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Entrepreneurial cognition and premature scaling of startups: a qualitative analysis of determinants of start-up failures

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Abstract

Purpose – This study aims to explore the behavioral patterns of entrepreneurs, their cognitive styles and personality characteristics that can lead to a self-destructive chain of events during the transition from a fledgling business to one capable of long-term, profitable growth. This study adopts the self-regulation attitude theory to uncover the reasons for premature start-up scaling, which will help founders to study on their cognitive biases, emotions and behaviors and make efforts to do what does not come naturally to them.

Design/methodology/approach – The respondents for this qualitative study were selected from a group of entrepreneurs with extensive experience with technology start-ups that have either failed or succeeded during their development stages. In-depth semi-structured interviews were conducted with eight participants, who were selected through snowball sampling, on the theme of understanding "How do premature scaling mistakes happen?". Thematic analysis was used to unearth common themes.

Findings – The results of this study identified the following themes, "comparison," "emotional over-reaction," "impatience," "mistaken customer priorities," "overestimation" and "overconfidence," which eventually leads to premature scaling. The underlying decision-making heuristics of entrepreneurs can be identified as engulfed in different cognitive biases and emotions resulting in negative behavioral patterns, as in the case of premature scaling. Of the six themes, "comparison," "mistaken customer priorities," "overestimation" and "overconfidence relates to cognitive bias" and "emotional over-reaction" and "impatience" relate to emotional factors.

Research limitations/implications – The study was made possible with the support of the voluntary participants chosen by purposive and snowballing data sampling. The interviewee and interviewer biases could have also crept in as part of this qualitative approach. The study pertains only to start-ups in the information technology sector and further studies need to be done to generalize the results across industries as well.

Practical implications – This early-stage underestimation of unexpected obstacles in the entrepreneurship journey necessitates a focus on the entrepreneur too, as much as the concept. In these hectic and fast-paced circumstances, aspiring entrepreneurs must be taught how to deal objectively with themselves and others, as well as think strategically. Leaders who scale do so because they take purposeful measures to overcome their weaknesses through self-discipline, soliciting advice from others and using their right to change their attitude and points of view.

Originality/value – The study frames the new approach into the entrepreneurial literature, linking it to self-regulation attitude theory and adds to the nascent literature on neuroentrepreneurship which discuss entrepreneurial cognition, decision-making, and entrepreneurial behavior. This study attempted to explore the reasons behind the premature scaling of startups on an individual level. This study is pioneering in exploring the cognitive factors underlying an entrepreneur's decision that results in premature scaling. This

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study provides insights for academicians, entrepreneurs and policymakers and helps understand the cognitive journey that leads to premature scaling.

Keywords Entrepreneurship practice, Entrepreneurial cognition, Decision-making heuristics, Premature scaling, Self-regulation attitude theory, Sustainable development of startups

Paper type Research paper

Introduction

The survival and longevity of startups are primarily dependent upon the strategic decisions taken by entrepreneurs, which, in turn, are consequences of their personal values and beliefs (Al Issa, 2021; Liu and Bell, 2019; Pellegrini and Ciappei, 2015). It thus becomes imperative to understand the cognitive thought process and dimensions of how entrepreneurs deal with one's thoughts and emotions, and hence, make strategic business decisions by negotiating the dynamics of the business environment and relationships with other stakeholders (Caputo *et al.*, 2018). Premature scaling has been identified as a significant reason for the failure of startups all over the world (Marmer *et al.*, 2011). Premature scaling can be defined as the state of affairs characterized by excessive, unreasonable, and premature funding, inducing lopsided inorganic growth at an unreasonable rate before the products gather strength or gain the ability to capture a workable market share (Almakenzi *et al.*, 2015; Giardino *et al.*, 2014; Van Rensburg and Ogujiuba, 2020). Premature scaling has the significant effect of causing the young firm to lose equilibrium, become less manageable, lose control over capital inflow and outflow, resulting in steep escalations of commitment, and in most cases, failure at an early stage of growth (Berman *et al.*, 2011; Laurell *et al.*, 2017; Salisu *et al.*, 2020).

