurial agency is ingrained [44,45]. Therefore, entrepreneurs are susceptible to cognitive fallacies resulting in reification at opportunity discovery and objectivation stages leading to EOA [8]. McMullen [46] pointed out that entrepreneurs traverse uncertain opportunity terrains to reassure themselves about the novelty and viability of the opportunity idea. However, Ramoglou et al. [4] argued that the opportunity theory has overemphasized the entrepreneurial agency in opportunity decisions without recognizing the psychological limitations. This argument has merit because the extant literature sheds insufficient light on entrepreneurial cognitive limitations in the opportunity development process. For example, the reified mind of the entrepreneur may be unable to concretize the idea novelty and risks due to a lack of social and economic resources and information scarcity, leading to opportunity abandonment [47,48]. Lin et al. [49] and Scheaf et al. [50] argued that entrepreneurs' perceptions of risks, uncertainty, and novelty might be over-simplified due to high construal influencing reification fallacies.

Similarly, Henrekson et al. [51] explained that uncertainty and novelty are more subjectively interpreted, while risks can be quantifiable. Studying the entrepreneurial cognitions associated with opportunity abandonment, Wood & Mc Kinley [9] reiterated that the primary reasons for flawed novelty and risk assessments are inadequate objectification of ideas and insufficient resource support

from stakeholders. Finally, Nelson et al. [6] pointed out that an entrepreneur's construal levels may change as hurdles become more prominent during various stages of opportunity development. We utilize the stakeholder view to reduce the overdependence on entrepreneurial agency in opportunity venturing and debunk some myths associated with entrepreneurial heroism and entrepreneurial opportunity qualities. Entrepreneurs may commit reification fallacies under high construal mindsets at the objectivation stage of opportunity development and become vulnerable to such errors under a low construal mindset and stakeholder feedback at the actualization stage. Subsequently, entrepreneurs need to articulate the opportunity idea well; reification fallacies can also occur among stakeholders' shared cognitive minds, further bolstering construal mindsets [52].

Entrepreneurs apply causation and effectuation decision-making behaviors at different stages of the opportunity journey based on different environmental conditions. Entrepreneurs with adequate information and certainty will use causation logic to set goals. On the other hand, when entrepreneurs have limited information and high uncertainty, they focus on the means that may lead to achieving varied goals [53]. As a result, it prompts entrepreneurs to engage with external stakeholders seeking feedback on the opportunity idea [44]. As a result, entrepreneurial perception about an opportunity idea is shaped by several stakeholders and vice-versa, as well as their ability to process diverse and sometimes contradictory information.

As ideas become more tangible, entrepreneurs with low construal mindsets and causation logic seek stakeholder validation on the economic viability, novelty, and risks associated with the opportunity [54]. Entrepreneurs seek information they may have missed and explore possible resource-creation opportunities with interested stakeholders [55,56]. Therefore, stakeholders become critical influencers during the actualization stage of opportunity as entrepreneurs realize their limitations to influence market structures within which entrepreneurial agency is ingrained [44,45]. However, entrepreneurial-stakeholder engagement is underexplored, and its full potential is yet to be realized [57]. A narrow view that only economically driven stakeholders can help achieve economic goals limits valuable stakeholder feedback on potential opportunities. This view, combined with structuralist hurdles and venturing towards demand-devoid non-opportunity spaces, may lead to abandonment decisions during the opportunity journey [58,59]. Table 1 summarizes the limited literature on the cognitive limitations of entrepreneurs leading to decision errors.

4.2. Stakeholder engagement influencing EOA

Results confirm that various stakeholders, such as potential customers, suppliers, retailers, interest groups, and social and political entities, become critical influencers in determining whether entrepreneurs should pursue or abandon the opportunity. At various stages of the opportunity journey, stakeholders' perceptions of the opportunity idea will concretize based on their construal mindsets [66,67]. These cognitive limitations are further reiterated by Sarooghi et al. [68], who explained that entrepreneurial opportunities are a design artifact that takes time to mature. While it takes shape, various stakeholders will have different perceptions of it. Interestingly,

Table 1
Entrepreneurial errors in opportunity abandonment: Scoping Thematic analysis.

