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Critical Analysis of Behavioural Economic Theories

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Abstract:

This research work examines the economic implications of human psychology based on a large-scale questionnaire based survey effort on diverse aspects of economic decision making amongst 313 college students in India. While the findings illustrate consistency in most of the popular theories of behavioural economics (e.g., Prospect Theory, Labour Model, Cognitive biases) it also finds certain inconsistency in the others like Apophenia, Time discount and present bias - the key theories in Behavioural Economics today. This study further tries to explain the results and the scope of further evolution in the theories. The focus is on experimental findings rather than psychological theory, surprising conclusion rather than intuitions, and descriptive prose rather than mathematics.

1. Introduction

Why did the brain evolved to make the choices that it does? Asking this question transforms the way we think about human decisions. Latest scientific researches reveal that our decision making, rather than being either rational or irrational, is characterized by deep rationality. Our choices today reflect a deep-seated evolutionary sagacity, evolved by our previous generations' successes and failures. Economists and psychologists often assume that humans aim to achieve a single broad goal: to feel happy or to maximize benefits. In reality, all human beings pursue very different evolutionary goals in life. These may include goals like finding a mate, protecting themselves against danger, and attaining status. These proves as an important distinction. People will have very different biases and make very different choices depending upon the current evolutionary goal or purpose in the mind.

People make decisions about many things. They make political decisions, romantic decisions, career decisions, financial decisions, personal decisions, etc. Some choices may be simple and straight-forward, while others may be complex and require a deep multi-step approach before coming a conclusion. The present paper will address decision making, factors influencing them, several heuristics commonly researched and utilized in the process of decision making. Further, the paper will explore what latest trends are being observed in relation to validity of existing theories. Finally, implications for future research and practical application of teaching about these biases involved in economic decision making in the college students.

Few research works show that we don't actually process information in such a rational way. Generally human mind can think in 5-9 different directions at a time, thus we should be able to prioritize things so that we can perform in a much better way. This is the reason why great people like Steve Jobs wear same clothes every time. By just eliminating having to think on options from a less important field, they can focus on what's more important for them. Another example of irrationality was presented by Kahneman and Tversky in their prospect theory, people value gains and losses contrarily, and will generally base their decision on perceived gains rather than perceived losses. Thus, if a person has to choose between two equal choices, one expressed in terms of losses and the other in gains, people would choose the latter - even when they achieve the same economic end result.

The distinctive predictions of prospect theory follow from the value function curve as shown in Figure 1.

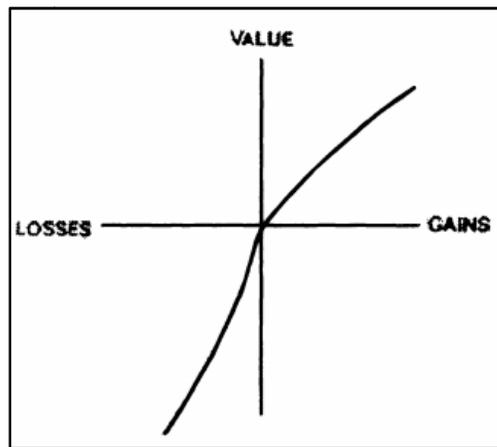


Figure 1

The value function is defined on gains and losses and is characterized by three features:

- (1) risk aversion is favoured by its concave shape in gain domain;
- (2) risk seeking is favoured by its concave shape in loss domain;
- (3) As loss-averse is steeper for losses than for gains, the functions show a sharp twist at the reference point

2. Objectives of the Study

To examine the effects of human psychology on economic decision making.

1. To validate the existing theories on Behavioural economics via results of the conducted survey.
2. To study the relative importance of those theories among college students in India.
3. To suggest implications for future research and practical application of teaching decision making skills in the college students

3. Research Methodology

A review of the existing literature was done to select 7 most commonly observed behavioural economic (BE) theories. A questionnaire was prepared after compilation of 10 questions to test these theories. This questionnaire was then used to conduct an online survey on the Indian college students between 25th July, 2016 and 2nd August, 2016. Further analysis was made on the relative influence of various factors on economic decision-making based on the 313 responses received.

3.1. Scrutiny

3.1.1. Prospect Theory

Economic decisions made by us may not always be rational and optimised. Evidences show that people have a greater tendency to dislike a loss than like an equivalent gain. This theory was initially observed and studied by Amos Tversky and Daniel Kahneman (1979).