According to Marom and Lussier (2014), start-up failures can be traced back to the aspects of reasoning, response and behavioral failures of planning aimed at establishing and nurturing the business. The failures that arise because of the premature scaling of the startup businesses are influenced by a couple of behaviors that usually affect the decisions that the entrepreneur takes (Beynon *et al.*, 2020; Cardon and Kirk, 2015). Entrepreneurial cognitions are "the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth" (Mitchell *et al.*, 2002). Studies have consistently attempted to identify the linkages between an entrepreneur's personal attributes and venture-performance (Koryak *et al.*, 2015; Shepherd and Patzelt, 2018). Individual-level factors such as self-serving bias, self-justification, overconfidence and planning fallacy can affect entrepreneurial behavior (Simon *et al.*, 2000). The focus of this paper is to identify the different cognitive factors that influence an entrepreneur's decision toward premature scaling. This study adds to the literature by moving beyond the trait approach in entrepreneurship and attempts to extend the literature on the cognitive view of entrepreneurship. Exploring more on entrepreneurial cognitions will help academicians and practitioners to better understand the thought process of entrepreneurs and "why" they do some of the things they do. In this study, we seek to understand the different cognitive dimensions that lead to the premature scaling of startups.

The majority of research focuses on factors that influence entrepreneurial success rather than identifying entrepreneurs who are likely to fail (Kumar and Sihag, 2012; Soomro and Shah, 2021). Start-ups are temporary businesses that aim to grow into large corporations. The startup lifecycle is made of the following six stages of development: Discovery, Validation, Efficiency, Scale, Sustain, Conservation (Marmer *et al.*, 2011). Early-stage businesses are built to find product/market fit in the face of extreme uncertainty (Marmer *et al.*, 2011). A startup's scaling must simultaneously balance

the following five core dimensions: customer, product, team, business model and finances. The abundance of venture capital waiting to be deployed in the market necessitates greater responsibility on the part of both venture capitalists and entrepreneurs, to turn entrepreneurship into a meaningful wealth-creating process (Marmer *et al.*, 2011; Gauthier *et al.*, 2020). This necessitates more objective and sound decision-making processes on both sides, particularly during the early stages of startups.

In this context, this study attempts to address the following research questions:

RQ1. Why do efforts to increase entrepreneurship rates beyond certain point results in an overabundance of poorly qualified entrants?

RQ2. Are efforts to encourage entrepreneurship instilling in many people optimistic yet unrealistic expectations, leading to them engaging in financially risky and harmful startup behaviors?

RQ3. Is it always the best approach to invest resources in improving the chances of a startup's success? and

Finally,

RQ4. is it possible that allocating resources to deter aspiring entrepreneurs with bleak prospects would be a more cost-effective strategy?

To address the aforementioned research questions, this work attempts to unearth the cognitive factors behind the premature scaling of technology startups.

Review of literature

The European Commission has recognized scaling-up challenges as a key part of the success and growth of European start-ups (2016). Marmer *et al.* (2012) created a systematic approach to evaluate a company's scale-up readiness based on research of 3,200 start-ups. The most serious risk of scaling is when it is done too soon, it results in failure and is known as premature scaling (Marmer *et al.*, 2012). Only a little scientific research, especially in the early phases, has looked into the elements that contribute to entrepreneur failure (Bryant, 2007; Salisu *et al.*, 2020). Cognition has a role in a wide range of entrepreneurial activities, including opportunity identification, resource deployment and business performance (Hayward *et al.*, 2006; De Carolis and Saparito, 2006). Entrepreneurs are vulnerable to a variety of cognitive biases in decision-making because they frequently deal with extremely uncertain, complex situations (Keh *et al.*, 2002) and premature scaling errors could be reduced significantly if cognitive mistakes were reduced.

Entrepreneurial emotion is the feeling an individual has, about various challenges in a business (Cardon *et al.*, 2012). Individual cognitive processes have received little attention in previous research on entrepreneurial emotion. Individual decision-making is influenced by emotion and rationality, according to recent studies (Grichnik *et al.*, 2010; Doern and Goss, 2013). According to Dali and Harbi (2016), cognitive bias could explain why some people's entrepreneurial conduct succeeds while others fail. Similarly, some researchers discovered that business founders had a larger risk bias and perceive less risk, allowing them to make faster strategic decisions (Dolarslan *et al.*, 2017). Cognitive biases are "cases in which human cognition consistently produces representations that are systematically skewed in comparison to some feature of objective reality" (Haselton *et al.*, 2015).