Psychological Dimension	Elaboration	Link to the Central Research Question	Authors
Entrepreneurial vulnerability in making decision errors	Entrepreneurs are susceptible to decision errors, either pursuing opportunities they should not have or abandoning opportunities they should have followed.	Type I error Type II error	Ramoglou et al. [4]; Mount et al. [47]
Drivers of reification fallacies	Opportunity ideas are initially abstract, and their concretization and objectivation require careful articulation as ideas incubate in the entrepreneur's cognitive domains. However, cognitive limitations result in reification fallacies. Sometimes, idea novelty is considered high, while at others, viability is determined as high and vice versa. Further, subjective evaluation of an opportunity idea's novelty, viability, and risks provides little help to entrepreneurs in objective assessment and decision-making.	Cognitive Limitations Errors in idea concretization Errors in analyzing viability, feasibility, and business risks	Henrekson et al. [51]; Adler and Sarstedt [20]; Li et al. [60]; Neneh [22]; Nelson et al. [6]; Kim et al. [52]
Construal mindsets	Another reason for reification fallacies is the application of construal mindsets. Under high construal mindsets, entrepreneurs favorably perceive an opportunity idea's novelty, viability, and risks during the opportunity-framing stage. Contrastingly, at the actualization stage, under low construal mindsets, entrepreneurs view them with suspicion.	Perceptual errors Applying a lens of broad, decontextualized features of the situation leads to incorrect assessments	Liuberté et al. [24]; Falchetti et al. [26]; Schwartz et al. [29]; Hallam et al. [27]; and Zampetakis et al. [28]
Causation and effectuation decision logic	Entrepreneurs apply alternative decision logic when faced with uncertainty and scarcity of information. They would utilize causation logic when information and certainty of the outcome of their decision are high and prioritize their goals. On the other hand, they would apply effectuation decision logic when risks and uncertainty are high by focusing on means, being cautious, leveraging contingencies, and being in control. Most of the time, entrepreneurs would seek validation from stakeholders to aid in this decision-making logic.	Lack of cognitive confidence Low confidence when faced with uncertainty and risks Demonstration of dependability on others for evaluation	Chen and Xu [61]; Galkina et al. [62]; Braun and Sieger [63]; Kuratko et al. [64]; Alsos et al. [53]; Shams et al. [44]; Smolka et al. [65].

stakeholder's ability to process diverse and sometimes contradictory information will influence EOA [54].

At the initial discovery stage of opportunity development, entrepreneurs seek information on the opportunity idea from stakeholders. Entrepreneurs generally pursue an objectified opportunity through stakeholders' validation [13]. During this validation stage, the transferred idea begins to reside and develop in the shared cognitive domains of these stakeholders and is mostly subjectively represented [3,49]. Through informal communication with stakeholders, entrepreneurs seek to validate the idea, evaluate the novelty and risks, and find ways for their actualization [69]. Further, Wood et al. [70] argue that full pivot or abandonment decisions could be attributed to the merits of the business model itself, such as low revenue forecasts, forecasted cash burn rate, and forecasted high customer acquisition cost, which different stakeholders may not be able to grasp.

If the idea survives through this individual and social co-creation, the next stage is opportunity actualization, as entrepreneurs are convinced that the idea is worth pursuing [71]. At the actualization stage, stakeholders provide relevant information that entrepreneurs may have missed and suggest possible resource-creation opportunities [55,56]. Ramoglou et al. [4] argued that the stakeholder role takes center stage during opportunity actualization, limiting the entrepreneurial agency. Early stakeholder engagement at discovery and objectivation may be less productive as these are entrepreneurial-agency-intensive processes. Stakeholder engagement at the actualization stage is more fruitful as key business insights can be gained concretely objectify the opportunity idea. However, the extant literature does not provide adequate details of this exchange between entrepreneurs and stakeholders in the opportunity development and actualization process. To address this, Steinbach et al. [72] called for unpacking entrepreneurs' information processing behavior to understand the entire engagement process.