➤ Survey Results

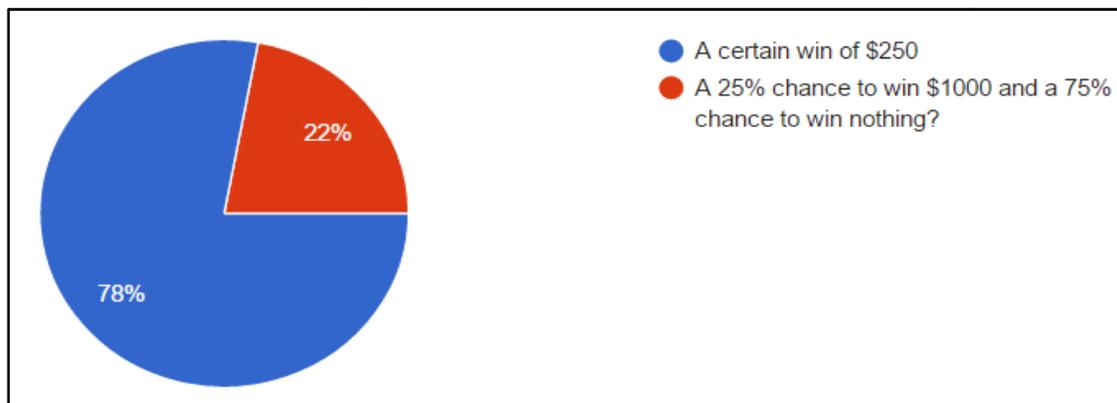


Figure 2

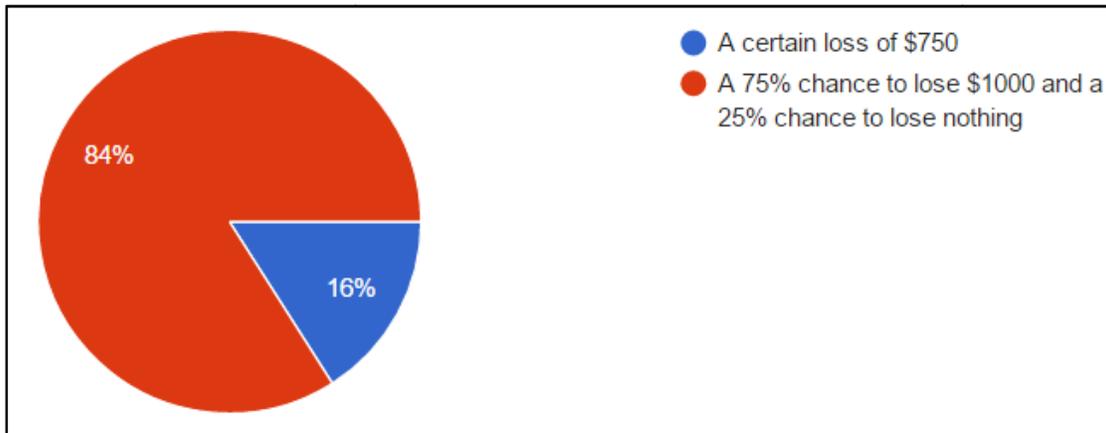


Figure 3

While 78% people chose option 1 in the first question, 84% of them opted for 2nd choice in question two. The survey conducted shows a clear evidence of prospect theory in application. People choose a riskless win of a smaller amount over a riskier bigger one. On the other hand, in case of a loss, they prefer avoiding one as far as possible and hence fall for choosing the riskier option. Many people fail to observe this psychological influence in their economic decisions. Thus, learning more about it right at the teenage will prove to be extremely beneficial.

Another question was used to test the prospects theory.

Question: Consider the following situation: Person A is waiting in line to see a movie. When he gets to the ticket window, he is told that he is the millionth customer and wins \$100. Person B is waiting in line at a different theatre. The man in front of him gets to the ticket window and is told he's the millionth customer and wins \$1,000. Person B receives \$150 for being the person right after the millionth customer.

Which person would you rather be?