Optimism and overconfidence are generally considered unfavorable cognitive biases in the context of premature scaling (Krans *et al.*, 2019). Excessive optimism might lead

to business failure, and building both start-up and scale-up ecosystems are essential (Von Bergen and Bressler, 2011; Isenberg, 2012). Entrepreneurs who are overpowered by emotion and have little reason to make decisions are prone to the simple rewards of quick, minimalist decision-making, which is sometimes persuaded by efficiency or a real shortage of resources at various phases of business (Cardon *et al.*, 2012). Various types of positive/negative emotions, as well as outcome behavioral variables and coping reactions, have an impact on these assessments (Wolfe and Shepherd, 2015). Cognitive biases make it difficult to weigh data and estimate probabilities (Zhang and Cueto, 2017). Two types of cognitive bias, overconfidence and illusion of control, influence a variety of entrepreneurial behaviors, including new product introduction, strategic orientation, acquisition and innovation (Cain *et al.*, 2015; Chen *et al.*, 2015; Malmendier and Tate, 2008).

Overconfidence bias is a phenomenon in which an entrepreneur's subjective confidence in their decisions is greater than their objective correctness (Forbes, 2005). Overconfident entrepreneurs often treat their assumptions as facts, refusing to search for and collect additional information that could correct their judgments (Chen *et al.*, 2015), resulting in an inability to accurately perceive the risk and uncertainty of an environment (Robinson and Marino, 2015). When people believe they are causative actors in their effort to achieve predetermined results that are truly random, they are experiencing illusions of control (Langer, 1975). When individuals think, reason and make decisions, a cognitive bias is a perceptual divergence from rationality (Alos-Ferrer *et al.*, 2016; Domeier and Sachse, 2016). Overconfidence is the propensity to overestimate the likelihood of favorable outcomes (Heger and Papageorge, 2018). Optimism is the tendency to underestimate the difficulty of a task (Chaudhary, 2018). Overconfident entrepreneurs, on the other hand, tend to overestimate the likelihood of a given outcome, interpreting assumptions as truths, resulting in insufficient information searches (Zacharakis and Shepherd, 2001). These entrepreneurs fail to obtain important information, which has an impact on the quality of their decision-making and leads to business failure (Hayward *et al.*, 2010). Based on the several evidences in the existing literature, this study seeks to develop a holistic framework that will understand better the reasons for premature scaling.

Theoretical framework

Based on the classic attitude theory, Bagozzi (1992) proposed the theory of self-regulation of attitudes. Self-regulation is defined as "the process by which individuals create goals and then steer their cognition and behavior toward those goals" (Bandura, 1991; Zeidner *et al.*, 2000). This definition is based on the self-regulation process of evaluation, emotional reaction and coping response (Lazarus, 1991). According to this view, behavior is a reactive activity that arises from a person's assessment of a circumstance and subsequent emotional reaction. Unique inputs lead to specific emotions and coping reactions, which are reflected in specific judgments and wants. In attitude theory, the distinction between the evaluation process and the emotional reaction process is made, with the function of cognitive and emotional self-regulation systems given particular emphasis. Startup and scaling challenges trigger significant emotional reactions among entrepreneurs.

According to Das and Teng (1999), "Cognitive biases are an ever-present aspect of strategic decision-making," (p. 757). They divided cognitive biases into the following four categories:

(1) Prior beliefs with a narrow focus on limited aims;

(2) Exposure to limited choices;

(3) Insensitivity to outcome probabilities; and
(4) Illusion of controllability.

Several performance criteria, such as logical sufficiency, accuracy and processing speed, can be used in evaluating cognitive biases (Haselton *et al.*, 2015). Theoretical research on the function of cognition in entrepreneurship has been advanced by this study. Second, the application of self-regulation attitude theory to the study of entrepreneurship was proven in this study. According to self-regulation attitude theory, a person's cognition and appraisal of entrepreneurial practice will lead to a desire-result realization adjustment process, in which the individual achieves the desired results. Individual emotional reactions have diverse consequences on behavioral variables, according to the notion of self-regulation attitude (Babakus *et al.*, 2003). To maintain or increase emotional levels, the individual will first develop an emotional reaction, followed by coping responses. Self-regulation attitude theory appears to be a viable framework for describing how cognitive bias drives entrepreneurial mood, according to some empirical findings (Chen *et al.*, 2018). Positive and negative entrepreneurial emotions, to put it another way, may act as mediators in the relationship between cognitive bias and entrepreneurship behaviors. Through the perspective of self-regulation attitude theory, we seek to investigate the emotional factors and cognitive biases that a start-up entrepreneur has experienced throughout the premature scaling phase of his or her firm.

