

How do Cognitive Biases affect Strategic Decision Making in SME's and How can they Avoid their Mistakes made Due to such Biases

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ABSTRACT

The field of behavioural economics is an emerging area of study which has answered various questions that revolve around core economic problems. Therefore, it becomes essential to look into strategic decision making in small and micro enterprises through a behavioural perspective since such enterprises are run by individuals and there is an absence of a decision-making body that in turn leads to flawed decision making. This paper examines biases and heuristics that affect entrepreneurial decision making across various lines in the Small and Medium Enterprises (SME) sector. Biases such as the status quo bias, the hyperbolic discounting bias and the hindsight bias in particular are discussed in this paper. The paper proposes a specified solution set for every bias to negate their effects, and also specifically talks about the assumption of rationality and the framework of behavioural biases that lead to flawed decision making.

1.Introduction

SME's are small and micro enterprises are seen as a key element in achieving the "growth" and "employment" targets in several countries (Erdin & Ozakaya, 2020). Small and Medium Enterprises (SMEs) form the backbone of most economies across the world particularly the developing ones. According to a World Bank report, they account for 80% of businesses in developing countries and are the most significant employment drivers, more than "50% of employment worldwide" (Small and Medium Enterprises (SMEs) Finance, n.d.).

All world bodies predict that the SME's potentially will be the key employment providers across the world making them a priority watch for all Governments. In India, SMEs provide more than 40% of jobs generated domestically. It is this significance that has made SMEs an interesting case study for Entrepreneurial decision making (EDM) watchers. Due to their significantly smaller and close knitted top management, most of the decision making in the SMEs are left to the judgment of their Chief Executive Officer, a position mostly held by the owners and founders themselves. In the absence of a larger decision-making body, individual bias and prejudices are more conspicuous and less contested in an SME making their decisions more severely affected by biases and heuristics. This negative has become a serious topic of research for experimental psychologists and economists.

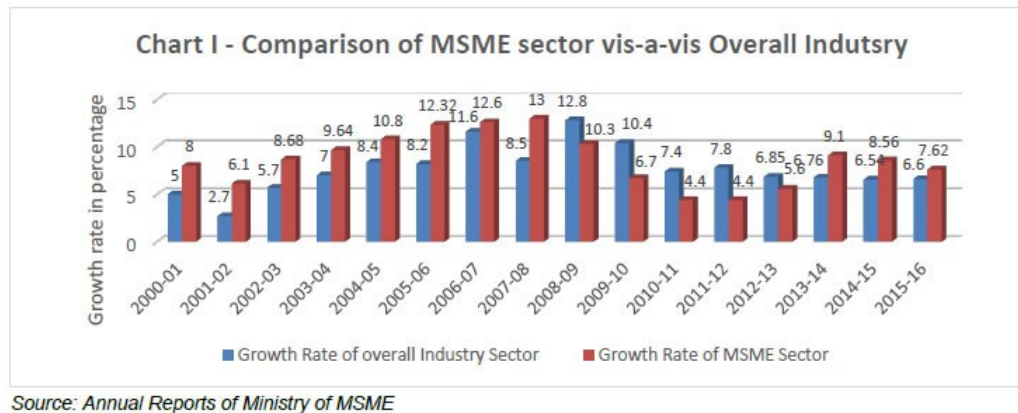


Fig.1

India is one the fastest growing economies in the world and the SME sector is arguably the most essential contributor to India’s future growth prospects. As seen in figure 1, the data provided by the Reserve Bank of India, the MSME sector in India has consistently had a growth rate greater in comparison with the overall industry sector which highlights the significance of this sector. Cognitive biases significantly affect decision making when it comes to entrepreneurial decision making and often lead to flawed decisions. These decisions in the long term are detrimental for the growth prospects of such enterprises and the overall SME sector at large. Therefore, in a country like India decision making in SME’s which are sometimes severely affected by constraints and Cognitive Biases becomes a matter of concern.

The main part of the paper is divided into four sections elaborating biases that affect entrepreneurial decision making and talks about the types of Cognitive biases that affect SME’s, in particular. This paper also talks about the Status quo bias, Hyperbolic discounting bias and the Hindsight bias that are covered in section 3 and will also mention how these biases affect what kinds of decisions taken. The paper examines why mostly small and micro firms are susceptible to such fallacies and bias? What about larger firms and enterprises? Finally, the research review focusses on ways for SMEs to avoid making decisions under cognitive biases. The paper also attempts to assess the impact of these biases on decision-making of Indian SME owners in particular; and to determine whether age, experience, education, and gender affect the propensity of Indian SME owners to exhibit these behavioural biases (Kumar, Baker and Singh).

