NSE CENTRE FOR BEHAVIORAL SCIENCE IN FINANCE, ECONOMICS AND MARKETING

Centre for Behavioral Science

ANNUAL REPORT

2020-21

1ST Annual Report

April 2020 – April 2021

NSE CENTRE FOR BEHAVIORAL SCIENCE

INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD
New Campus, Vastrapur, Ahmedabad 380015, Gujarat, India

Telephone: +91 79 7152-4896 | **Email:** asahay@iima.ac.in
Website: https://www.iima.ac.in/web/areas-and-centres/research-centres/nse-centre-for-behavioral-science-in-finance-economics-and-marketing/
Twitter: https://twitter.com/NSE_CBS

NSE CBS Executive Committee

Prof. Arvind Sahay
Chairperson

Prof. Aditya Moses

Prof. Pranav Singh

Prof. Subhadip Roy

Prof. Joshy Jacob

Prof. Viswanath Pingali

Prof. Jeevant Rampal

Message from the Chairperson

Professor Arvind Sahay
Chairperson,
NSE Centre for Behavioral Science at IIMA

Professor of Marketing and International Business, International Economics. IIMA Prof. MN Vora Chair in Marketing and Entrepreneurship | Chair, Marketing Area | Chair, India Gold Policy Centre@ IIMA | Exec Ed Program Chair: 1. Pricing for Profit 2. Neuroscience in Marketing 3. Enhancing Sales Force Performance 4. Fintech

I am delighted to share NSE Centre for Behavioral Science in Finance, Economics and Marketing's first Annual Report for the year 2020-2021. The status of behavioral science in business research across the world is gaining huge attention in today's time and advancing with great speed. Being a premier institute in management, through the NSE Centre for Behavioral Science, IIMA aims to lead the way with applied research to improve management practices across sectors of finance, health, public policy, marketing, economics, organizational behaviors and human resource management as well as making pathbreaking contributions to academia in these areas. The centre would like to engage in rigorous but relevant research and will look to connect with interested researchers in academia and practitioners in industry.

In the past year, NSE Centre for Behavioral Science has built the foundations of the human capital and physical infrastructure that is needed for the establishment of a state-of-the-art behavioral research Centre at IIMA. As a practicing marketer and behavioral scientist, it is a matter of huge pride for me to be leading one of the best equipped and productive laboratories for behavioral research in the country which includes methodologies like EEG and multiple Eye trackers and behavioral software like E-prime to conduct sophisticated and multidisciplinary behavioral as well as neuroimaging research. An fMRI machine is also expected in the near future. We also now have research support in the form of a Research Fellow/Lab in Charge who has a Ph.D. in Cognitive Neuroscience and Research Associates with Masters in the field of Cognitive Science. Building on NSE's research initiative, the Centre aims to address issues directly faced by the Indian

markets in terms of financial challenges, market securities and regulations, product market relations, investor behavior and probable biases, risks and fears involved to launch novel modes of business development.

Behavioral Science as a concept dawns from the broad categories of 'neural' and 'social' sciences. At a neural level, behavioral science is perfect for studying informational processing of any stimuli in the environment which helps humans to engage in better decision making, judgement and perceptions crucial for one's survival. At a social level, it encapsulates the study of human interactions existing in social systems, that is, directly dealing with interactions occurring in dynamic communication networks. Combining the two, behavioral science is empirically able to investigate the decision making and communication strategies within and between individuals in a social setup. In business, it means actualizing a realistic understanding of human behavior through empirical studies to influence their behavior and aid in better decision-making process.

The significance of understanding human behavior lies in the basic fact that human beings are not always rational. Behavioral Science as such, acknowledges these realities of human attention and memory, and the use of heuristic, biases and mental shortcuts. From a business perspective, the approaches in behavioral science are based on various predictions about these potential biases that might affect a consumer's decision-making process. Our goal is to be able to develop deeper insights into the basic drivers of human behavior that translate into business decisions by customers, managers, policymakers and leaders. As such, the establishment of NSE Centre for Behavioral Science is a stepping stone for IIMA in the field of research in management sciences to study human behavior.

Reflecting on its aim, the Annual Conference on 'Behavioral Science in Management' (BSIM) in April 2021 was a unique event put forth by the Centre that combined inputs from industry and academia. The Conference was able to surface the need to materialize the in-depth knowledge and insights brought by the academicians into the innovative products, processes or services that exists in business to help achieve solutions to real problems. Spanning over a wide range of topics, the conference addressed recent trends in industry, identified common challenges and facilitated engaging discussions. Attended by scholars, researchers, graduate and post graduate students, faculties with expertise in management research and industry experts such as

heads, leaders, managers and key stakeholders in business, the conference gathered significant insights into the current trends in behavioral sciences of management. The section on the conference in this report will further provide the readers with a flavor of BSIM series that the Centre aims to expand on in future.

Interestingly, current issue of this annual report also contains a series of interviews that elaborate upon the applications of behavioral science from various perspectives in management sciences. IIMA faculty belonging to different areas of marketing, economics, strategy, finance and human resource management were interviewed and gave a detailed exposition of different dimensions of behavioral science that are embedded in these areas of research. The section aims to highlight the diversity ingrained with behavioral science applications and motivate readers to explore the same with the help of NSE Centre for Behavioral Science at IIMA.

Delineating upon ongoing projects, existing labs and workforce involved in the remaining chapters, the current issue of the annual report provides greater insights to the functioning of behavioral science research at NSE Centre for Behavioral Science at IIMA. I extend my sincere wishes to our readers and invite them to share in the journey with the NSE Centre to explore themes on behavioral science and its impact on business.

About NSE Centre for Behavioral Science

The NSE Centre for Behavioral Science was established at IIMA in March 2020 with a grant from the National Stock Exchange of India Ltd. The objective of the center is to work and build a niche platform for conducting and disseminating research grounded in neuroscientific and behavioral knowledge across the fields of management.