Another interesting finding is that EOA and associated mistakes may result from internalized cognitive limitations, externalized perceptual views of stakeholders, and their effective communication exchange. Li et al. [21] and McBride and Wuebker [73] explained that entrepreneurs hustle to enlist various stakeholders on their entrepreneurial journey as they develop psychological bonds and networks. The social cognitive model posits that entrepreneurs who lead opportunity persuasion may select stakeholders and networks with similar viewpoints, leading to what researchers call cognitive homophily [74]. Cognitive homophily may lead to easy acceptance of ideas from stakeholders with the same demographic, interest, and knowledge characteristics, and decision errors are likely to occur. The literature narrowly views that only economically driven stakeholders provide valuable feedback to entrepreneurs on potential opportunities. Further, Healy et al. [74] explained that learning from social contexts and stakeholders requires appropriate information filtering and processing, which moderates opportunity persuasion or abandonment decisions.

Further, stakeholders representing different interests may not be supportive during actualization, leading to EOA. This unsupportive behavior is mainly because, from an entrepreneurial agency view, opportunity discovery and creation focuses on the supply side, assuming that opportunity space consists of customer needs and societal problems. However, from a stakeholder theory perspective, actualization represents the demand side of opportunity [73]. The varied supply and demand perspectives combined with structuralist hurdles and venturing toward demand-devoid non-opportunity spaces may lead entrepreneurs to opportunity abandonment decisions [58,59]. Therefore, opportunity articulation must acknowledge a full range of economic and non-economic stakeholders critical for actualizing desirable outcomes rather than limiting the focus to market stakeholders [4]. Table 2 illustrates the varied stakeholders' role in opportunity abandonment decisions.

Table 2
Stakeholders role in opportunity abandonment: Scoping Thematic analysis.

Psychological Dimension	Elaboration	Link to the Central Research Question	Authors
Stakeholders' perceptions of opportunity idea	Stakeholders will perceive the opportunity idea based on their expertise and knowledge; hence, there is substantial subjectivity in evaluation and judgment. Bias, prejudice, stereotyping, and lack of motivation are common factors that create misjudgment.	Errors in judging the real potential in the opportunity leading or Type I or Type II error	Huges et al., [66]; Flamini et al. [67]; Arshi et al. [75]; Sarooghi et al. [68]; De Brito & Leitão [54],
Stakeholders' opportunity evaluation at various stages of development	Stakeholders are vulnerable to reification fallacies as opportunity ideas evolve through various stages of incubation. Critical stages where opportunity miscalculations occur are initial concretization and later at the actualization stage.	Shared cognitive limitations and varying construals Errors in analyzing viability and feasibility	Ramoglou et al. [4]; Pinheiro et al. [55]; Sanhokwe, [71]; Wood et al. [70]
Information exchange between Stakeholders and Entrepreneurs	While stakeholders and entrepreneurs co-develop the opportunity idea, the ability of both parties to correctly interpret and execute opportunity ideas may affect opportunity abandonment decisions.	Errors in information exchange and opportunity articulation related to opportunity novelty and risks	Bosse et al. [13]; Pinheiro et al. [55]; Lin et al. [49]; Campos [56]
Stakeholders and entrepreneurs' Cognitive homophily	Entrepreneurs generally seek information from stakeholders who have common interests and thinking. A common bias emerges between the stakeholders and entrepreneurs. The opportunity idea may not have had a chance for a more critical evaluation from diverse stakeholders.	Errors in critical and objective opportunity evaluation	Li et al. [60]; McBride and Wuebker [73]; Healy et al. [74]; Sarasvathy [58]

4.3. Directions for future research

Future research, aiming to provide realistic assessments of entrepreneurial qualities related to opportunity abandonment decisions, should explore the role of variables that shape construal mindsets and vulnerability towards reification fallacies within the entrepreneurs' and stakeholders' individual and shared cognitive domains. Two potential areas prone to subjective evaluations are opportunity risks and opportunity novelty and associated information exchange.