2.SME’s in Context

Biases mainly occur due to some inherent factors such as personal experience, an entrepreneur’s social connections or business connection and personal capital. These biases cause an unconscious divergence from economic rationality (Kahneman & Tversky, Judgment under Uncertainty: Heuristics and Biases, 1974). Mostly cognitive biases in SME’s arise from errors that result from incomplete information or the inability to analyse the information that is available (Hayes, How Cognitive Bias Affects Your Business, 2022). This could also be attributed to the fact that decision making at the highest level in an SME is restricted to one or two individuals only without a lot a corporate exposure where there is a considerable deliberation and accountability in decisions. Cognitive errors or biases could be classified into two types firstly as belief perseverance which refers to the tendency to maintain held beliefs even when the evidence supporting such beliefs is fully invalidated (Guenther & Smith, 2020). In simpler terms this bias occurs when someone’s existing beliefs are challenged due to availability of new information. Biases also occur while processing errors which happens when an individual fails to analyse and compute information that requires a lot of mental effort. These biases can affect a large section of society especially in a country like India where people don’t have access to

proper nutrition, education and healthcare services which makes them more vulnerable to these systemic biases. Economists have applied these ideas to more standard economic tasks, such as small-stakes risk aversion or monetary discounting, typically finding an impact of diminished bandwidth (Mullainathan, Schofield, & Schilbach, *The Psychological Lives of the Poor*, 2016). We use the term “bandwidth” to refer to two broad, related components of mental function. The first might be referred to as cognitive capacity, the psychological mechanisms that underlie our ability to solve problems, retain information, engage in logical reasoning, and so on (Mullainathan & Shafir, *Freeing Up Intelligence*, 2014). Along with these certain biases such as Status Quo bias, Hindsight bias, Hyperbolic discounting bias also affect strategic decision making not only in Individuals but also in SME’s which will be further highlighted in this paper.

It has been found that effective strategic decision making significantly increases performance, success, and survival of small and very small corporations (Jankelová, 2017). This is exactly why it is important to study different biases that affect decision making in individuals who are running these businesses.

The SME sector is arguably one of the major driving forces behind the Indian economy or the economy of any nation for that matter. From Trump to Modi every head of state has prioritized SME’s as a part of their economic agenda. America’s small business sector is on the road to recovery, and it is happening much faster than the experts predicted. More than half the jobs lost to the pandemic have already been regained (Carranza, 2020). This further reinstates the role of SMEs as a major economic booster given that it contributes to employment creation, innovation, exports, and inclusive growth of the economy. When talking about SME’s, I will focus on the Indian context through the course of this paper. SMEs are broadly divided into two categories firstly Micro enterprises, their investment in plant and machinery is up to Rs.1 crore (1,26,325\$) and annual turnover does not exceed Rs. 5 crore (6,31,625\$) and the next are small enterprises, whose investment in plant and machinery is up to Rs.10 crore (12,63,224\$) and annual turnover does not exceed Rs. 50 crores (63,16,120\$). The study highlights various entrepreneurial decisions involving risks and uncertainties. Such biases and heuristics not only affect decisions under uncertainty but also leave other domains of entrepreneurial decision making such as health and safety, employment, Mergers and acquisitions exposed and vulnerable. The context in which entrepreneurs make decisions is extreme in various ways: high uncertainties and ambiguities, high consequences, time pressures, emotional anticipation, and reactions (Nuijten, Benschop, Rijsenbilt, & Wilminck, 2020). This is precisely why system 1 becomes prone to systemic biases. Further in the next section I will talk about the innate processes through which biases affect strategic decision making.

3.How do Biases Affect Decision Making

Cognitive biases are key ingredient in the process of strategic decision making and there is a growing interest by academicians and scholars to study the effects of cognitive biases on decision making capabilities of individuals. Nevertheless, little effort has been made to integrate cognitive biases with various modes of decision making beyond the early attempt by Lyles and Thomas (1988) to study biases in problem formulation (Das & Teng, 1999). In my perspective cognitive bias affects different decisions according to the situation at hand and there isn’t a unanimous assumption that only one bias affects every decision taken. Therefore, researchers are yet to specify the conditions under which each cognitive bias may be prevalent (Das & Teng, 1999). Now strategic decisions are important because they require a lot resources, effort and precedents before being implement hence it is much more vulnerable to cognitive biases as it is a laborious task for our brain to compute and analyse a task of such large proportions. (Eisenhardt & Zbaracki, 1992) propose three dominant paradigms of strategic decision processes: rationality and bounded rationality, politics and power, and garbage can. The rational paradigm describes decisions making as a comprehensive process which has its own distinct procedure which is often tampered with by biases. Decision makers are known to rely on a few judgemental rules, or heuristics, to simplify complex decision situations. Although these ‘rules of thumb’ are often necessary and useful, they also introduce cognitive biases that can lead to severe and systematic errors in decision making (Kahneman & Tversky, *Judgment under Uncertainty: Heuristics and Biases*, 1974). I will briefly talk about each of the heuristics and how do they lead to systemic biases, but first I will highlight what heuristics are. A

heuristic is a word from the Greek meaning ‘to discover’. It is an approach to problem-solving that takes one’s personal experience into account. Heuristics provide strategies to scrutinize a limited number of signals and/or alternative choices in decision-making. Heuristics diminish the work of retrieving and storing information in memory and of streamlining the decision-making process by reducing the amount of integrated information necessary in making the choice or passing judgement (Dale, 2015).