Equipped with EEG, eye tracking machines and Galvanic skin response systems, the laboratory is designed to explore the applicability of behavioral science theories in marketing, finance and economics. With the academic rigor and experimental based research, we aim to produce meaningful decision-making insights not only for industries but also to help shape better policies and improve services.

Existing Labs at NSE CBS

EEG Lab

The Centre is equipped with a 32-channel wireless EEG system from Brain Products. The LiveAmp amplifier of Brain Products system, is light and wearable and stores data internally. The wireless trigger set provides a fully mobile solution to send triggers and sets event markers which help during data analysis. As the system is wireless, it allows for more mobility and can be used to collect data across more realistic scenarios.

Previously limited to medical settings, neurophysiological methods have found popularity in academic and industry research. Research has seen a shift to look beyond explicitly stated choices to more implicit patterns of attention and decision making that individuals face these days. Findings from these studies are being used by many companies who are interested in understanding their consumers' perceptions and decision process when faced with choices. Electroencephalography (EEG) is one such approach by which one can monitor the electrical activity in the brain. It is a non- invasive methodology, where electrodes are placed on the scalp to record cortical activity with high temporal resolution. EEG has been used across the fields of Marketing to understand consumer behavior, in Finance to examine the differential effects of factors like risk and emotion while financial decision making, and in economics to experimentally examine concepts of behavioral economics.

Eye-tracking Lab

Source: www.tobiipro.com

The center is equipped with both screen-based and wearable eye trackers from Tobii Pro. The first set is the 'Tobii Pro Fusion', a *screen-based eye tracker* with sampling frequencies up to 250 Hz. The two custom cameras in the Tobii Pro Fusion help in binocular eye tracking of pupil and corneal reflections of the eyes, in different illumination modes. This technology helps capture accurate and robust data for the individual's eye gaze and position.

Source: www.tobiipro.com

The second set includes the latest Tobii Pro Glasses, *a wearable eye tracker* which aids in conducting research that is not confined to laboratories. It allows individual to interact naturally and move freely in real life settings. The glasses have four eye cameras, positioned optimally which help in wider field of view. The sampling rate for the wearable eye tracker is 50 or 100 Hz, with a single point calibration which helps in faster data collection. The data from both eye trackers can be swiftly and comprehensively analyzed using the Tobii Pro Lab.

Eye tracking data is insightful in understanding attention engagement of an individual in real time while one interacts with a stimulus. Results from the gaze plots and fixation durations can help assess the elements the audience engage with and the one they ignore. Recent research examines behavioral biases of investors and traders by tracking the eye gaze trajectory.

Additional equipments

The lab has four high end workstations each equipped with E-Prime 3.0 software aiding in psychophysical and behavioral experiments. The latest E-Prime software make it ideal for new learners as well as advanced users to collect behavioral responses like reaction times (RTs) and accuracy data with precise timings. Variety of stimuli, including text, image, videos and audio files can be presented in the experiment.

Additionally, the Centre has a multifunctional stimuli and response device Chronos. The device allows for accurate recording of data of key presses and releases. This combined with e-prime makes for a thorough data collection setup.

NSE CBS Ongoing Projects

1. Developing an empirical study on a Neural Behavioral Pricing Model (Prof. Arvind Sahay, Richa Nigam)

Non-Price attributes are equally crucial to purchase decisions as much as the price of a commodity in enhancing the perceived value and perceived quality of the products. The current study empirically tests the effect of modulations in IRPs and purchase decisions formed as a function of changes in expected future non priced attributes.

2. Consumer perceptions of different front-of-pack labels for Indian packaged food (Prof Arvind Sahay, Prof Ranjan Kumar Ghosh, Anushka Oza, Divya Reji)

The objective of this study is to understand which front-of-the-pack-labels (FOPL) are most suited for Indian consumers in helping to choose healthier packaged food products. The sustainability is indicated by the comprehensibility, credibility and likeability of the FOPL and its ability to influence purchase decisions. Globally, FOPLs have evolved as an important complement to the Nutrition Facts Table as the latter are difficult for consumers to interpret (Ahmed et al., 2020; Hodgkins et al., 2012). They contain numerous forms of information on nutrients that include mandatory and voluntary measures adding to the confusion of consumers. Moreover, while consumers have the ability to interpret simple information in differentiating between product characteristics, they find the tables difficult to use for health choice decisions. On the other hand, some studies have shown that FOPL helps guide healthier product choices (Watson et al., 2014). There are numerous studies that have analyzed the effectiveness of different FOPL formats in different countries that have implemented these systems either on a voluntary or mandatory basis. However, in developing countries, FOPLs are still not much in practice. In this context, the proposed study planned to test the efficacy of different types of FOPLs.

3. Creating online survey for risk profiling of inventors (Prof Arvind Sahay, Prof Joshy Jacob, Anushka Oza, Divya Reji)

Lately in the field of behavioral finance there has been a rising cognizance of how biases and heuristics affect decision making. Along with these cognitive factors, investment decision making is also heavily influenced by environmental and personal factors of the investors. Emotions, habits, risk taking ability and social influences have been observed to impact people's economic decisions. People's risk propensity is seen to vary across domains, i.e., people may display higher risk taking abilities in recreational and social domain, but exhibit risk averse behavior in the financial domain. In the present project we aim to profile investors based on their behavioral biases and risk propensity.

