Framing Fiitjee

A Study on Framing in the Context of Indian Coaching Institute Fees

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Abstract

Human choices are remarkably susceptible to the manner in which options are presented. This so-called "framing effect", introduced by Kahneman and Tversky, has been the subject of numerous Behavioral Economics research experiments. In the current study, we study the Framing Effect in a uniquely Indian context, that of coaching classes fee models. We pose the 'gain' and 'loss' frames as 'scholarships' and 'fee payments' respectively via an online survey, and analyse how this formulation affects decision-making among parents of current/former coaching-class students. Furthermore, we investigate how other factors at play in this particular dynamic such as retrospective clarity, illusory superiority and the net loss factor affect overall decision-making trends.

Keywords: *Behavioral Economics, Framing Effect, Financial Decisions*

1. Introduction

The framing effect, as explained by D. Kahneman and A. Tversky [1], is a cognitive bias where the game theory principle of invariance is not obeyed. Invariance maintains that a rational agent will make the same choice when presented with the same options regardless of how these options are presented.

The framing effect predicts that between two objectively identical options, people will choose differently based on whether these options are presented with positive or negative connotations. It says that people tend to be more risk averse when presented with the positive frame and risk seeking in a negative frame. The semantics of the options presented are taken into account by individuals making decisions.

In the current study, we have applied framing to the structuring of coaching class fees. Coaching classes in India are notorious for having convoluted fee structures, and we investigate how framing these fee options in positive and negative frames would affect the decisions made by parents enrolling their wards in these institutions. The aim of our study is to identify the framing effect at work in a real world choice, and highlight the importance of being more sensitive to its presence in such scenarios.

2. Related Works

The framing effect, since it was first introduced, as been extensively studied and evaluated under different situations and contexts. Therefore, an overview of how the study of this cognitive bias has evolved over the years is important to understanding the motivation behind the current study.

2.1. 1981: Kahneman-Tversky's Landmark Paper

The paper 'The Framing of Decisions and the Psychology of Choice' [1] introduces the framing effect for the first time. The participants of the study were asked to choose between two options for treatment for 600 people afflicted with a fatal disease. 72 percent of participants chose the sure option in the gain frame, while only 22 percent chose the same option in the loss frame. This paper established that differing phrasing of the same information significantly influenced decision making.

2.2. Further Developments Over the Years

Several studies inspected various aspects involved in framing in greater detail. For instance, Druckman et al [2] experimented with offering various options within the context of just one of the frames. Another 2001 paper [3] by the same group explored how framing effects may be reduced or overcome by means of advice / recommendations by experts. Further explorations have been conducted which seek to evaluate the age-wise susceptibility to the framing effect [4] and language-based variations. [5]

There also exist studies examining framing in the context of 'institutional payments'/fees in general. Zamir et al, 2015 [6] examines the role of framing in skewing loss aversion in the context of legal contingent-fees. Yaniv, 2010 [7] mainly explores the influence of framing on a group versus on individuals, but one of the experiments performed herein deals with a hypothetical university fee hike, and whether the burden should be borne evenly or using a lottery based system where a certain section of the student body bears extra fees, with the hike being waived for others.

2.3. Mid 2000s: The Neurological Link

Schoembaum et al's 2005 paper [8] establishes a link between encoding the predicted outcome / acquired value and corresponding activations in regions of the brain, specifically, the amygdala. In 2005 [9], the first study dealing specifically with the framing effect and related brain activity was conducted.

2.4. 2005: Martino et al. - 'Frames, Biases, and Rational Decision-Making in the Human Brain'

The main reference paper [10] that inspired the current study links the framing effect with amygdala activity, suggesting a key role for an emotional system in mediating decision biases. It also inspects how orbital and medial prefrontal cortex activity predicts reduced susceptibility to the framing effect. Herein, participants were presented with a large number of trials that involved framing gambling questions in gain/loss frames, while under an fMRI scan.

Specifically, the fact that pie charts were used in this experiment inspired the general outlook of the current study. Pie charts are merely a rough graphical indication of the likelihoods of outcomes in gambling, instead of a definitive numerical statistic serving as the definitive likelihood. This 'rough indication of likelihoods' is what inspired us to base our gambling choice on a statistically unlikely outcome, rather than presenting explicit statistical chances. It is based on this idea that we define the scope of the current study in the uniquely Indian context of coaching class fees.