4.4. Opportunity novelty

One of the central tenets of entrepreneurial opportunity is its novelty perception [12,49]. Entrepreneurs perceive an opportunity to be novel based on the information available on its originality, newness, and distinctiveness compared with existing products or services in the market [76]. Falchetti et al. [26] and Förster [77] explain that entrepreneurs' construal level shapes novelty perceptions. However, previous research by Chan et al. [78], Nelson et al. [6], and Zampetakis et al. [28] on construal-influenced opportunity has focused on entrepreneurial actions in general and have not considered specific outcomes of novelty-related opportunity evaluations and decisions [12,79]. Due to varying levels of construal associated with novel opportunities, Chan et al. [78] and Škerlavaj et al. [80] argue that entrepreneurs rely on different criteria to evaluate opportunity novelty, their decision to abandon opportunities due to failing the criteria is largely unexplored in the entrepreneurship literature. Future research should explore how entrepreneurs frame and evaluate novel ideas under varying construal levels and how psychological distance influences opportunity-novelty decisions. Entrepreneurship researchers can also highlight possible reification fallacies that might cause type I and II errors in assessing opportunity novelty. Therefore, future research can empirically test the following hypothesis.

H1. Entrepreneurs' construal level shapes opportunity-novelty perceptions influencing EOA.

4.5. Opportunity risk

Entrepreneurial opportunity decisions under risks have attracted considerable attention from researchers [81,82]. Schildberg-Hörisch [83] and Slovic and Västfjäll [82] argue that risk-related decisions could change due to changeable construal mindsets, and emotions and limited cognition are some of the under-examined factors influencing entrepreneurial risk-related decision-making. According to Raue et al. [84], Lerner et al. [79], and Kim et al. [52], risky decisions under uncertainty lead to the framing of consequences and are therefore influenced by an activated construal level. Similarly, Raue et al. [84] and White & Kwan [85] conclude that psychological distance directly affects construal level, influencing perceived risks. Entrepreneurial perception of risks in the initial opportunity recognition and concretization with a high construal level is gain-framing as they might be psychologically in the distant future [11,86].

On the other hand, a low construal level with a shorter psychological distance shifts the focus on the feasibility aspects of the opportunity, making risks more apparent, and loss-framing may become the dominant entrepreneurial and stakeholder perception [87, 88]. However, the existing literature does not illuminate the entrepreneur and stakeholder perception of risks and their effect on erroneous entrepreneurial opportunity decisions. Future research should focus on how entrepreneurial perception of risks and under construal mindset clashes with stakeholder perception of risks at different stages of opportunity development. A critical question that needs to be answered is whether entrepreneurs and stakeholders display similar construals at different stages of opportunity development and what possible risk-related reification fallacies in opportunity co-creation. Thus, we suggest testing the following research hypothesis.

H2. Entrepreneurs' construal level shapes novelty-risk perceptions of stakeholders influencing EOA Opportunity Information

Bucur & Ban [89], Tuomisalo [90] and Schwarz and Bless [91] argue that opportunity evaluations are fundamentally information-driven behavior and shape entrepreneurial construal levels. Entrepreneurs engage in an information exchange process with stakeholders or the communities of inquiry, seeking validation of their evaluations of opportunity ideas [1,25]. In addition, Körner and Volk [92] and Schwarz [93] explain that low-level construals enhance the visualization of judgment outcomes under the influence of dynamic information. Further, Caputo et al. [94], Pellegrini et al. [95], and Kraus et al. [96] argue that the developments in the digital economy and the fast pace of information have increased the challenges of making use of relevant information. However, Kaufman and Flanagan [97] state that information value mainly depends on information processing capabilities and could impact construal levels.

Information processing is the cognitive capability to process varied and contradictory information and make self and cross-connectivity at a similar speed as it is presented [60]. Arguably, the utilization of quality information can act as a resource for opportunity action and shape entrepreneurial perceptions and construal mindsets toward opportunity novelty and risk [6,28,61,98]. Although the role of information processing is more evident in the literature, the dynamics of information exchange between the entrepreneurs and stakeholders that shape opportunity decisions and possible errors are not adequately covered in the entrepreneurship literature. Future research should explore the impact of varying levels of information processing by entrepreneurs and stakeholders, especially their effect on EOA decisions. We posit that information processing capacity plays a mediating role and thus propose testing the following hypotheses.

H3. Entrepreneurs' information processing capacity mediates the relationship between novelty, risk construals, and EOA.

H4. Entrepreneurs' individual and collective construal levels shape entrepreneurial abandonment decisions.