4. **Understanding Indian Millennial Investors Stock Preferences** (Prof Arvind Sahay, Anushka Oza, Divya Reji, Mayank Prakash)

Even though the financial year 2020-21 seemed to have locked everybody in their houses due to the Covid-19 pandemic, it witnessed an unusually high influx of young Indians who decided to step in and try their hand in the Indian stock market. The Indian economy observed a shift in the investment pattern, as more people decided to opt out of traditional financial avenues to switch to alternatives like the stock market. The outcome of this switch was seen in the data from the National Securities Depository Ltd (NSDL) and the Central Depository Services Ltd (CSDL) which reported a stunning boom of 14.2 million new Demat accounts opened in FY21 (Sultana and Ramarathinam, 2021). The present study is an exploratory study aimed to assess the choices made by Millennial investors in the Indian stock market.

5. **Nudge based intervention study promoting Covid-19 vaccine uptake** (Prof Arvind Sahay, Anushka Oza, Divya Reji)

In the midst of this global pandemic, the need of the hour is to ensure that the majority of the population (around 60-70%) takes up the coronavirus vaccines so that transmission rates decline and a possible herd immunity may develop. People need to be persuaded to get both doses of the vaccine and workplace or Institutional environments where both peer and authority figures strongly influence behavior, are perfect platforms to facilitate vaccine drives. We conducted a survey on 80 students at IIMA, using email nudges and checked for self-reported willingness of vaccine uptake. Through this study we aimed to assess the influence of subjective norms in an institutional setting on increasing the intention to get vaccinated.

6. **Household Investor Survey** (Prof Jeevant Rampal, Prof Joshy, Mayank Prakash, Abhishek Tripathy)

We intend to collect granular data on how Indian households take investment decisions. The survey will try to understand what drives the Indian household investor to invest in the way they choose to invest and what are the factors that influence the asset allocation for the Indian household investors. We will try to analyse if there is persistence of the household finance puzzles in Indian context which have been extensively talked about in the literature. We also intend to understand behavioural aspects of the decision making process of the Indian household. This would be one of a kind survey for Indian household investors.

7. **Paper about the strategic interaction between the government and various agents in developing a market infrastructure institution** (Prof Arvind Sahay, Mr Sudheesh Nambiath, Mayank Prakash)

This paper tries to analyse games of strategic complementarities using the Global Games literature for situations where the fundamental is endogenous and players

are heterogeneous. We intend to understand it as a single period game where a principal and continuum of heterogeneous players play the game. The fundamental evolves positively with the participation of more players. The principal has a role to persuade the players towards a socially optimal equilibrium. The decision of a player to play a particular strategy depends on the fundamentals and what other strategies of other players. Global Games literature has modelled the game in situations of bank run or regime change where the fundamental is the strength of the bank or regime given exogenously at the beginning of the game. The players get a noisy signal about the fundamental and other players' strategies and hence decide their strategy. In this paper we propose that the fundamental is endogenous. Suppose, the principal presents an idea which has a particular strength i.e initial fundamental value but it can only be successful if it is supported by enough players. So the fundamental strength of the idea is dependent on the number of players participating in support of the idea. The basic strength of the idea i.e fundamental will hence depend on the actual strength of the idea and the number of players supporting it. The players would have a situation of strategic complementarity. We intend to understand the equilibrium in such situations.

8. **Institutional Noise trading and its effect on volatility in the Stock Markets due to behavioral biases specifically Diagnostic Expectation** (Prof Joshy, Mayank Prakash)

There might be ample reason to believe that institutions might have some behavioural biases while trading especially when they are noise trading. We strive to study if in the event of a shock like the crash of March 2020, do these institutional investors relying on Diagnostic Expectations lead to excessive volatility. We would also like to understand if the results depend on whether the institutions are Domestic Institutional Investors or Foreign Institutional Investors. Further we also like to investigate if there is a difference in the results in developed and developing markets with a keen focus on India.

9. **Ethics at workplace** (Prof Arvind Sahay, Richa Nigam):

The project aims to explore modes from behavioral science that can be adopted to help a firm to assess the value of ethics among employees. These bear implications in hiring process and employee evaluation in critical times.

NSE CBS Executive Committee Project details

1. Opponent's foresight and optimal choices (Prof. Jeevant Rampal)

Using two experiments, this paper demonstrates that expert players of sequential-move games best respond to their opponents' backward-induction ability. In particular, I show that these experts take advantage of inexperienced opponents' weakness in backward induction. I find this when the expert is explicitly told that her opponent is inexperienced, but also when she infers the opponent's weakness from the opponent's preceding performance. I demonstrate that other-regarding preferences have no role in these findings. I find that a novel model of limited foresight and uncertainty about the opponent's foresight fits the data better than Level-k or Quantal Response models.

2. Task satisfaction and charitable giving (Abhishek Mundhra, Prof. Jeevant Rampal, Divyanshu Jan, and Praneel Jain)

Using online experiments, we study how charitable donations are causally affected by the nature of the task performed as part of one's job. We find that donations are significantly higher for participants who were randomly allocated to a task designed to be 'interesting' compared to those participants who were randomly allocated to a task designed to be 'tedious', even though both tasks yielded equal earnings. We also measure the causal impact of making the nature-of-task salient before donation decisions. We find that this salience has a differential impact on the 'interesting' and 'tedious' tasks; salience reduces donations for the interesting task but increases donations for the tedious task.

3. Information and behavior during COVID-19 (Prof. Ritwik Banerjee, Prof. Anujit Chakraborty, and Prof. Jeevant Rampal)

Using a randomized-control-trial design, we study: (a) the level of support for a lockdown in rural Telangana, India, in September 2020, and (b) the causal impact of increasing COVID-salience on the support for a lockdown. As our salience intervention, we use a short audio clip containing commonly available information about COVID-19. The two control groups have a placebo audio clip which makes Dengue salient and no audio-clip respectively. We find high support (45%) for lockdowns in control groups, and, that a simple COVID-salience intervention causally increases the willingness to continue lockdown by 25 percent and the reported appropriate number of days under lockdown by 33 percent. Assuming the second wave in India increased COVID-salience, our results suggest that there may be widespread support of a lockdown despite the economic consequences.