3. Methodology

3.1. Scope

As stated above, our main paper [10] of reference sought to discover a neurological basis for the framing effect. Therefore, the researchers posed the question to the subjects while they were in an fMRI to study their brain activity and relate it to their choice. In our study, due to inspection of the neurological aspect being impractical, we have instead focused on modifying the question in the context of coaching classes' fees, and aimed to confirm the observance of the framing effect. Additionally, we analyse our results and present additional factors that are at play in this particular context, and how they impact susceptibility to framing.

3.2. Demographics

The demographic is the parents of students who are currently attending/have previously attended coaching classes for national level competitive college entrance exams such as the IIT-JEE and NEET-UG. Naturally, due to retrospective clarity playing a major role in determining what decisions parents may take, we divide our participants into two categories:

- Parents of people who are currently in coaching classes.
- Parents of people who have finished their coaching programmes and are now enrolled in colleges.

3.3. Experiment Design

The experiment was conducted by means of an online survey. The link to the survey was shared on social media (convenience sampling), and eligible individuals were thus reached out to from within our respective social circles.

The experiment follows a between-subjects design, and the choices for fee payment are presented to the subjects in either the Gain (Scholarship) or Loss (Payment) Frame. What frame the participants are presented with is determined randomly, based on the last digit of their phone numbers. In practical terms, this allows for all four sub-categories (current/retrospective, and gain/loss frame) within the survey to be accessed via one single link.

Additionally,

- The survey takes around one minute to fill, thus eliminating any scope for fatigue affecting the results.
- Participants in the retrospective category were optionally asked to provide the name of the institutions/colleges their wards were admitted to after attempting their respective entrance tests.

3.3.1. The Question

After entering the preliminary details (name(optional), last digit of phone number, the current/retrospective choice, and college name (in the retrospective category only, also optional)), the participants are presented with a single question representing a binary decision, just as in out reference paper.

> You have enrolled your ward in a great coaching institute for 11th and 12th grade, congratulations! The default fee for the entire programme is Rs 6 Lakh. Now, because your ward has performed well in the entrance test, the institute offers you two options. What do you choose?

As is apparent, the overall structure of the question is broadly similar to the framing of fee hikes in Yaniv, 2010 [7]. One significant change, however, is that the 'gamble' here is not based on a pure lottery, but rather on the student's academic performance.

3.3.2. The Choices

As mentioned above, the subject is randomly assigned either the Scholarship, i.e. Gain frame or the Payment, i.e. Loss frame based on whether their phone number ends in an odd or even number.

Refer to Table 1 for the exact choices that participants were presented with in these frames.

	Choice A	**Choice B**
Scholarship Frame	Your ward is given a sure scholarship of **Rs. 2 Lakh** on the programme, no questions asked.	In one year's time (at the end of 11th grade), if your ward is in the **Top 25%** of their batch in the institute, they will be given a **100% scholarship, i.e. the entire programme fee for both years.** Otherwise, there will be **no scholarship awarded** at all on the default fee.
Payment Frame	Pay **Rs. 4 Lakh** for the programme immediately.	In one year's time (at the end of 11th grade), if your ward is in the Top 25% of their batch in the institute, then you **need not pay any fees at all (you pay Rs. 0 for both years).** Otherwise, you must make the **full payment of fees.**

Table 1. The Choices

4. Hypothesis

Drawing from the original study, we hypothesise that subjects will likely choose the sure option in the scholarship frame, and the gamble option in the payment frame.

However, looking at the nature of our overall formulation, we do acknowledge some unexpected additional factors that may skew our results from the expected outcome. Some of these additional factors may be:

- **The Illusory Superiority Effect**
  Also known as the 'above average' effect, the Illusory Superiority effect is a cognitive bias wherein individuals tend to overestimate their own abilities in relation to others. As Zuckerman et al (2001) cites, an internal survey at Stanford discovered that 87 percent of its MBA students tend to rate themselves as above average performers in their classes. Anecdotally, we may observe this effect in the Indian settings as the *'mera laadla effect'*.
  Moreover, the fact that our survey question sets the premise of good performance in the entrance as the very basis for the discounted fee offer may also prime participants into reinforcing this bias.