4.6. Practical implications

The study's results can help entrepreneurs identify and overcome Type I and Type II errors associated with opportunity evaluation. Firstly, entrepreneurs must be aware of their vulnerability to fallacies in opportunity decisions. They must be mindful of the biases that force them to adopt a perception of how an opportunity novelty and risk will unfold, as opposed to where and when or whether those will occur. Secondly, they must realize that the present evaluation of entrepreneurial opportunities will change in the future because of high temporal distance and may lead to erroneous decisions. Thus, entrepreneurs' assessment of the novelty and risks of the opportunity are subjective and influenced by psychological distance within them. It should be weighed concretely rather than abstractly, no matter how appropriate it may seem at a given time. Their misconstruing of abstract ideas as tangible can be addressed by focusing on concrete information required during execution. When faced with temporal distance challenges, entrepreneurs can take a step back to focus on the broader picture or take a step forward to assess possible feasibility hurdles. Thereby, entrepreneurs can reduce the overgeneralization of the relationship between construal and psychological distance by focusing on the larger goals and avoiding incorrect abandonment decisions.

Thirdly, the fallacious reasoning of opportunity persuasion or abandonment is because the entrepreneur's mind cannot account for all the necessary information regarding the novelty and risks of the opportunity idea. Therefore, entrepreneurs must engage with multiple and diverse stakeholders to fill in the missing information due to their cognitive limitations and reduce confirmation bias, which might have occurred due to temporary distances. Finally, effective information processing and interpretation is essential as stakeholders provide diverse and biased information on the opportunity idea. Entrepreneurs can avert incorrect abandonment decisions by being aware of individual and collective fallacies and biases.

4.7. Limitations

The study focuses on only psychological variables in erroneous entrepreneurial decision-making. While psychological variables may have profound influences, several other factors may affect entrepreneurial opportunity abandonment decisions. For example, changing environmental and economic conditions may prompt entrepreneurs to commit Type I or II errors. Finally, the scoping literature review focuses only on evaluating the decision errors of entrepreneurs and stakeholders, while other potential influencers, such as friends and family, may influence entrepreneurial abandonment decisions.

5. Conclusion

We argued that the entrepreneurial aura around opportunity actualization should be realistically assessed in light of vulnerability to cognitive limitations and biases. Due to varying construal levels, entrepreneurs and stakeholders are vulnerable to reification fallacies in articulating, communicating, or abandoning opportunities. If entrepreneurship researchers correctly understand the influences on EOA decisions, appropriate remedial can reduce type I and II errors. We argued that most EOA decisions are overtly attributed to business and environmental parameters, but the perception and evaluation of these parameters have deep psychological roots. Among the business and environmental parameters, opportunity novelty and risk stood out as significant opportunity evaluation variables as these are likely to drive most opportunity evaluation decisions and subsequent errors. Therefore, we proposed empirical testing of several entrepreneurial-limiting hypotheses related to entrepreneurs' psychological mindset, influencing perceptions of novelty and risk toward the opportunity. We further highlighted the role of individual and collective construals in opportunity-co-creation and entrepreneurial opportunity abandonment decisions. Varying entrepreneurial construal mindsets complicated by stockholders' subjective evaluation create an environment for decision mistakes. Since most opportunities are co-created by entrepreneurs through communities of inquiry, shared cognitive perceptions and cognitive homophily can cause unrealistic evaluations of opportunity ideas, leading to their abandonment and, subsequently, decision errors. Therefore, entrepreneurs' and stakeholders' information availability and information processing capability can mediate the relationship between opportunity novelty, risk, and decision choices. We concluded that the role of entrepreneurial agency in opportunity development, persuasion, and abandonment is critical, but since opportunities are co-created, opportunity evaluation decisions are not error-proof.

Data availability statement

The manuscript does not contain any empirical data.

CRedit authorship contribution statement

Tahseen Anwer Arshi: Writing – original draft, Supervision, Methodology, Investigation, Formal analysis, Conceptualization. **Venkoba Rao:** Visualization, Validation, Resources, Methodology, Funding acquisition. **Atif Saleem Butt:** Writing – review & editing, Validation, Resources, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

Corresponding author [ATIF SALEEM BUTT] is noted as an AE of this journal. The authors further declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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