4. **Contests within and between groups** (Prof. Puja Bhattacharya and Prof. Jeevant Rampal)

This paper examines behavior (theoretically and experimentally) in a two-stage group contest where the first stage comprises of intra-group contests, followed by an inter-group contest in the second stage. Rewards accrue only to the members of the winning group in the inter-group contest, with the winners of the intra-group contest within that group receiving a greater reward. The model generates a discouragement effect, where losers from the first stage exert less effort in the second stage than winners. In contrast to previous frameworks of sequential contests, we show that a prior win may be disadvantageous, generating lower profits for first stage winners as compared to losers. This implies that incentives for participation in the first stage may not always be present. We also consider exogenous asymmetry between groups arising from a biased contest success function in the second stage. We show that although the asymmetry occurs in the second stage, the effect of the asymmetry plays out in the first stage, with the intra-group contest being more intense within the advantaged group. Experimental results find broad support for the qualitative predictions of the model. However, we find that relative overcontribution in the second stage by losers is higher than by winners of the first stage, implying that losers bear a higher burden of the group contribution than deemed strategic.

5. **Strategic incentive for giving may be counterproductive** (Prof. Jeevant Rampal)

In an experimental test of a modified dictator game, I find that incentivizing a dictator to give at least a small proportion of her endowment drives non-incentivized giving to zero. This reduces overall giving relative to the standard dictator game. Thus, introducing strategic incentives for giving can be counterproductive.

6. **Trust and Algorithmic Control** (Prof. Aditya C. Moses, Prof. Shaivi Mishra)

Algorithms may enable efficient, optimized, and data-driven decision-making, and in fact this vision is one of main drivers of increasing adoption of algorithms for managerial and organizational decisions. However, the fact that these decisions are made by algorithms, rather than by people, may influence perceptions of the decisions that are made, regardless of the qualities of the actual decision-outcomes (Sundar and Nass, 2001). Furthermore, employees who are subjected to algorithmic control may not be satisfied if they believe they have tacit knowledge which the algorithm does not possess. They may also not understand how the algorithm works. All these factors may lead to perception of reduced and agency and cause them to distrust the algorithm. Johannsen and Zak (2021) in multiple studies using neuroscience have shown that trust leads to better productivity of employees and enhances organizational performance. Therefore, we propose two research questions:

1) What is the impact of algorithmic control on Trust? What factors impact trust?
2) What can organizations do to enhance trust in algorithmic control?

7. Developing CAPE indicator for the Indian market (Prof Jacob Joshi)

It is important to assess the level of financial market valuation relative to fundamentals through suitable indicators. One of the widely employed indicators of market valuation is the cyclically adjusted PE ratio (CAPE). The research project intends to develop and maintain a frequently updated database of CAPE for the Indian market, as a barometer of market valuation. It is intended to provide guidance for financial market practitioners, including fund managers and traders to monitor the aggregate market valuation levels.

8. A Report on the Study of Capital Requirements of Market Intermediaries (Prof Joshy Jacob)

This paper aims to develop risk-based capital adequacy norms for the intermediaries that would provide reasonable comfort regarding loss-absorption capacity of the intermediaries and mitigate the risk of spillover of losses to non-defaulting clients.

Contents

CHAPTER 1
Recent Behavioral Research in Management

0.1 Marketing

Article: How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework

Over the past few years many high-end companies, like Unilever, Nike and Starbucks, are recognizing the need to incorporate the idea of sustainability into their identity (Hardcastle, 2013). Despite the natural incompatibility between the idea of marketing and sustainability, i.e., one of them aimed at promoting growth and endless needs and wishes of consumers, while the other highlights the finiteness of resources, the authors in the paper make a strong case for why these are intertwined. They also reinforce the importance of how marketers can influence the consumers towards sustainable consumption.

With the changing world, the success of a business is its ability to adapt to the demands of the society, which require an urgent initiative to be sustainable. These practices will increase their chances to thrive in the future (Banerjee, Iyer, and Kashyap, 2003). It helps firms to not only operate sustainably but also rework on their business model and reap greater rewards in the longer run (Kotler, Kartajaya and Setiawan, 2010). Sustainable consumption helps target the 'green consumers' and is an effective strategy to expand the market to new consumers. The authors, in the current paper, after comprehensively reviewing a set of 320 articles, develop a framework which aids the conceptualization of factors that affect sustainable consumer behavior change. This comprehensive framework can help marketers to bridge the attitude- behavior gap which is commonly seen in customers. The five factors that the authors discuss in the paper form the acronym SHIFT- **S**ocial influence, **H**abit formation, **I**ndividual self, **F**eelings and cognition, and **T**angibility.

The first factor is social influence, as individuals more often than not are greatly impacted by the choices, presence and behavior of others around them. Abrahamse and Steg (2013) indicate the social factors being the most influential in terms of sustainable behavior change in consumers. Social factors can also be divided into three facets: social norms (descriptive and injunctive norms), social identity and social desirability. The second component in the framework is Habit formation. Since the current common habits of people are unsustainable, habit change acts as a crucial factor in promoting sustainable behavior. Imposing penalties, disrupting the context, incentivizing change, and using prompts all work efficiently on different forms of behavior like waste disposal, energy conservation and conserving water. Implementing intentions, making choices easier by making the sustainable action as the default option, and providing feedback of how their current behavior is more sustainable than what they previously did, all act as effective behavior change strategies.