Research methodology

The researchers used the descriptive approach method as primary data collection using the in-depth semi-structured interviews, as the study requires appraising the underlying cognitive determinants of premature scaling of startups (Saunders and Lewis, 2012). This philosophy of interpretivism as a way of acquiring information seeks to understand how a human being behaves and thinks as in the case of the phenomenon under this study. The researchers used a non-probabilistic snowballing sampling technique to select the participants, based on their startups', entrepreneurial and incubation expertise, particularly in the information technology sector. The study's sample respondents were mentors who were also entrepreneurs, were chosen using a non-probabilistic snowballing sampling technique based on their startup, entrepreneurial and incubation expertise, especially in the information technology sector. Mentors, experience go beyond their entrepreneurial journey and would have better insights from a reflective standpoint owing to their exposure to many startups and scale up candidates. This would make it easier to remember instances of cognitive biases and emotions. This was a deliberate attempt to avoid social-desirability in responses from entrepreneurs themselves.

Participants were enlisted through business forums, trainer and mentor forums, and were approached by the researchers, requesting consent to participate in the process. Our sample consists of eight respondents with direct experience in mentoring. Data for this study was derived from the semi-structured one-to-one telephone interviews. Also, for respondents who couldn't be reached in person or by phone, we used a questionnaire as well (with the same structure as interviews). Of the eight respondents, six were contacted in person and two were contacted via telephone. According to Saunders and Lewis (2012), the non-probability purposive sampling method was chosen because of its advantage to cater to collecting qualitative data in smaller samples, as the case of this research. Assuring confidentiality and anonymity, we scheduled the telephonic interview dates and times depending on the participant's availability. The open-ended questionnaire

allowed the participants to talk freely by expressing themselves on the phenomenon under study.

Data collection

The in-depth semi-structured interviews were conducted among eight participants, with an interview duration ranging from 25 to 50 min. The interview questions were divided into two sections; first, an introduction comprised priming questions that aimed to understand the participant's experiences with startups and also allowed the participants and the researchers to establish a cordial rapport. This was followed by part two, a discussion on startup failures and premature scaling. The interview was premised on the theme of understanding "How does premature scaling mistakes happen?". During the interviews, the researcher allowed the participants to talk freely, and wherever it was deemed necessary, based on the responses, attempted to probe for extra information regarding the theme (Marmer *et al.*, 2011). Interview notes, recordings, and reactions were noted down by the researchers, which allowed for in-depth data analysis.

Data analysis

The telephonic interviews were recorded verbatim and everything that would identify the participant's information was removed and a unique code (PSR 01 – PSR 08) was assigned on the transcripts. The use of the qualitative research data analysis software Nvivo (Wali and Wright, 2016) was deemed a reliable coding method that supported the content analysis strategy and allowed the researchers to infer the themes and the relationships with the coded data (Krippendorff, 2013). We broadly adopted thematic analysis as a framework for data analysis and accordingly, data were transcribed, analyzed and coded to further arrive at the findings and conclusions.

Results

All participants were men, between 30 to 55 years of age. All of them were graduates having 10 to 30 years of experience with technology startups. To ensure validity, the recorded audio interviews were transcribed and the copies were emailed back to all the participants. Necessary corrections of their responses were emailed back to the researcher and thereby confirming and acknowledging that the interview data information is reliable and valid for this research (Jentoft and Olsen, 2017; Mayring, 2000). The responses were organized under different themes and wherever deemed necessary, were corroborated with dimensions in the existing literature (Table 1). Of the six themes, "comparison," "mistaken customer priorities," "overestimation" and "overconfidence relates to cognitive bias" and "emotional over-reaction" and "impatience" relates to emotional factors (Table 2).