- **The Net Loss Factor**
  One area where the current paper differs from our main reference paper is the fact that while the former frames scenarios post granting an initial endowment, we operate within the premise of a net loss. This is unavoidable due to the 'fees' formulation.
  Indeed, as Wardley et al (2021) [12] finds, there are large differences in perception between gaining and losing nothing. This may sway the results towards an overall risk-seeking tendency, especially compared to our reference paper.

- **Retrospective Clarity**
  Naturally, if one's ward obtains a spot in a college that warrants a consistent top-quartile academic performance, one may tend to take the gamble in any case, regardless of the framing. This retrospective clarity is one factor that may skew our results in unexpected ways. The purpose of making the parents specify whether they belong to the current/retrospective categories is so that we may deal with this factor during our analysis.

5. Results and Analysis

Total N=77	Retrospective, N = 48		Current, N = 29	
	Sure option (Choice A)	Gamble (Choice B)	Sure option (Choice A)	Gamble (Choice B)
Scholarship Frame = 39	10	14	8	7
Payment Frame = 38	6	18	4	10

5.1. Overall Survey Results

Our overall findings do partially align with the hypothesis.
Significantly more people end up gambling in the payment frame (73.7% of participants) than in the scholarship frame (53.8% of participants. However, quite strikingly, the majority decision in both frames seems to be to gamble. This might have to do with the aforementioned 'additional factors at play':

- The Illusory Superiority effect might skew the perception of the prospective academic performance of one's ward.
- The premise of the student having performed well in the entrance test may have had a priming effect in reinforcing the above bias.
- The fact that the formulation of the problem is in terms of a net loss might have skewed overall results more towards favouring the gamble overall.

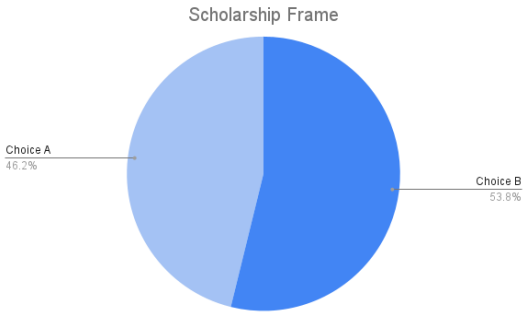

Figure 1. Scholarship Frame

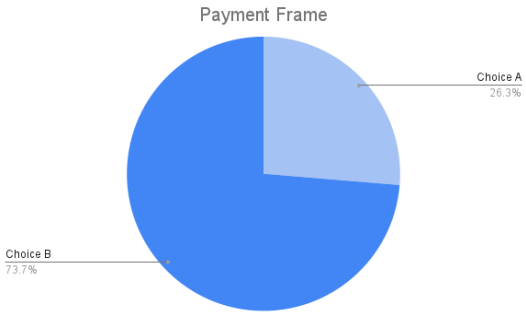

Figure 2. Payment Frame

5.2. The Retrospective Factor

In the scholarship frame, 53.3% of current participants chose the sure option, as opposed to 41.7% of retrospective participants. Curiously, this is the only pie chart in the entire study where the sure option has the overall majority.

In contrast, surprisingly, the effect of the 'retrospective clarity' factor has not been very significant in terms of affecting the participants' decisions in the payment frame, with 71.4% of current participants and 75% of retrospective ones choosing the gamble. Yet, the small statistical difference still agrees with our hypothesis.

5.3. The II(I)T Bias

A common subject of discussion in coaching classes, and the competitive exam culture at large, seems to be getting into the so-called 'Tier-1' colleges. College tiers are an informal categorisation