The third factor in the SHIFT framework is Individual self, which covers concepts of self-interest, self- consistency, self-concept, self-efficacy, and individual differences (such as demographics of consumer). Individuals who personally initiate commitments to sustainable behavior are more likely to sustain those acts. Findings from both economic as well as evolutionary theories suggest that leveraging sustainable behavior to have an appeal of self-interest and personal benefit would drive up environmentally conscious behavior. The fourth concept of the framework is Feelings and cognition. Negative emotions like fear, anticipated guilt and sadness are seen to be powerful influencers as they highlight the negative consequences of actions. Another measure would be to play on the positive emotions, such as joy and pride, that consumers can derive from sustainable behavior. The sense of pride often stems from the feeling of responsibility (Lerner and Keltner, 2000) which drives people to engage in pro-environmental actions. Subsequently, providing information in the labels of the products, framing information on appliances to aggregate greater impact of their choices, and offering solutions on how to act in the desired manner appeals to the cognitive aspect and helps engage individuals more. The last factor of the framework is Tangibility, where abstract, vague and seemingly distant ideas of sustainability are made present-focused and have more immediate consequences. Communicating concrete ideas are also helpful as they help promote sustainable options for consumers.

The authors at the end of their paper also highlighted a few challenges and offer suggestions by which marketers can help increase the likelihood of consumers engaging in sustainable behavior. Advertisements, slogans and brand identity which attach symbolic attributes to sustainable actions by linking it to status of people, promoting a greater sense of agency in them, and making the context of their choices public would make people more likely to engage in such behavior. Tesla's advertising is based heavily on linking sustainability and innovation to out-of-the-box thinking. Marketing agencies have previously been able to create a shift in public perception on certain aspects, like encouraging people to go vegan.

In essence, the framework provided by the authors not only highlights the drivers of behavior change, but also helps identify and narrow down the potential barriers that currently exist and discourage people to engage in sustainable actions. Different strategies can be drawn from the model by explicitly tracing the problem areas to primary and secondary barriers. For instance, in a campaign to discourage the use of gasoline, the researchers were able to narrow down the influencing factors to be social factors and tangibility. The team then worked on strategies which addressed both these factors by implementing warning labels in gas stations. This helped communicate and nudged consumers to decrease usage, as it slowly shifted the norms and also described concrete and relevant impact of their actions. Marketers can reference this framework to not only promote sustainable behavior change but also for other behavior changes that they wish to make in the market.

Source article: White, K., Habib, R., & Hardisty, D. J. (2019). How to SHIFT consumer behaviors to be more sustainable: A literature review and guiding framework. *Journal of Marketing*, *83*(3), 22-49.

0.2 Behavioral Economics

Article: Using Models to Persuade

Figure 1: Stylized Example of Model Persuasion

(**Source:** https://xkcd.com/2048/).

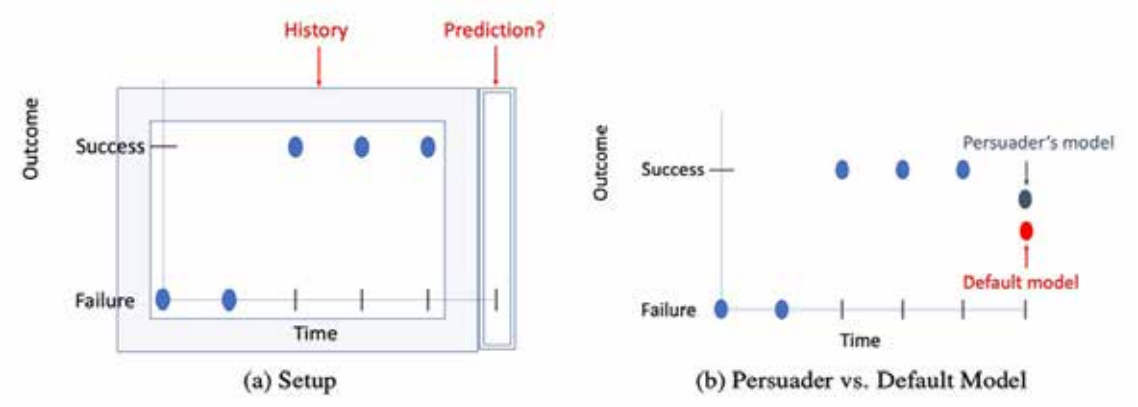
The figure gives an indication of how the same data can be used using different model by persuaders to persuade the people even though it models might is wrong.

The vociferous proclamation that "this time is different" is not a rarity post recent market rallies. Analysts present models based on recent market conditions and declare how their models fit the data better and how these models support their broad declaration: "this time is different". Figure 1 presents an amusing description of the analysts' proclamations. This practice is not just limited to finance. Politicians persuade people to their advantage by using models that use people's prior beliefs and the data that the people are aware about. The key persuasive element is not the information itself rather the aspect that expert highlights a relationship between outcomes and data in a way that logically leads the audience to take an action the expert favors. This paper differs from the literature in economics about information disclosure as this paper concentrates on interpretation of the information. The idea in the model proposed by this paper corresponds to various ideas in social sciences in terms of what people find persuasive. The idea of people favoring models that have "fidelity" to data, models that help in sensemaking and models with most "determinism" as seen in the work of developmental and cognitive psychology.

The receiver of information or "the decision maker" has an interpretation on history of outcomes that may be informative about the payoff-relevant state of nature. Persuaders propose models for interpreting the history to the receiver. A model here refers to the likelihood function that maps the history to the posterior beliefs in turn leading the receiver to take some action. The persuaders incentives are to propose models that generate a particular outcome, but they cannot influence the data itself, persuaders just help receivers make sense of the data. The persuaders are constrained in scope by the fact that receivers will better entertain models that they are exposed to and the models which they think are compelling in data. The main assumption over here is that a model is more compelling than the alternative when it is more persuasive in data and receivers prior. Essentially the receiver, given his prior, performs a "Bayesian Hypothesis Test" from the models he is exposed to and picks the model that makes the observed data most likely given the prior.