Discussion

Theme 1: comparison

Even within the industry, no two firms are comparable in terms of vision, mission, goals, structures, programs or staff. As a result, any comparisons that entrepreneurs are tempted to make about own firm's growth or performance or internal workings are likely to be inaccurate because they are comparing themselves to their own ideas about the other organization. These can lead to negative drifting and often, the followers are lost in the process. There is an emphasis that entrepreneurs should focus on staying on their path because this is the only way they can increase their performance, efficiency and results. Onward motivation is hard for any entrepreneur who always looks at his competitors and

Transcripts	Themes identified
"One of the worst mistakes entrepreneurs make, and one of the ways they abuse themselves, is to compare their businesses and themselves to other successful counterparts, which causes them to lose focus and control in their world, inhibiting their success"	Comparison (Almakenzi *et al.*, 2015; Poldner, *et al.*, 2017; Sadler-Smith, 2004)
"What happens in such cases is that the entrepreneurs lose track of their business and waste a lot of time experimenting with other people's ideas"	
"Entrepreneurs have themselves as their worst enemy"	Emotional over-reaction (Franke and Hader, 2014; Picken, 2017)
"When they are subjected to the tough moments in the chaotic startup phase, they get high emotions and overreaction becomes common. The reaction isn't as dramatic, but it's just as destructive. To cut the cost in an inappropriate place, may show a sign of desperation. Hiring and firing will happen in a flash of feeling. Significant resource deployment decisions can happen from the slightest positive vibe from a region. For this reason, entrepreneurs are encouraged to have a strong personality of self-control, so that they can remain calm, composed to make reasonable judgments in all situations"	
"In business, people frequently struggle to manage their expectations, which is also a discipline concept. Everyone wants their businesses to move quickly. People should understand, however, that in order for things to work properly, they must be patient. In entrepreneurship, results do not always follow a straight line"	Impatience (Coviello and Tanev, 2017)
"In business and production, entrepreneurs become obsessed and passionate about creating a specific product with certain qualities that make customers want to buy it"	Mistaken priorities (Almakenzi *et al.*, 2015; Corbett, 2005; De Carolis and Saparito, 2006; Garud *et al.*, 2014; Sarasvathy, *et al.*, 2014; Wood and Williams, 2014; Zhang and Cueto, 2017)
"However, the problem comes in when the entrepreneurs fail to acknowledge that the main aim is to solve a problem that exists in the lives of the consumers or should otherwise improvise existing conditions"	
"Every entrepreneur should ask themselves this question: Does the product solve the problem of the users? It can be determined that underlying cognitive processes substantially contribute to the effective and ineffective recognition of opportunities"	
"Startup businesses occasionally make a mistake of prioritizing the engineering of the organization, over other important factors of the company, such as customer development. When the entrepreneur plans at gaining the new users of a product, they gather a minimal amount of insight, and relevant information about the company is collected in the process since there is the less direct interaction between the client and the entrepreneur"	
"Occasionally the entrepreneurs with startup businesses are overwhelmed by being very overoptimistic. The belief makes the entrepreneur feel convinced that all their establishments will work out. Being over-optimistic leads	Overestimation (Dai *et al.*, 2017; Marom and Lussier, 2014; Webb *et al.*, 2014)

Table 1.
Interview transcripts

(*continued*)

Transcripts	Themes identified
to the failure of the scaling since the entrepreneurs fail to plan well especially what they must correctly do in case of the challenges which occur for the startups"	
"Positive self-evaluation, optimism about future events, and illusions to control bias are the three primary forms of this behaviour. Positive self-evaluation has the drawback of obliviousness to the fact that the entrepreneur may not always be correct. Positive self-evaluation often overlooks what could go wrong for the entrepreneur, the startup, and the people involved. Excessive optimism on the part of the entrepreneur can lead to self-destruction"	
"The behavior is characterized by the false belief in oneself that no one else possibly knows more than what he or she knows. It creates an understanding and deceitful optimism in the ideas that the entrepreneur upholds. The overconfident entrepreneurs believe less in what the other people think is right without realizing that they may error on the plans due to the changes in the environments. Entrepreneurs who show this behavior are occasionally overwhelmed by too many regards for what they believe; thus, they do a confirmatory bias judgment of issues in the scope of the business"	Overconfidence (Dai *et al.*, 2017; Hayward *et al.*, 2006; McMullen, 2015; Richter *et al.*, 2018)
"The problem that the entrepreneurs often encounter is the challenge of considering the other possibilities that affect the business apart from what they believe. Usually, for the overconfident entrepreneurs, their reasoning is mainly based on proofing their beliefs rather than what happens in the business environment. These behaviors often affect the scaling in that it cannot be accurate since the entrepreneurs will occasionally overlook facts about the product market, the target market and other ideas that hold the truth about the business" "This finding corroborates with the perspective of Hubris theory of entrepreneurship, which states that 'socially constructed confidence affects the manner in which they interpret information about their prior and current ventures"	