3.1 Biases and Heuristics in EDM

“Heuristics are mental shortcuts that allow people to solve problems and make judgments quickly and efficiently”. However, these shortcuts can sometimes make people arrive at decisions which are not weighed or deliberated upon adequately. Our brain uses cognitive shortcuts that come into play when one is estimating probabilities by assessing it based on an existing prototype in one’s mind. For example if you see someone wearing glasses with unruly hair, the words that first come into your mind are that the person will be a nerd/bookworm, geek etc and if you see someone with long hair and tattoos your brain would think of him/her as a rapper or an artist but in reality the guy who wears spectacles and has unruly hair may actually be an artist and the guy who has long hair and tattoos may be a serious researcher.

There are heuristics that describe our tendency to use the information that strikes our mind first. Consider for instance two students Steve and Michael they have the same average GPA through high school, extracurriculars, and extremely identical recommendations, same amount of work experience both of them are toppers of their respective classes, and you have choose one out of the two but you suddenly get hold of a new piece of information about Steve that says he lost a piece of documentation at his previous company which was critical for a Merger. Given the access to this new information from Steve’s previous employer and despite him being close to perfect on paper you will hire Michael instead of Steve, now this is where the bias occurs, and this is how the heuristic works. These are just the fundamental working process of our mind, and the biases that majorly affect EDM such as the status quo bias, the hyperbolic discounting bias, and the hindsight bias that will be analysed in further sections.

According to various studies such heuristics tend to affect entrepreneurial decision making especially when these decisions are left to one person. These decisions may lack the required deliberation of alternatives available and short- and long-term impact of the decision creating errors.

3.2 Element of uncertainty

When entrepreneurs take decisions under uncertainty there is an element of risk involved which makes the nature of such decisions more complex. In other words, a set of heuristics are involved when our brain comes across a complex computation or analysis. These heuristics then in turn lead to systemic biases. These Biases are not attributable to motivational effects such as wishful thinking or the distortion of judgements by payoffs and penalties (Kahneman & Tversky, Judgment under Uncertainty: Heuristics and Biases, 1974). It is not only the common man who is affected by the prevalence of these biases but enterprises as well even though they have people who possess specialised skills and understand the understand how heuristics trap them yet the deliberation of a larger decision-making body remains absent. Therefore, no matter how cautious or educated you are the trap of intuitive thinking that comes into play is inevitable. Our brain perhaps is better programmed to think intuitively rather than statistically. the subjective probability of a given event is defined by the set of bets about this event that such a person is willing to accept (Kahneman & Tversky, Judgment under Uncertainty: Heuristics and Biases, 1974) . But these predictions are in most cases consistent with the internal beliefs of a particular individual. Consequently, the decisions made are a result of such beliefs. When faced with complex calculations and computations, even the people who are best equipped with such skills such as that of entrepreneurs and analysts ultimately make errors in decision making. The impact of these systemic biases on businesses is huge as employers can hire the wrong employees, may implement flawed strategies, and fail to

understand new technology and information that may benefit their organisations and may further tamper with the growth prospects of a small and medium enterprise.

Cognitive bias distorts your decision-making skills. Rather than objectively viewing a situation and making an impartial decision, cognitive bias can lead to suboptimal decisions being made due to some inherent bias that has been ingrained in an individual for a long time (Hayes, Investopedia, 2022). Therefore, it becomes imperative to overcome and avoid such biases as they hinder the growth of businesses and creates a positive feedback loop which frequently leads to flawed and irrational decisions. Given the mechanism of thought in our brain which is largely based on Intuitive thinking, it is rather common for SMEs to deviate from rational economic decisions.

Also, system 2 is overburdened when it comes to analysis or doing things that require focus and attention, and since our brain is used to finding shortcuts therefore, system 2 is not able to detail its findings which it is best suited to do.

3.3 Assumption of rationality

Now the concept of rationality in economics is subject to the normative approach in terms of decision making, hence it focuses on what should be done rather than what is happening. In a nutshell, the economic rationality principle is based on the postulate that people behave in rational ways and consider options and decisions within logical structures of thought, as opposed to involving emotional, moral, or psychological elements (Michalos, 2014). It is generally assumed that people and SME's are economically rational when making decisions, but that is not true there is bound to be irrationality due to the amount of complex computations involved. Also, since in most cases business owners in the SME sector perceive themselves to be rational, it is because of this fact that their decisions making ability becomes flawed and they become susceptible to cognitive biases. The know it all or knew it all along phenomena usually occurs. For example, when brokering out a business deal in which one party assumes that it knows everything or has known everything all along, to be specific Alexander Graham bell offered the patent of the telephone to western union for 100,000\$, but they refused as did not recognise the commercial possibilities that the telephone brought along with it, eventually the telephone became a major hit and the rest is history. Simply in behavioural economics this case refers to the hindsight bias and is a primary example of the assumption of rationality.