The basic model can be understood with an example. Consider a potential investor meeting an entrepreneur. The potential investor has past records of the entrepreneur's successes and failures. Supposedly, the first two ventures of the entrepreneur failed, and the last three ventures succeeded. The investor's problem is to predict the probability of success for the entrepreneur's sixth venture. The investor's prior of entrepreneur's success is given by θ, which we assume is uniformly distributed. Also, assume that this is the true model and the investor's default model. In the absence of persuasion, the investor believes that every entrepreneur's venture has same probability of success. The pursuer, which in this case is the entrepreneur, wants the investor to make an investment in the entrepreneur's venture and thus proposes to maximize the investor's posterior expectation θ. Suppose the investor is willing to believe that "this time is different" and is willing to entertain models that suggest that the entrepreneur's success probability was redrawn from the uniform probability distribution at some point so that only the recent successes are relevant. Assuming that the investor will only entertain his own default model and the model proposed by the entrepreneur, the entrepreneur will try to persuade the investor with the model that propagates only last three success as important and failures as non-important. The investor would perform "Bayes Hypothesis Test" and decide which model to accept. Figure 2 explains how the persuader can make investor believe that the probability of success of the sixth venture is higher than what investor's own default model actually suggested.

Figure 2: Predicting the success of an entrepreneur's next startup



(**Source:** https://xkcd.com/2048/).

Model-persuaders face a trade-off: better-fitting models induce less movement in receivers' beliefs. Given the prior beliefs, better a model fits the past data, lesser are the chance of receivers updating their beliefs to something remarkably distinct from their prior beliefs. Following this logic, if receivers are exposed to the real model, they can be most misled when the model fits the data poorly. Fragmented data given his prior leads the receiver to change his mind from his prior even if he was using the true model for his priors. Competition between persuaders tends to neutralize the data by pushing towards better-fitting models and a persuader facing multiple receivers is more effective when he can send tailored, private messages.

Source article: Schwartzstein, J. and Sunderam, A.* (2020). Using Models to persuade. *American Economic Association, 111,* pp. 276-323.

0.3 Behavioral Finance

Article: Diagnostic Expectations and Stock Returns

This paper revisits this puzzle that companies whose earnings growth the analysts are most optimistic about tend to earn lower return compared to the companies whose earnings growth the analysts are pessimistic about using the Kahneman and Tversky (Kahneman and Tversky 1972) representativeness heuristics model. The models presented in this paper go beyond the rational expectation formation models like Bayesian updating models to models in which expectation contains a "Kernel of Truth" in that they exaggerate true features of the reality. The analysts receive a noisy signal from the present earnings data of a company about the fundamental that captures the firm's persistent earnings capacity. The analysts update their expectations about the future growth of the earnings based on this information. Analysts overinflate the probability of good earnings in the future given the news of good earnings in the present. Although their beliefs about the expected earnings move in the right direction, these beliefs adjust more than the right amount. In essence after strong earnings growth the firm becomes representative of the "*Googles*" of the world and the analysts over inflate the probability of the firm being a "*Google*" even though companies like Google, Facebook are rare. This overinflation of the probability of the company being a "*Google*" leads to over valuation of stock. The paper examines the joint evolutions of the fundamental beliefs of the analyst about the firm's persistent earnings capacity updated using the noisy signal i.e., current earnings information, the expectations that the analysts form using Diagnostic Expectations and the returns which follow for multiple types of stocks. This over expectation about earnings for stocks which have given high growth historically and under expectation about earnings for the stocks which have given lower growth historically get adjusted as the future earnings and future returns are realized. Basically, the probability of the company lying in the right tail of the return portfolio is overinflated due to the positive noisy signal received in the present. As the good news flow slows, overoptimism cools off, the overvaluation which gets built in gets corrected and the stocks give low return in the future compared to the stocks whose probability was not overinflated.

The paper employs data where two main types of stocks are analyzed, High Long-Term Growth (HLTG) stocks and Low Long-Term Growth (LLTG) stocks. HLTG stocks have a history of higher earnings growth hence the forecasts of future earnings growth of HLTG stocks are too optimistic. HLTG stocks have had good past returns but their returns going forward are low as the stream of good news slows down as the stream of good news is not able to keep up with overinflated expectations. This leads to expectations being revised downwards later. The Low Long term growth stocks (LLTG) exhibit similar results where the expectations of low earnings growth is over inflated due to low past returns but these stocks beat the expectations with better stream of good news and hence give higher than forecasted returns which further leads to expectations being revised upwards. The data hence suggests that analysts use a firm's past performance to infer its future performance but overreact due to the updating mechanism arising naturally from overweighting the representative types.

The models in this paper allow the binding of disparate topics like extrapolation, overreaction to information and neglect of tail risk into one. The paper also makes three important predictions. Firstly, the analysts attach an overinflated probability that the HLTG firms are in the tail of future exceptional performers basically meaning that the analysts put in more than warranted probability of having a "Google" in their midst. Secondly, the spread between LLTG and HLTG widens among the firms with more volatile and persistent fundamentals. In both cases good news presents a firm to be in the clan of "*Google*" in the future even more. Thirdly the model predictions also encompass the expectations of HLTG(LLTG) stocks adjusting downwards(upward) bereft of bad news.

Source article: Bordalo, P., Gennaioli, N., Porta, R. L., & Shleifer, A. (2019). Diagnostic expectations and stock returns. *The Journal of Finance,* 74(6), 2839-2874.

0.4 Organization Behavior

Article: The Neuroscience of Organizational Trust and Business Performance: Findings From United States Working Adults and an Intervention at an Online Retailer

What improves employee productivity? How do we create high performing teams and organizations? These questions have been central to research and practice in management. While a lot has been written on this topic the evidence is often confusing. Taking a neuroscience approach to these questions Zak in 2017 argued that trust is a critical component in developing high performing individual and teams. This study explores how building organizational trust and aligning employee's towards the company's purpose increases business performance. Further, they provide some guidance on what organizations can do to increase trust.