Table 1.

Sl. no.	Identified themes	No. of Entrepreneurs who generated the theme	Perspective
1	Comparison	7	Cognitive bias
2	Emotional over-reaction	5	Emotional
3	Impatience	6	Emotional
4	Mistaken priorities	8	Cognitive bias
5	Overestimation	4	Cognitive bias
6	Overconfidence	5	Cognitive bias

Table 2.
Themes generated

care should be taken not fall into the cognitive process of self-justification (Sadler-Smith, 2004).

Theme 2: emotional over-reaction

Positive emotions have an impact on cognition by expanding people's thought-action repertoires. People can, on the other hand, use their cognitive resources to alter emotional experiences. Entrepreneurs are the pace-setters of the business; this means that the success of the company depends on the actions that the leaders chose to take (Franke and Hader, 2014). If an employer gives way for emotions and frustrations to take control, the same character is carried out in the business and the whole team. Leaders should understand that challenges are part of a healthy entrepreneurial journey (Picken, 2017). If one gets to overcome the hard challenges in business venturing without emotional excesses, then organizations emerge stronger than before. In such circumstances, the most important thing is to be honest in terms of intellectual perspectives and maintain control over one's own emotions.

Theme 3: impatience

Mistakes are part of the experiences which give us lessons in our businesses; therefore, it is essential to appreciate the rate at which they grow and giving them time. It is always better to be contented with the speed the business take. This finding is in line with the previous studies in the literature that impatience of the entrepreneur results in an incorrect assessment of investment and they tend to make short-run trade-offs rather than long-term (Tella and Hall, 2020). Impatience can lead to hasty conclusions and eventually result in the self-sabotage of the start-up (Wood and Bakker, 2018). However, entrepreneurs need to quickly recognize inefficiencies and capitalize on them.

Theme 4: mistaken priorities

With very little information about a market gap or the customers' requirements, the startup business may fail in scaling, as it will not be any different from the formerly established ones. These results further explain the social cognitive theory of self-regulation, where individuals with a lower entrepreneurial-regulation focus on a heuristic decision such as overconfidence, representativeness errors and belief in the law of small numbers (De Carolis and Saparito, 2006). An entrepreneur who is willing to make the most passionate customers is supposed to openly interact with them to gain information about what they want and what they dislike (Zhang and Cueto, 2017). During the startup scaling, the entrepreneurs who fail are less aware of the client's likes or dislikes; thus they end up offering a greater number of the same products with the same drawbacks. In the operation of such a startup that is less informed, the consumers will not have the option of preferring a particular thing over the rest which does not satisfy them. Making a positive difference in the approach toward the consumers' satisfaction is what misses for the startup businesses that are likely to fail. Failure occurs due to decisions that are not well defined and without a proper understanding of the consequences that will arise from startup scaling (Sarasvathy *et al.*, 2014). Usually, the error is pushed by the post-decisional reinforcing that tends to make them rely on the positive comments.

Theme 5: overestimation

Being over-optimistic happens because of the emotional commitment of the individuals rather than the realization of the actual nature of the situation and environment of the

business. The failure due to this behavior is usually the act of over-committing too much to the establishment of new users of the intended product rather than attempting to create satisfaction of the current users, and thus converting them to being committed users of the product (Hmieleski and Baron, 2009; Dai, Ivanov and Cole, 2017). The entrepreneurs who are quite over-optimistic fail to establish a consistent pace for the investment. They shift their focus to the rush aimed at making much profit instead of making the analysis that will help them understand the target market and facilitate a well-informed scaling process that will stand out for the establishment of the startup.