The most common type of biases that affect one's business are Hyperbolic discounting bias, status quo bias and hindsight bias which I will detail in the successive sections along with how to prevent falling in the jaws of cognitive biases.

4. Status Quo Bias

Research in recent years has shown that entrepreneurial decision making in general is more susceptible to cognitive biases than other types of decisions made. Entrepreneurs are often associated with the Schumpeterian innovator implying an openness to new options. Therefore, the well-known status quo bias, i.e., an individual's tendency to repeat a previous choice, is a promising candidate to falsify the statement that entrepreneurs are more biased than others (Burmeister & Schade, 2007). In simple terms Status quo bias occurs when someone prefers the current situation instead of something new or a completely unexplored situation. This bias mostly occurs due to the reluctance of individuals to change their preferences when encountering something they haven't encountered before. This bias describes a behavioural tendency to decide for a status quo option disproportionately often Samuelson & Zeckhauser, 1988). It is highly likely that such a situation would occur in a country like India as many people run ancestral businesses that are hereditary and therefore the entrepreneurs have a rigid ideology and fixed approach towards decision making. When talking about this bias specifically it becomes important to distinguish between consistent choices as a social norm and the going with the status quo as a behaviour, this paper specifically highlights the susceptibility of an individual affected by the this bias and not as a social norm which may act as a constraint to

limit the decision making ability of a particular individual. For example many business in India choose to buy or sell their stock to/from a particular wholesaler/retailer even though others might put up a more lucrative offer, this is just because of existing sentimental values which set the precedent for the bias to occur. Therefore, status quo bias is not an isolated phenomenon but related to other solid effects known from behavioral economics: the endowment effect (Thaler, 1980).

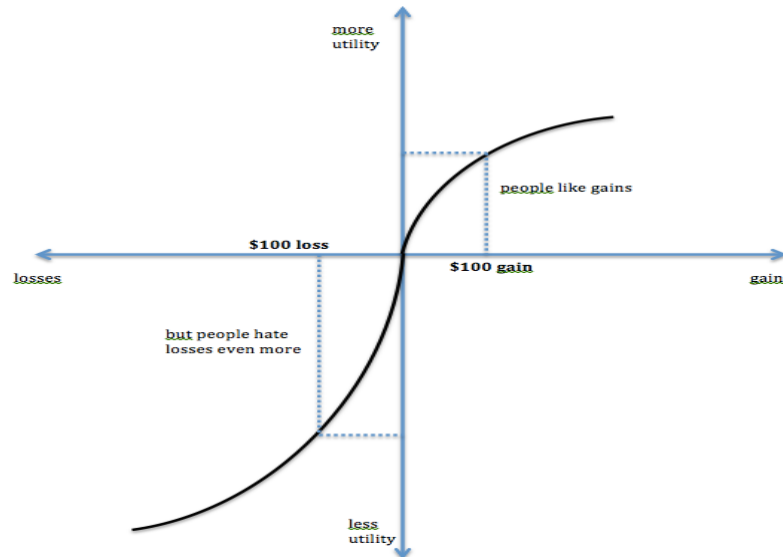


Fig.2

Figure 2 Illustrates the endowment effect which leads to status quo bias as mentioned above. It represents a basic principle which was first noticed by Scottish economist Adam Smith which states that people like gains, but they hate losses much more than they like their gains.

To measure the effects of status quo bias in entrepreneurial decision making (Burmeister & Schade, 2007) conducted two experimental studies. Altogether, the comparison groups consisted of 427 students and 135 bankers specialized in start-up financing; 240 entrepreneurs participated in our experiments. They controlled for differences in experience by confronting individuals with both business and consumer contexts. In their decisions, participants had to make decisions in scenarios such as buying a digital camera, purchasing an MP3 player, renting new office space, determining the margin in a tender offer, buying business software, and deciding on which new market to enter. Different respondents across all groups of individuals faced different versions of the above scenarios. Whereas the basic features of the scenario descriptions were kept identical, different options were presented as the status quo, except for the neutral version where no status quo existed (Burmeister & Schade, 2007). To accommodate the busy schedules of the entrepreneurs they experimenters also sent out questionnaires (personal interview via email or fax). Comparing the affectedness by the status quo between male and female entrepreneurs for all those scenarios where we have data from studies 1 and 2 (tender, digital camera, and market entry), they found that the interaction effect between group and scenario becomes statistically significant. However, there is no general difference in the affectedness by the status quo between male and female entrepreneurs (Burmeister & Schade, 2007).