Several earlier studies have shown that trust between individuals, positive interactions, and prosocial behavior at workplaces are correlated with higher oxytocin levels. Previous studies by Zak (2017) investigated how trust and trustworthiness were linked to oxytocin release. They used a protocol in which they checked blood oxytocin levels before and immediately after people made decisions to trust or be trustworthy. The participants were asked to choose some amount of money to send to strangers through a computer, whilst being aware that the amount would triple, and the recipient might not share back. They found that the more money people received, the more oxytocin was released, and higher oxytocin also predicted more likeliness to share the money. They corroborated these findings with another study where they safely administered synthetic oxytocin and saw that compared to the placebo group, participants receiving oxytocin sent more than twice the amount of money to complete strangers. After checking for several other parameters, they concluded that oxytocin seemed to be integral in reducing the fear of trusting strangers. Drawing from this work, Zak (2017) identified eight specific behaviors that affect organizational trust, allowing for a survey tool which could quantify trust. These behaviors were represented by the acronym "OXYTOCIN", which stood for Ovation, eXpectation, Yield, Transfer, Openness, Caring, Invest and Natural. Another study by Kraig et al. (2018) had found that tasks with Purpose also showed physiological markers consistent with oxytocin action. Thus, the authors proposed a causal model which associated Trust and Purpose to work performance variables.

This model was tested by first conducting a survey on 1000+ individuals in USA. The OXYTOCIN factors Trust and Purpose were assessed using questions; further, respondents were also asked about alignment with company values. Productivity, job satisfaction, retention, satisfaction with life, joy at work, income and closeness to colleagues were tested using a combination of self-reports and established scales. The survey showed that the organizations belonging to the highest quartile of trust paid their employees 10.3% more than the middle quantile. Employees in the highest quartile of both Trust and Purpose reported significantly higher productivity and job satisfaction than the lower quantiles. There was also a positive effect of these on job retention, life satisfaction, stress and even overall health. Interestingly, it was seen that Trust and

Purpose complement each other and together boosted the joy of employees at work. These results clearly go to show that high-Trust and high-Purpose cultures will create environments wherein people will not only have higher productivity and satisfaction but will also enjoy their work and lead healthier less stressful lives.

Seeing the effectiveness of creating a trusting culture, the intervention study attempted to increase Trust by raising the "Natural" factor of the OXYTOCIN factors which was found to be the lowest amongst the sample of employees tested. The Natural behavior measure represents one's ability to remain their authentic self at work. The study was conducted on 59 employees of a large online retailer. The intervention involved making employees watch a microlearning video discussing the science of authenticity for 10 consecutive days, followed by email reminders for being Natural at work were sent every week. The post-intervention survey data showed that Natural increased significantly which in turn increased Trust. The success of such an intervention has promising implications for creating more conducive organizational cultures.

These two studies further substantiate the claim that human-centric workplaces have much better outcomes in terms of both productivity and lesser job turnover rates. There is considerable economic benefit from encouraging camaraderie and growth in employees rather than treating them as capital. Organizations often underestimate the value of cultivating a creative, exciting and trusting culture, or they attempt to establish company culture without proper guidance on which aspects of culture would maximize value for both employees and the organization. This study establishes that organizational trust as a substantive measurable concept which can be improved upon by inculcating changes in specific behaviors. Here we can see that changing even one of the eight behaviors which influence employees' faith in the organization, can enhance their trust. This provides a far more feasible and impactful method to tackle the seemingly vague agenda of building better work environments. In the future, such behavioral nudge interventions could investigate the differential impact of each of the OXYTOCIN behaviors on trust, in various organizational settings and also assess the effectiveness of such interventions on a larger scale.

Source article: Johannsen, R., & Zak, P. J. (2021). The Neuroscience of Organizational Trust and Business Performance: Findings From United States Working Adults and an Intervention at an Online Retailer. *Frontiers in Psychology*, *11*, 3858.

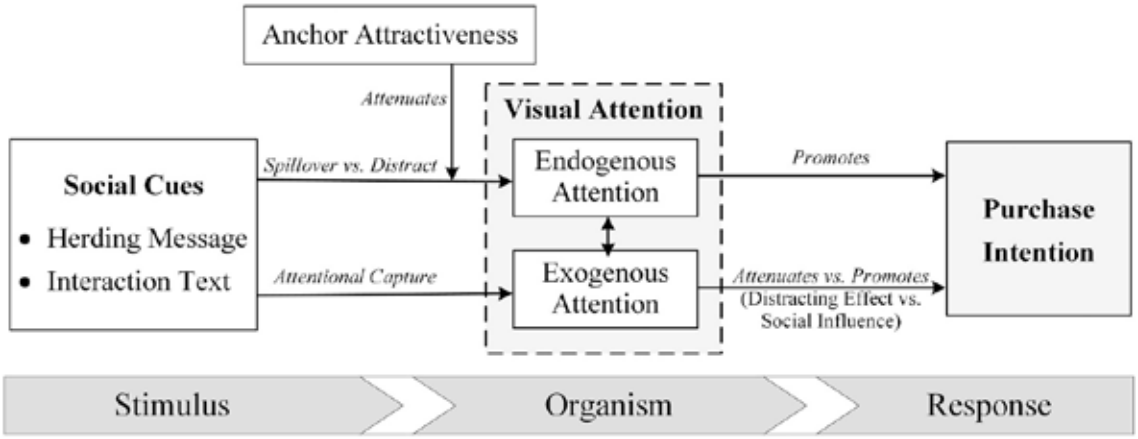
0.5 Neuromarketing

Article: Promoting or attenuating? An eye-tracking study on the role of social cues in e-commerce livestreaming