➤ Survey Results

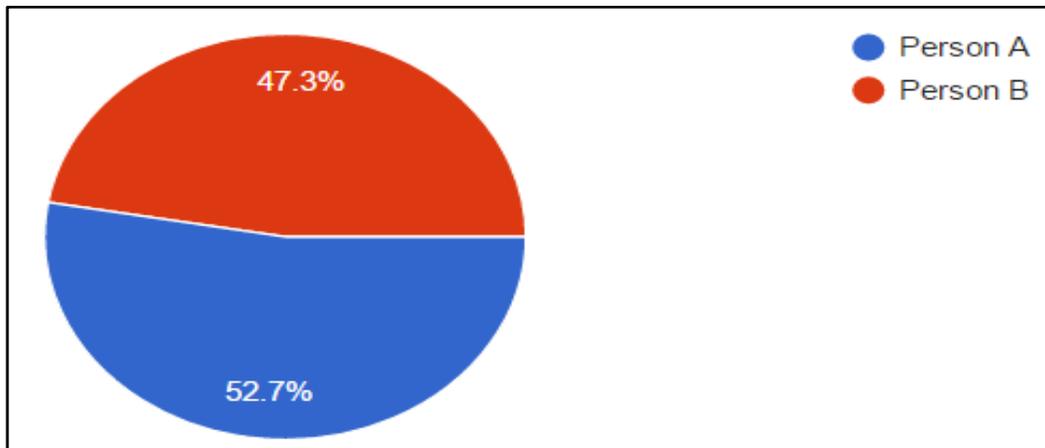


Figure 4

52.7% people chose to be the only person in the queue to win \$100 rather than winning a larger amount of \$150 but having to know that he/she just missed winning another \$850. This type of *loss aversion* dominates the human decisions in a lot of scenario. A person will feel more satisfied and happy knowing he won rather than facing the fact that he could have won more. However, the results are not very clear. Nearly half the people (47.3%) thought rationally and chose a bigger amount. Therefore, people are becoming more rational in the economic decisions than expected. This helps in realising that the theories need a consistent check.

3.1.2. Time Discounting and Present Bias

The theory says that human minds tend to weigh more importance on present events than the future one. The studies by Frederick, Loewenstein and O'Donoghue (2002) show evidences of such temporal dimensions that result in biases while making economic decisions.