While the studies concluded that status quo bias affects bankers more than entrepreneurs it did not mean that status quo bias did not affect entrepreneurs in fact status quo bias leads to flawed decision making for entrepreneurs running SMEs quite significantly. To what extent does this specific bias affect decision-making depends upon mainly two aspects from my perspective first, the nature of the situation and the associated heuristic that acts according to this situation which ultimately leads to the bias. Second, is ecological rationality which is adapted by the interaction between the human mind and the environment.

It is imperative that you must assess your situation and calculate the opportunity cost relative to one decision this will help a buyer analyze their decisions more intricately. Don't be afraid of making changes as it will eventually help you in getting better outcomes and reevaluate your decisions. It is important to realize and ask for help as there a lot of experts that can guide you to help your business grow.

If you're a seller — listening to the customer is of course essential, but instead of just giving responses to their list of questions, you need to ask more questions to get to the bottom of the customer's real problem to offer solutions. Don't be afraid to bring your expertise into the conversation and enlighten the customer about problems they haven't even realized yet (Tveit, 2022).

Given the nature of EDM it is generally very difficult to avoid this bias as it becomes and recurring and inherent trend in our approach when making decisions. SME's can negate the initial effects of the status quo bias by taking time and letting system 2 carefully consider and analyse all options at hand which will automatically reduce the chances of irrational decisions. Also another approach which essentially counters this bias is framing, for instance whenever an enterprise is faced with making a decision or making a choice one can start by framing the default option as a loss and just put in more effort to analyse more options and designate other options as gains for the their enterprises, this help in almost every aspect be it employability where one is looking for some specific attributes when looking to hire someone.

5. Hyperbolic Discounting Bias

Hyperbolic discounting bias occurs when people choose smaller short terms rewards over larger long-term awards due to time constraints, this situation applies not only to monetary rewards but to other prospects as well. Hyperbolic discount functions induce dynamically inconsistent preferences (Laibson, 1997), which have underlying constraints that affect an entrepreneurs future decision making ability. According to my observations one underlying factor that causes the bias in not only in entrepreneurs in India but in fact any other individual, is the temptation of taking a decision as soon as possible. The reason is that our mind wants results or in this case rewards with immediate effect which essentially restricts systems 2's ability to analyze the decision. In India such a scenario highly plausible. To provide anecdotal evidence I conducted a very short survey in which I interviewed 10 business owners, ranging from tyre manufacturers to local business owners selling goods ranging from sports equipment to groceries and rugs. I asked them one basic question using a hypothetical scenario, the question being 'If you have chance to receive Rs. 1 crore (1,25,116\$) as an investment would you claim the entire amount now or would claim Rs.5 lakh (6,255\$) per month over the span of 20 months?'. 7 out the 10 owners I questioned wanted to claim the initial Rs.1 crore (1,25,116\$) investment as a lump sum amount instead of the Rs.5 lakh(6,255\$) just because they would prefer a 7 digit amount in their bank accounts, this is the conclusion I drew based on how they were talking as all they wished for were immediate monetary rewards. For someone who is not utilizing the potential of their system two to analyze the fact that instead the Rs.5 lakh (6,255\$) every month for 20 months would have generated much more amount from interest and would have catered to a lot more day to day functioning of their enterprises. Simply I concluded that it is because of the intuitive thinking and the affinity to avoid complex computations and utilise the potential of system is what lead to this systemic bias. Additionally, we can associate self-control as another inherent factor which contributes towards the working of this bias as for most individuals waiting is difficult.

In a controlled experiment to test Hyperbolic Discounting bias (Kramer, Swart, & Janssens, 2017) tested whether violations of time consistency empirically overlap with violations of stationarity, they conducted an artefactual field experiment in rural Nigeria. Participants received ten vouchers to divide between two future payment dates, with the later date exactly one month after the sooner date. Vouchers allocated to the later payment date were always worth 200 NGN.6 Vouchers allocated to the sooner payment date were worth either 200, 150, 120 or 100 NGN.

Since vouchers allocated to the later payment date are worth a fixed 200 NGN, the return on waiting decreases in the value of sooner vouchers. Thus, when sooner vouchers are worth 200 NGN, the return on waiting is the lowest. In that case, participants indeed allocate most vouchers to the sooner payment date, leaving on average 3.5 and 2.9

vouchers for the later date in choices regarding first-and second-round payment dates, respectively. When sooner vouchers are worth 150 NGN, participants have a higher return on waiting and allocate about five additional vouchers to the later date ($p < 0.01$). Compared to these choices, when vouchers are worth 120 NGN, participants allocate an additional half voucher to the later date ($p < 0.01$). Reducing the value of sooner vouchers even further to 100 NGN has a very similar effect. Hence, as the return on waiting increases, participants allocate more vouchers to the later payment date, consistent with monotonicity.