Theme 6: overconfidence

Overconfident entrepreneurs focus so much on the proof and evidence that affirms their ideas and ignore the facts about the business and what the other entrepreneurs have found. Failure in the startup's scaling occurs because of the problem of overconfidence it makes the entrepreneur ignore the information relevant to the business (Krans *et al.*, 2019; Von Bergen and Bressler, 2011). Such entrepreneurs rely heavily on what they believe in, and such knowledge may be insufficient, closed and less dependable for some situations which will lead to failure. Over-optimism is usually a habit that precedes the failure of startup scaling. This is because the entrepreneur has high expectations that they will be successful in their dealings. The consequences of these ideas are that they will end up spending more cash, attracting new users of their products (Richter *et al.*, 2018). This happens because of the assumption that the company will have customers who will like their products. However, this is true, but there is a point where the business must make efforts to gain more clients. A more critical factor of the startup that will add value to the services, and thus fetch the business a reliable market is focusing on the lifetime of the customer. Unfortunately, the failing startups often overlook this and shift focus on signing up new users of a product.

Implications for practice

When entrepreneurs need to resolve a problem, they should consider all feasible solutions and alternatives (Al Issa, 2021; Ucbasaran *et al.*, 2010). While money could probably be a solution, entrepreneurs must always keep in mind that money is not always the best solution. Frugality is yet another excellent solution to solving startup problems. This study focuses on the importance of the founder's emotional traits in the entrepreneurial process, illustrating how entrepreneurial emotions can lead to cognitive bias. It is a two-edged sword when it comes to cognitive bias (Dolarslan *et al.*, 2017). As a result, authorities must pay close attention to enhancing the cognitive abilities of entrepreneurs. To maintain a positive entrepreneurial emotion during startup and scale up situations, college students' entrepreneurs should practice identifying their own cognitive model, distinguishing between optimism and overconfidence, and establishing a set of risk and uncertainty evaluation methods (Isenberg, 2012; Krans *et al.*, 2019; Von Bergen and Bressler, 2011). Second, policymakers should have a clear knowledge of entrepreneurial emotions when it comes to entrepreneurship management. In the future, entrepreneurship education must focus on guiding individuals' positive entrepreneurial emotions and actively assisting them in identifying good emotions to promote genuine entrepreneurial behavior.

The value proposition is a fundamental component of the business model and the essence of the product in the marketplace, as entrepreneurial choices must be based on it. This thinking should be used to determine how the product will satisfy the various demands of the consumer and how distinctive it will be in the marketplace. As a result, investors can define the minimum viable product (MVP), which allows them to determine the best value for the targeted customers (Fisher *et al.*, 2016). The business model and business plan are

critical components of any firm's problem-solving strategy. The entrepreneurs should, therefore, produce and update a proper business plan, and the model of a quickly changing market should be updated quarterly. Similarly, the supporters of the company, who could be the lenders or the financial supporters, should be updated on the model, so that the decision-making process should be effective (Smith *et al.*, 2016). The market changes also need to be reconsidered. They should consider technology and the changes in the products while any changes in the consumers' needs, should be regarded as, to establish a robust competition.

Not everyone who aspires to be an entrepreneur will thrive, according to estimates of entrepreneurship success rates. People who lack the necessary skills, resources or motivation should, without a doubt, be allowed to question their readiness. We may be able to avoid the negative consequences of misdirected effort on self-concept, family circumstances, and societal impact if we can identify and adequately caution those with a high likelihood of failure. With that goal in mind, we inquired as to what causes entrepreneurial failure, particularly in early-stage businesses. According to a popular line of thought (Dost *et al.*, 2021; Krueger and Brazeal, 1994), cognitive biases can include the desire to start a business or the impatience to grow. These biases cloud an aspiring entrepreneur's judgment when evaluating the viability of various ventures. In the end, this overestimation can sabotage early efforts to organize and launch a business. The findings show that cognitive biases play a significant role in the decision-making, of many ill-prepared entrepreneurs.