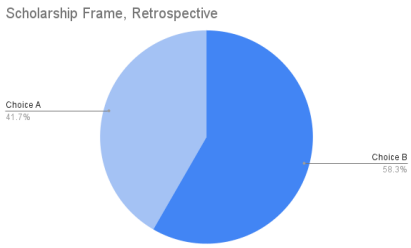

Figure 3. Scholarship Frame, Retrospective

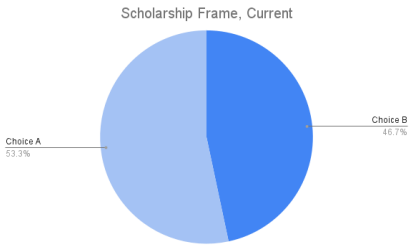

Figure 4. Scholarship Frame, Current

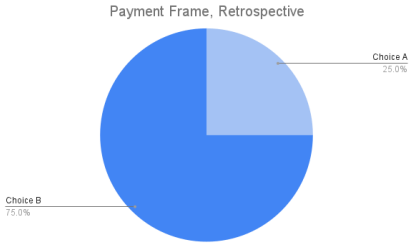

Figure 5. Payment Frame, Retrospective

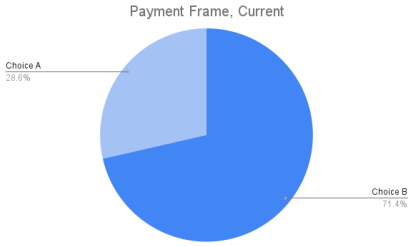

Figure 6. Payment Frame, Current

that is shaped largely by the institution's general reputation. In order to investigate whether the parents of students currently enrolled in such reputable institutions would make decisions differently than those whose wards are not, we decide to analyse these responses comparatively.

All 29 participants in the retrospective category have also provided the names of the colleges their wards are now enrolled in. We (admittedly arbitrarily) divide these, considering the following as 'Tier 1' institutions:

- BITS Pilani
- IIIT Hyderabad
- Leeds University
- IIT Kharagpur

In the scholarship frame, 39.1% of Tier-1 parents choose the sure option, while 44.4% of non-Tier-1 parents choose this option. In the payment frame, 72.4% of Tier-1 parents choose the gamble option, as opposed to 74.3% of non-Tier-1 parents. Overall, this indicates that the behaviour of non-Tier-1 parents is more in line with what is expected from the framing effect, although the differences are pretty insignificant in terms of statistics.

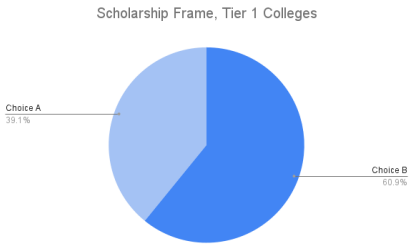

Figure 7. Scholarship Frame, Tier 1

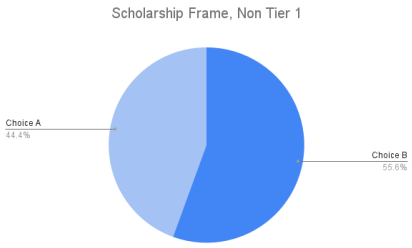

Figure 8. Scholarship Frame, Non Tier 1

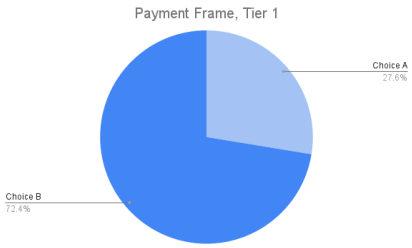

Figure 9. Payment Frame, Tier 1

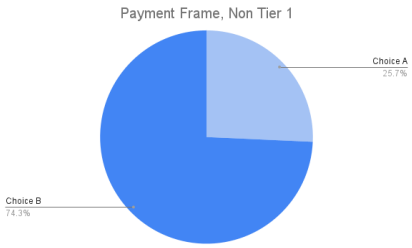

Figure 10. Payment Frame, Non Tier 1

6. Conclusion

6.1. Summary

In conclusion, we have managed to identify the framing effect at work in a real world choice, that of choosing the fee structure when enrolling one's ward in coaching classes. Furthermore, we have highlighted the differences between what we observed in our survey, and what the framing effect (as demonstrated in our main reference paper) would otherwise warrant. We have investigated other factors at play in this scenario, and attempted to explain how these might play into the dynamics of our experimental formulation and help explain these difference.

This has great implications in terms of being aware of how fees are structured, especially in institutions where a having a more complicated fee structure to deceive parents is effectively incentivised. Moreover, by conducting a real world study on the framing effect, we have once again shown its definite existence in the context of the decisions we make regularly.

6.2. Limitations

We have identified the following limitations in our study:

- The number of participants we managed to get responses from is, objectively, not enough to be representative of society at large.
- Moreover, a lot of retrospective responses were from parents of students currently enrolled at IIIT-Hyderabad. The 'non-Tier-1' represenatation has admittedly been less than what it should have been in order for a completely objective analysis.
- There are also fewer responses from parents of current students, hence not giving us and equal split across the retrospective and current parent choices.

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