Another very famous experiment that shows the effects of Hyperbolic discounting bias was about a point to a change in West Virginia law, which stipulated that students under the age of 18 who choose to prematurely leave school also lose their driving licenses. A year after the law was implemented, high school dropout rates fell by one third. (Loewenstein & Thaler, 1989) believe this points to discounting, as it is unlikely that this many students were on the edge of dropping out and their rational calculus was tipped in favour of staying enrolled because of the inconvenience of losing their driving permits. It is more likely that students had previously discounted the long-term consequences of dropping out. But once the short-term consequence of losing their licenses was tied to enrolment, there was suddenly an immediate reward associated with staying in school— which they prioritized over the long-term rewards that were previously overlooked (Loewenstein & Thaler, 1989).

Hyperbolic Discounting thus is potentially one of the main reasons for low savings and low ROIs in the case of SME's. Most people want Immediate gratification as most decision makers do not want to go through an unpleasant experience of waiting for a future reward.

Christine Sheffer found a solution to overcome the effects of Hyperbolic discounting by Priming which happens when someone is exposed to a stimulus which could be a word, a photo, a video, or anything that directly affects their action when exposed to a second stimulus.

So, for entrepreneurs by making them more conscious of the future might help negate the effects of this bias. This can be done by constantly exposing these owners to words such as 'future', 'return on investment', 'long term' and 'self-control' in a controlled setting as this will compel these owners to be wary of the future. Another solution would be getting these entrepreneurs access to affordable books on investing principles and making them attend seminars and workshops where people talk about long term prospects for businesses. In fact, a very helpful resource would be Ray Dalio's books such as 'Principles' and 'Principle for success' I personally recommend them as they are easily available and easy to comprehend for most people. This is how one can reduce or nullify the effects of Hyperbolic discounting bias.

6. Hindsight Bias

Baruch Fischhoff was the first to study this 'knew it all along' phenomenon experimentally, he was motivated by the work of his supervisors, Daniel Kahneman and Amos Tversky on Heuristics, this idea initially struck his conscience when he read an article by Paul Meehl which described how doctors exaggerated as if they knew how a patient's case was going to turn out all along. In simple terms Hindsight bias is a psychological phenomenon that allows people to convince themselves after an event that they accurately predicted it before it happened (Chen, 2022). Therefore, it is also known as the knew it all along bias. The Hindsight bias is closely related to the Dunning- Kruger effect which is perhaps one the root causes of this bias. Dunning-Kruger effect, in psychology, a cognitive bias whereby people with limited knowledge or competence in each intellectual or social domain greatly overestimate their own knowledge or competence in that domain relative to objective criteria or to the performance of their peers or of people in general (Duignan, 2022).

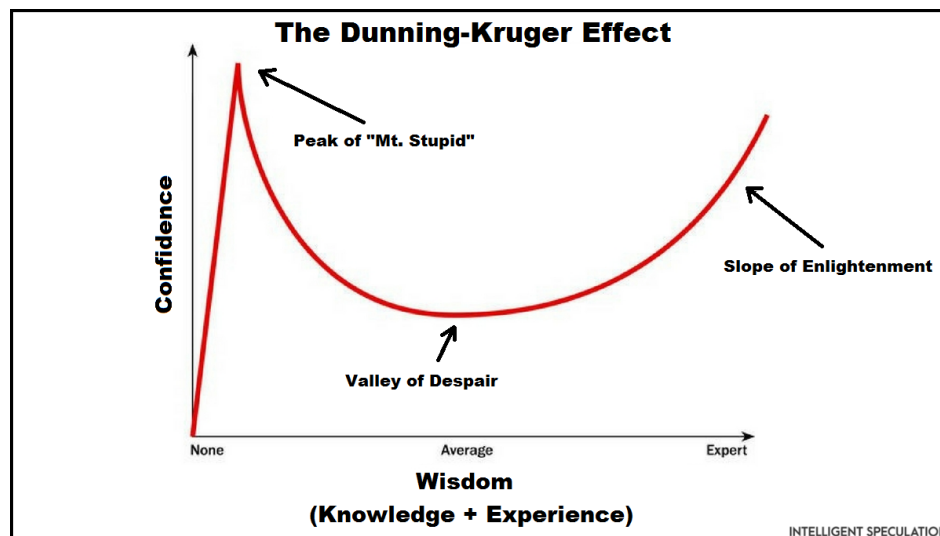


Fig.3 Dunning-Kruger effect (Maloney, 2019)

This seems a very plausible scenario when considering Indian SME owners in terms of their decision making. Because, when the time for retrospection comes entrepreneurs and law makers realise that a lot of ‘obvious’ details have been overlooked. Such a technique is used to analyse realistic risk assessments which are mostly based upon similar past events in avenues such as finance, law-making and of course entrepreneurship.

For instance, Researchers Dorothee Dietrich and Matthew Olson asked college students to predict how the U.S. Senate would vote on the confirmation of Supreme Court nominee Clarence Thomas (Dietrich & Olson, 1993). In this study before the senate voting 58% people confirmed that Thomas would come into power but, when these students were asked to poll again after the students were confirmed 78% of the people said that they thought Thomas would be approved.