This study adds to the nascent literature on neuroentrepreneurship which discusses entrepreneurial decision-making, entrepreneurial cognition and entrepreneurial behavior (Sharma et al., 2021). Furthermore, the growing literature on cognition as a key contributor to entrepreneurship is now given more credence in scaling (Mitchell *et al.*, 2002; Ucbasaran, 2010). As a result of this focus, a growing number of academics are questioning whether entrepreneurs make rational decisions (Hmieleski and Baron, 2009; Simon *et al.*, 2000). For startups to flourish, this research study suggests that unhealthy hastiness, emerging out of overconfidence, comparison, overestimation, emotional over-reaction, impatience, and mistaken priorities should be restrained to the best extend possible. Entrepreneurs should avoid spending money on scaling the business before they have nailed what customers want and have identified appropriate means to reach, satisfy and engage them. Premature scaling makes the business entity less agile due to the asymmetrical and inorganic growth, and hence, it is very important for the entrepreneur not to fall into the aforementioned such decisions. It is recommended for strategists and policymakers to integrate the insights gained from this study to entrepreneurship development programs too (Aboobaker and Renjini, 2020).

Further research on the entrepreneurial investments that are both too optimistic and overconfident toward pursuing success is less willing to quit the habit and also less likely to succeed (Thomas, 2018). These entrepreneurs waste both the resources and time on the same failing investments while expecting the business to do well (Cardon *et al.*, 2011; Thomas, 2018). Such relentless investments are heavily discouraged, as the more the entrepreneur is involved with them, the more they become optimistic and unwilling to quit them. Other researchers have found that the failure due to optimism and high expectations in the success of the business whatsoever creates the problems of realizing the entrepreneur's faults (Blank and Dorf, 2012; Von Bergen and Bressler, 2011; Soomro and Shah, 2021). As a result, there is a high tendency of the investor turning a blind eye on their failures (what they fail to consider in the business) and putting the blames on the circumstances such as the market situations. The success anticipated by the optimists is achievable by establishing some controls to favor its occurrence. Even if being optimistic about success is advisable, there is a common problem that is identified as viewing the possibility of success happening just in

the direction of pursued effort which should be avoided. Optimists are also identified as those who perceive the negative feedback less keenly and use the interpreted information to prepare themselves for the challenges in the future. In all, this study add to the literature that examines the cognitive drivers that push entrepreneurs toward sustainable venture creation (Abdelnaeim and El-Bassiouny, 2020).

Limitations and conclusion

To ensure validity and credibility of the raw data from the participants, the researcher confirmed that there was no manipulation of the data, thus a true reflection of the findings and conclusion was, therefore, presented as a success of this research. The study was made possible with the support of the voluntary participants chosen by purposive and snowballing data sampling. The Interviewee and interviewer biases could have also crept in as part of this qualitative approach. In terms of application, the findings support the need for interventions that can improve candidates' readiness for an entrepreneurial venture by making them more self-aware, and thus more realistic. High resource availability and consequent high sense of security hamper realistic assessment. More time spent advising people who are likely to fail means less time spent advising people who have great potential. Academics, advisors and policymakers should be concerned about the gravitation of poorly prepared entrepreneurial aspirants to symbolic appeals. Low-potential entrepreneurs are particularly lured by these appeals, often losing significant savings and retirement funds. A logical next step would be to see if cognitive biases were present in equal intensity before, during and after scaling, and whether they influenced subsequent entrepreneurship-related plans and behavior. Another extension work should look into whether the findings on ecosystem dynamics and cognition and the interrelationships can be applied to other countries. Further studies can corroborate the results with quantitative lifecycle stages of the start-up and also conduct exploration on specific stages of qualitative lifecycles of start-ups.

Entrepreneurs often make the mistake of premature scaling of the startup businesses due to the failure to comprehend their cognitive styles and behaviors necessary for the right scaling. Usually, premature scaling failures are signified by some behavioral patterns that display a poor understanding of oneself and the markets. The behaviors that result in the failures include being over-optimistic and overconfident in the scaling stage. Most of the time, when there is a failure in the scaling of the startups, the entrepreneurs seem to chase the profit-making motive by creating new users for the product, as opposed to satisfying the long-lasting priorities. Over-optimism and too much confidence cause the entrepreneurs to have a blind pursuit for success, which, in turn, leads to further cyclic failure. The findings of this research will aid Funding agencies, entrepreneurs and policymakers in the cognitive and behavioral analysis of new entrants, as well as their strategies, allowing start-ups to move forward more efficiently and effectively in a competitive business environment, rather than succumbing to the trap of premature scaling.

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