➤ Survey Results

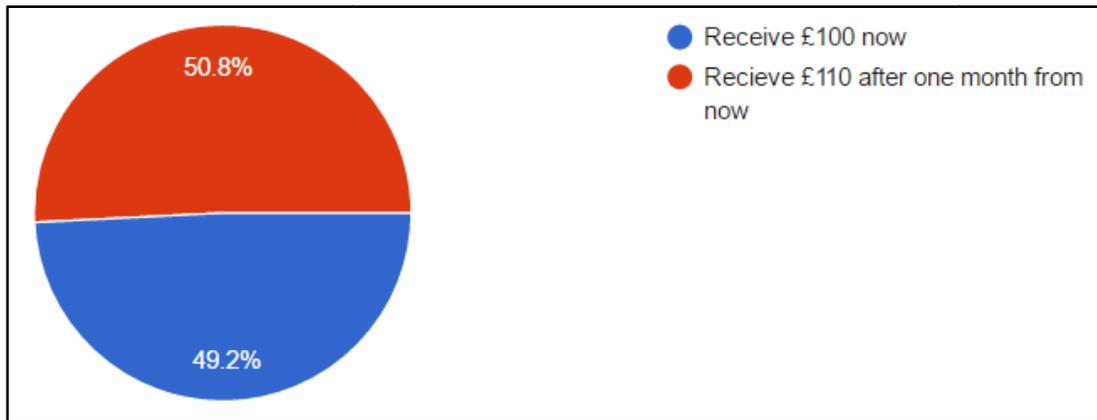


Figure 5

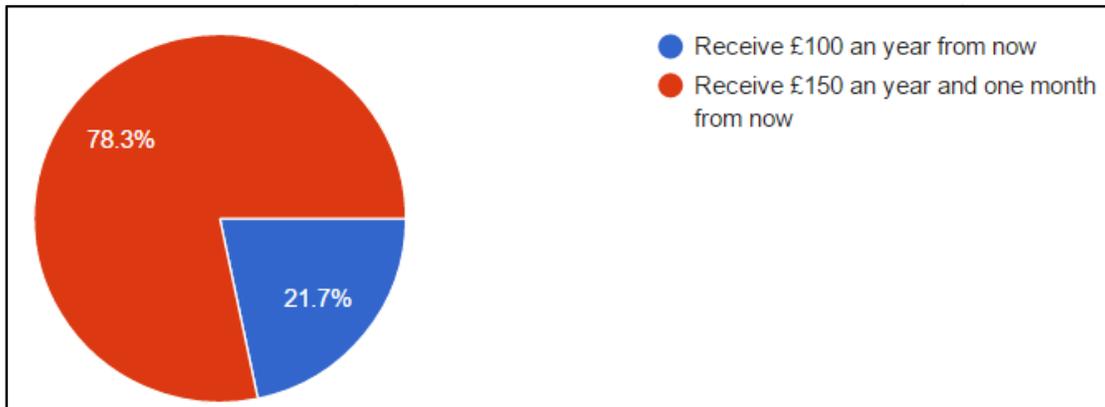


Figure 6

These results completely contradict the notions of the theory. While more people were expected to choose to receive £100 now in the first question, the results show only 49.2% falling for it. However it can be seen that there is some influence on temporal dimensions on the economic decisions of the students as a much larger percentage (78.3%) of them chose to receive £150 a year and one month from now. This difference (78.3-49.2%) does show some evidence of this theory. However, it is evident that there is a scope to further analyse this theory.

3.1.3. Relationship Conflicts (Compromise Vs Reactions)

Relationships between people may vary a lot across the globe. Some relationships may last for few months, some for years while some others for decades. So what can we do to make a relationship last longer? Human beings need to feel love and connection with others. They have been making compromises with their partners to be with them forever for ages. There is a general notion that not compromising and reacting on our mate will result in unwanted fights and might result in a break-up. This is just a fear in our mind which is doing no good.

When asked people that how do they expect relationships to last longer majority of them chose compromising over reacting as shown below:

➤ Survey Results

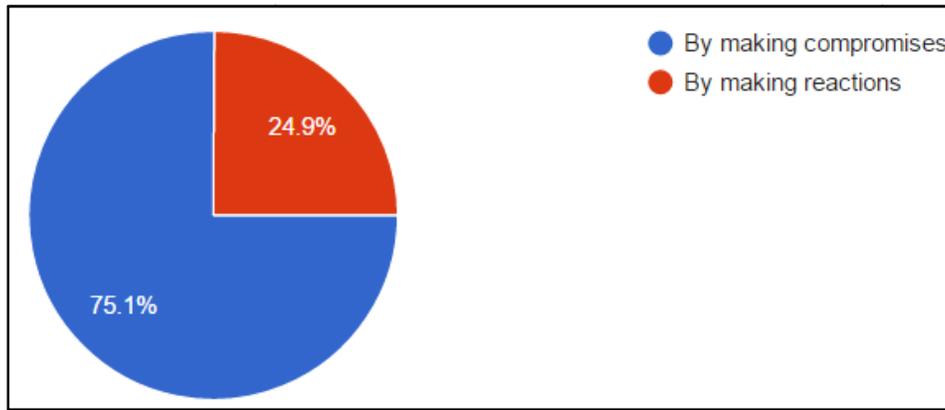


Figure 7

But past studies on married couples show that a marriage lasts longer if both are reacting on each other’s wrongdoing rather than compromising with them.

3.1.4. Pattern Recognition (Apophenia)

There is general human tendency to see patterns around them in their day to day life be it while watching beautiful clouds, looking at their lottery ticket or in their office while analysing statistical data even if there are no patterns existing in them. Such tendency to recognising false patterns is known as apophenia. While it’s tempting to view apophenia as a defect in our cognitive processing capacities, it might be useful for us to view this tendency as being cynical, even interesting aspect of human nature. Magic shows are often enjoyable precisely because we know that we are being tricked. If we embraced our vulnerability to cognitive errors, we would not be so easily caught off guard.

To test the same, we made a set of random real numbers 1,3,7, 10. And asked them if they could see any pattern in the following number. The result obtained is shown below:

Question: Can you see a pattern in these numbers: 1,3,7,10,.....?