This bias can take place in many forms such as political predications, fantasy bets for sports such as the NBA or formula 1 but when it comes decision making in the SME’s this includes blaming others in the sense that some other employee should have known the so-called obvious details that have been overlooked. This could also be important during the time of share market investments where people tend to find the easier way and tend to exploit the intricacies of system 2.

One way that Roese and Vohs suggest counteracting hindsight bias is to consider and explain how the outcomes that did not unfold could have unfolded. By mentally reviewing all the potential outcomes, an event will seem less inevitable and foreseeable. However, Roese and Vohs note that we should not look to consider an overwhelming number of alternative outcomes, as the decision-maker could misinterpret this difficulty as an indication of their implausibility rather than their sheer number (Roese & Vohs, 2012).

Entrepreneurs could assess each and every scenario related to different decisions they make, as it will make the outcome of that decision much more predictable and foreseeable and help the entrepreneurs to make a choice as mentioned in the experiment above. This could be done using small scale simulations where entrepreneurs can start implementing two or more kinds of actions or plans in stages which will help them identify the correct path ahead for them. It is advisable to not consider too many options while doing this simulation as it makes their decision much more complex and susceptible to a cognitive bias.

Hindsight bias becomes a dangerous gray area when considering entrepreneurial decision making in SMEs as the nature of dealings that involves day to day retrospection, reports, and analysis one is bound to fall into the trap of this systemic bias.

Discussion

The nature of decisions making in SME's makes them particularly vulnerable to systemic biases which are the source of countless flawed decisions in SME's not only in India, but this applies to any enterprise of the same magnitude anywhere in the world. In India where the SME sector is the fastest growing sector mistakes like these come at a very high opportunity cost which could be crucial for the future growth prospects in this sector.

Entrepreneurs should not base their decisions on intuitions and intuitive thinking alone as it brings internal bias into the forefront and impacts rationality. They are better off taking time and basing their decisions on facts and rational indices rather than getting swayed by biases.

Conclusion

The first segment out of the three biases listed in this study, which is that of the status quo bias, is one of the most intriguing as it gives us rudimentary insight about the thought procedure of entrepreneurs when facing complex decisions that involve tasks such as risk analysis, investment, R&D etc. The other two segments of this study were much more bizarre in comparison to the status quo bias as they describe the inherent defaults which are extremely fundamental in nature but highlight some of the strongest human tendencies that are particularly difficult to tackle in entrepreneurial decision making.

This study is based on an extremely specific strata which touches the Indian SME sector and how behavioural biases exploit decision making in entrepreneurs causing them to make flawed decisions. These biases can be reduced by enlarging the decision-making authority and ensuring that decisions are deliberated at various levels for constructive input for better results. Future research into this could elaborate upon large-scale solutions to tackle behavioural biases in other segments of entrepreneurial decision making.

References

- Erdin, C., & Ozakaya, G. (2020). Contribution of small and medium enterprises to economic development and quality of life in Turkey. *Heliyon*. <https://doi.org/10.1016/j.heliyon.2020.e03215>
- Small and Medium Enterprises (SMEs) Finance. (n.d.). Retrieved september 4, 2022, from <https://www.worldbank.org/en/topic/sme/finance>
- Kahneman, D., & Tversky, A. (1974). Judgment under Uncertainty: Heuristics and Biases. *Science*, 1124-1131. DOI: [10.1126/science.185.4157.1124](https://doi.org/10.1126/science.185.4157.1124)
- Hayes, A. (2022, February 07). How Cognitive Bias Affects Your Business. Retrieved from Investopedia: <https://www.investopedia.com/articles/investing/022015/how-cognitive-bias-affects-your-business.asp>
- Guenther, C. L., & Smith, A. M. (2020). Belief Perseverance. *obo in Psychology*. DOI: [10.1093/OBO/9780199828340-0258](https://doi.org/10.1093/OBO/9780199828340-0258)
- Mullainathan, S., Schofield, H., & Schilbach, F. (2016). The Psychological Lives of the Poor. *American Economic Review*, 435-440. <https://doi.org/10.1257/aer.p20161101>
- Mullainathan, S., & Shafir, E. (2014, January/February). Freeing Up Intelligence. *Scientific American Mind*, pp. 58-63. DOI: [10.1038/scientificamericanmind0114-58](https://doi.org/10.1038/scientificamericanmind0114-58)
- Jankelová, N. (2017). Strategic Decision Making and Its Importance in Small Corporations. In O. L. Emeagwali, *Governance and Strategic Decision Making*. DOI: [10.5772/intechopen.68858](https://doi.org/10.5772/intechopen.68858)
- Carranza, J. (2020, October 31). Small Businesses Are Driving the Trump Recovery. Retrieved from SBA US Small Business Administration: <https://www.sba.gov/blog/small-businesses-are-driving-trump-recovery>
- Nuijten, A., Benschop, N., Rijsenbilt, A., & Wilminck, K. (2020). Cognitive Biases in Critical Decisions Facing SME Entrepreneurs: An External Accountants' Perspective. *Administrative Sciences*. <https://doi.org/10.3390/admsci10040089>