➤ Survey Results

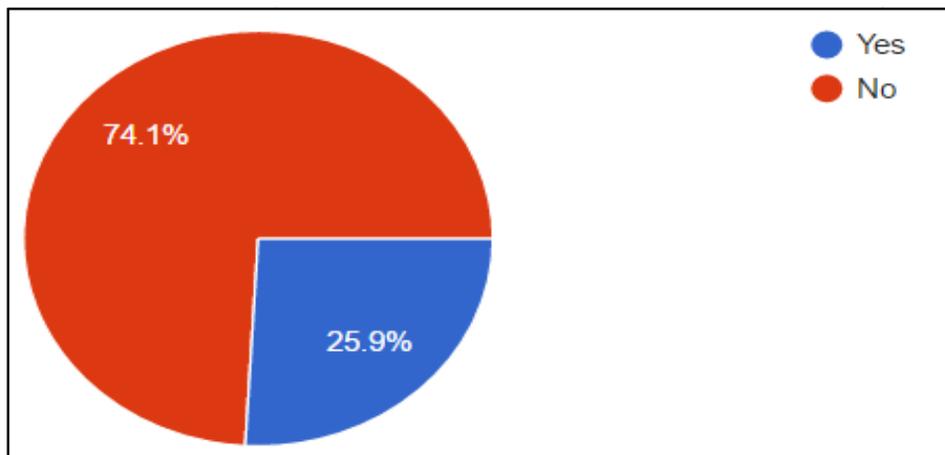


Figure 8

We can see that only 25.9% people show traces of apophenia which proves that human mind is evolving and large changes can be seen between the current results and the results that were expected from the past inference which opens further scope of research for psychologists and neurologists.

3.1.5. Risk Aversion

Risk Aversion is the tendency of human beings to stay safe and avoid risky investments. Therefore, if there are two investments that are expected to offer the same returns but have different risks, then the investors will tend to choose the one with the lowest associated risk factor. If investors are risk averse, then higher-risk investments must offer them higher returns. Otherwise, they will not be competitive with the less risky investments and will never attract a person.

To measure the current trend of risk aversion among upcoming generation, we asked people about their preference while investing whether in high risk high return funds or in low risk low return funds and majority of them opted for high risk high return investment as shown below:

➤ Survey Results

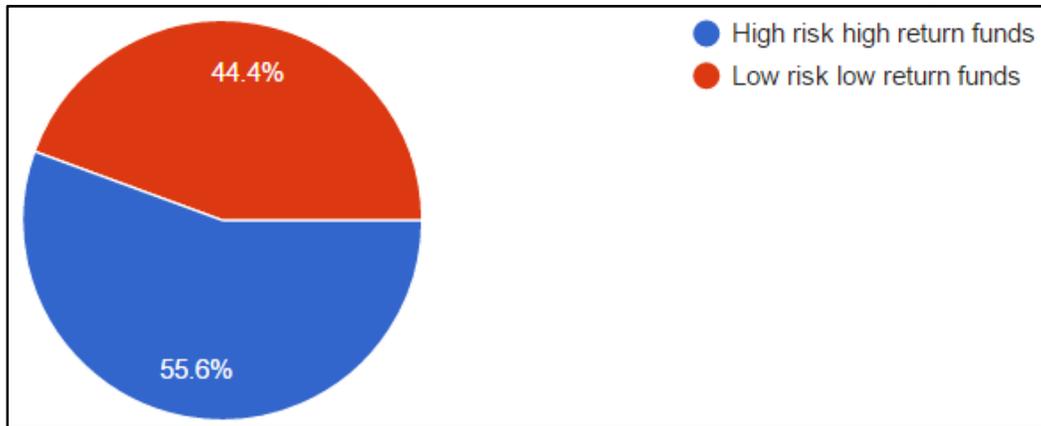


Figure 9

Thus we are observing some rationality in the economic decision making. The fear of a big loss is not preventing people from investing in more profitable option. However, economists earlier expected that majority will choose low risk low return option over going for larger risk. This change in human trait has again opened a large field of research for economists.

3.1.6. Labour Model

Let's recall Adam Smith & Carl Marx. There were huge differences between the two. Adam Smith had a notion to increase the efficiency in the workplace. He claimed that suppose if we have to make a pin & a single person undertakes all the procedure then the efficiency is very low, however if you get 12 different people to do their part then efficiency increases by many folds. Carl Marx on the other hand claimed that to get efficient labour its important how connected people feel while working which can be achieved by letting them build the entire pin themselves.

Adam Smith was very correct with his theory pre industrial revolution but now we are living in so called knowledge economy and people are more concerned on learning. The experiment conducted on about 313 college students reveals the same.