- Das, T., & Teng, B.-S. (1999). COGNITIVE BIASES AND STRATEGIC DECISION PROCESSES: AN INTEGRATIVE PERSPECTIVE*. *Journal of Management Studies*, 757-778.
<https://doi.org/10.1111/1467-6486.00157>
- Eisenhardt, K. M., & Zbaracki, M. J. (1992). Fundamental Themes in Strategy Process Research. *Strategic Management Journal*, 17-37. <https://doi.org/10.1002/smj.4250130904>
- Dale, S. (2015). Heuristics and biases: The science of decision-making. *Business Information Review*, 93-99.
DOI:10.1177/0266382115592536
- Hayes, A. (2022). Retrieved from Investopedia: <https://www.investopedia.com/articles/investing/022015/how-cognitive-bias-affects-your-business.asp>
- Michalos, A. (2014). Economic Rationality Assumption. In P. DiRita, *Encyclopedia of Quality of Life and Well-Being Research* (pp. 1803-1806). Dordrecht: Springer. https://doi.org/10.1007/978-94-007-0753-5_822
- Burmeister, K., & Schade, C. (2007). Are entrepreneurs' decisions more biased? An experimental investigation of the susceptibility to status quo bias. *Journal of Business venturing*, 340-362.
DOI:10.1016/j.jbusvent.2006.04.002
- Thaler, R. (1980). Toward a positive theory of consumer choice. *Journal of Economic Behavior & Organization*, 39-60. [https://doi.org/10.1016/0167-2681\(80\)90051-7](https://doi.org/10.1016/0167-2681(80)90051-7)
- Tveit, K. (2022). Bigtincan. Retrieved August 31, 2022, from <https://www.bigtincan.com/resources/overcoming-status-quo-bias-in-sales-enablement/>
- Laibson, D. (1997). GOLDEN EGGS AND HYPERBOLIC DISCOUNTING. *Quarterly Journal of Economics*, 443-477. <https://doi.org/10.1162/003355397555253>
- Kramer, B., Swart, L., & Janssens, W. (2017). Be patient when measuring hyperbolic discounting: Stationarity, time consistency and time invariance in a field experiment. *Journal Of Development Economics*, 77-90.
<https://doi.org/10.1016/j.jdeveco.2016.12.011>
- Loewenstein, G., & Thaler, R. (1989). Anomalies: Intertemporal Choice. *The Journal of Economic Perspectives*, 181-193. <https://doi.org/10.1257/jep.3.4.181>
- Chen, J. (2022, August 17). Hindsight Bias. Retrieved from Investopedia:
<https://www.investopedia.com/terms/h/hindsight-bias.asp#:~:text=Hindsight%20bias%20is%20a%20psychological%20phenomenon%20in%20which%20one%20becomes,may%20lead%20to%20unnecessary%20risks.>
- Duignan, B. (2022, August 18). Dunning-kruger effect. Retrieved from Britannica:
<https://www.britannica.com/science/Dunning-Kruger-effect>
- Maloney, J. (2019, April 16). Dunning-Kruger Effect. Retrieved from intelligent speculation:
<https://www.intelligentspeculation.com/blog/the-dunning-kruger-effect>
- Dietrich, D., & Olson, M. (1993). A demonstration of hindsight bias using the Thomas confirmation vote. *Psychol Rep*, 377-378. <https://doi.org/10.2466/pr0.1993.72.2.377>
- Roese, N., & Vohs, K. (2012). Hindsight Bias. *Perspectives on Psychological Science*, 411-426.
<https://doi.org/10.1177/1745691612454303>
- Kahneman, D. (2011). *Thinking Fast and Slow*. Farrar, Straus and Giroux.
- Blanco, F. (2017). *Cognitive Bias*. Springer. https://doi.org/10.1007/978-3-319-47829-6_1244-1
- Staff, P. (2019, November 26). The Anchoring Effect and How it Can Impact Your Negotiation. Retrieved from Program on negotiation Harvard Law School: <https://www.pon.harvard.edu/daily/negotiation-skills-daily/the-drawbacks-of-goals/>
- Samuelson, W., & Zeckhauser, R. (1988). Status Quo Bias In Decision Making. *Journal of Risk and Uncertainty*, 7-59. <https://doi.org/10.1007/BF00055564>
- Kumar, S., Baker, K., & Singh, P. (2018). Behavioural biases among SME owners. *International Journal of Management and practice*, 259-283. <https://doi.org/10.1504/IJMP.2018.092867>