➤ Survey Results

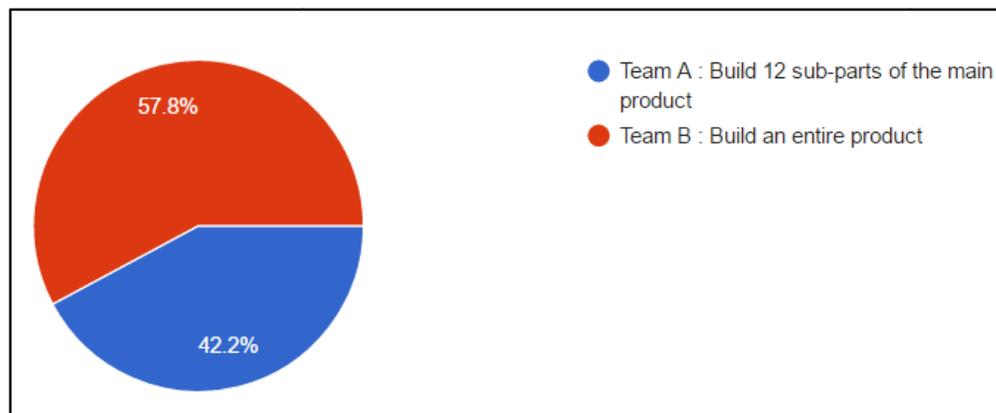


Figure 10

Majority of the people would like to work by building the entire product rather than just individual sub-parts. This is giving them more motivation to work as they feel connected proving that present scenario follows Carl Marx's theory and thus industries should consider some changes in their working environment to increase the efficiency of labour force.

3.1.7. Cognitive Biases

Human beings often get distracted from their day to day activities. They often are less effective in their work as their mind might be thinking something else for example one might be thinking about the dress she is going to wear tonight for the party. Due to this one is unable to focus his/her mind completely on their work.

We conducted experiment asking people about how many dresses they would buy for 6 parties in 6 consecutive days given the fact that they have enough money to buy 1,3 or 6 dresses. And majority of them answered 3 and very few of them chose 1 as shown below:

➤ Survey Results:

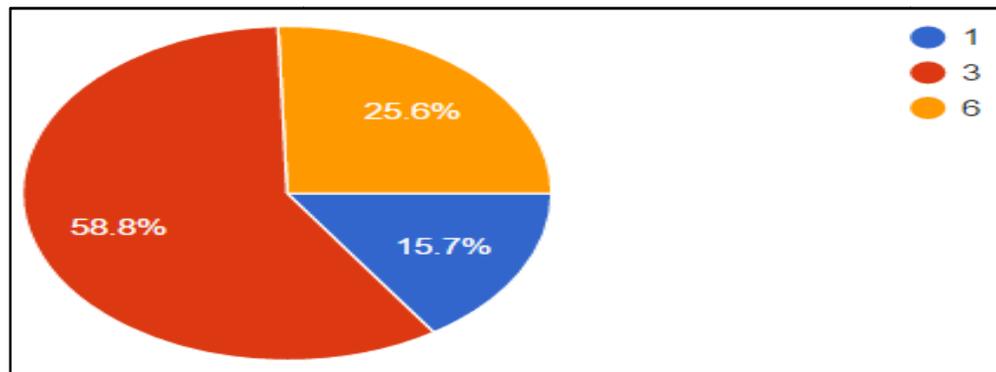


Figure 11

Now problem here is that if one buys more than 1 dress than she might be thinking of which dress to wear when. This affects the functioning of our mind and keeps it distracted. Now suppose if we only have 1 dress than we would not be thinking about the same as we have no choice and thus our brain will be focused on our daily work. Thus it is important for a person to choose his steps wisely in day to day activities so that he/she can concentrate more for their growth.

3.2. Conclusion

This study on the 7 selected theories through the survey on 313 college students in India successfully finds evidence of existing biases and irrationality in economic decision making. These biases lead to perceptual distortion and inaccurate decisions that one is not adequately aware of.

It has also been found that the prospect theory, cognitive biases, apophenia and the risk aversion theories of Behavioural Economics apply to the college students only to a certain arguable extent and requires further research and analysis. The study also shows that with evolution, the extend of rationality in humans is increasing and it is suggested that a further awareness of the existence of these biases right at studenthood would further increase the levels of rationality leading to more accurate and optimised economic decisions in humans. The evidence for this is observed from the survey results on pattern recognition where it was expected that students will fall for the trick and find a pattern while they actually did not. Similarly making them realise that cognitive biases will affect their everyday performance may in fact lead to increased professional efficiency levels.

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