Livestreaming is extensively being used in ecommerce to boost sales involving audiovisual broadcast of the product over the internet through an attractive anchor who presents product details in a vivid manner and retain viewer's attention. Livestreams provide two-way communication for the consumers as they can interact with the anchors in real time regarding the featured product details, enabling them to seamlessly buy as well as save products directly from the platform. The success of a livestream platform as such relies on "its affordances of more effective social functions" rendering social cues of much complex nature as differentiated from an e commerce platform. These social cues capture both endogenous and exogenous attention of consumers during livestreaming. Anchors along with their communication styles paly a prime role in capturing consumer's endogenous attention by vividly by vividly delivering product information in real time. Similarly, sudden occurrence of stimulus such as herding messages and interaction text appearing on the screen during livestreaming comprise of cues capturing exogenous attention. Previous research examining the effects of selective attention on behavioral responses have had a debatable stance suggesting endogenous and exogenous attention as competing with each other to gain control over cognition through separate mechanisms (Yantis, 2000; Serences et al., 2005; Schreij et al., 2014). A counter view argues that social cues inducing exogenous attention are rather facilitatory as they have a spillover effect influencing consumer's response (Ye, Cheng and Fang, 2013; Yang, 2015, Liu, Huang and Zhang, 2016).

The mechanisms underlying both endogenous and exogenous forms of selective attention have so far remained unexplored in the context of ecommerce livestreaming. The current study takes social cues such as herding messages and interaction texts to examine a) how these influence a consumer's endogenous and exogenous attention while watching e-commerce livestreaming, b) explore the extent to which 'anchor attractiveness' moderate effects of social cues on endogenous attention and, c) how the two types of selective attention influence purchase intention.

Figure 1 The research conceptual model



(**Source:** https://ars.els-cdn.com/content/image/1-s2.0-0167923620302219-gr1_lrg.jpg)

The Figure 1 represents the two phased conceptual model of current research based on S-O-R (stimulus-organism-response) theory that postulates the idea that "informational and environmental cues act as stimuli (S) that influence individuals' (O) cognitive and emotional processing, in turn influencing their behavioral responses (R)" (Cortinas et al., 2019; Zhang et al., 2014).

Hence the design of the current study was such that the social cues in the livestreaming videos presented to the participants acted as the 'stimulus'; the visual attention was collectively considered as the 'organism' involving the exogenous attention (EXAOI) induced through two flickering social cues in the corner of the interface comprising of the herding messages (HAOI) and the interaction text (TAOI) and the endogenous attention induced by consumers' goal driven attention towards product and anchor (ENAOI) and finally the purchase intention towards the product being featured in the livestreaming video as the 'response'. Anchor attractiveness was considered as a factor moderating the endogenous attention and collective influence of exogenous and endogenous attention on purchase intention was examined.

With the above design, the study proposed a within subject eye tracking experiment where the subjects were asked to watch 12 real-world e-commerce livestreaming videos from *Taobao Live* with varying frequencies and numbers of social cues and different levels of anchor attractiveness. Their purchase intention data were obtained by self-reported intention. The visual attention was operationalized in terms of fixation time and count. Anchor and subject's gender and subject's age and perceived initial preference for the product (on a 7-point Likert scale) were considered as control variables in the analysis.

The results find a) consistency with previous research that the two types of social cues can attract exogenous attention. However individually, they varied in their influence on endogenous attention. The herding messages had a positive spillover effect on endogenous attention in contrast to interaction text that acted like a distractor and attenuated endogenous attention. In addition, it was found that b) herding messages significantly affect endogenous attention only under conditions of low anchor attractiveness supporting the attenuating perspective (Kukar-Kinney and Xia, 2017; Hu, Wu, Zhang, 2017) than the synergistic view of joint influence of different cues during ecommerce livestreaming, and c) The purchase intentions increased with greater attention allocated to the product and anchor. However, the effects of exogenous attention to both cues vary and seem to be competing with endogenous attention. However, the positive social influence of herding messages overwhelms the relatively less relevant interaction text.

The study successfully reveals the capture, distraction and spillover effects of social cues on exogenous and endogenous attention providing an exploratory theoretical framework to understand the role of social cues in e commerce livestreaming. Additionally, the study deepens the understanding between social cues and anchor cues and how they jointly influence the cognition during an e commerce live streaming session. The study provides powerful insights on atttentional influences over consumer response.

Source article: Fei, M, Tan, H., Peng, X, Wang, Q, Wang L. (2021). Promoting or attenuating? An eye-tracking study on the role of social cues in e-commerce livestreaming. *Decision Support Systems, 142*, 113466.

CHAPTER 2
Applications to Behavioral Science: IIMA Faculty Interviews

2.1 Area: Marketing

Question: *Thank you, Sir, for giving us this opportunity to interact with you. We want to know more about your views on behavioral science from the perspective of your area of research. So, could you please briefly talk about your area of research and how do you think behavioral science is connected to it?*

Prof Sahay: My primary area of research has been in the application of behavioral science theory is to Pricing and Branding over the last five or ten years. And for example, my most recent paper was on the impact of implicit theories, implicit self-concepts and dual brand personalities and electronic word of mouth. These pertains to the kind of consumers like, there are some who are much more interested in impression management (fixed mindset). There are other people who are more interested in learning (growth mindset). So, when these people are shown messages or communication from brand which are closer to their requirements, impression management versus growth and learning, then they are much more likely to engage in positive word of mouth. Therefore, one notion of an application of behavioral science or psychology related issues are to the areas of brand management, generic and e-word of mouth.

As for applications of behavioral science in management science, there are plenty. Behavioral Sciences to put it very crudely, is the science of behavior of people. If you look at the history of how it has evolved over time, you can go back to its roots in psychology, starting from philosophers like Spinoza and Nietzsche, to more mainstream psychologists in the late 19th, early 20th century, like Freud. More recently, the people who have been at the forefront of behavioral science, especially so far as applications in business and management are concerned, are Daniel Kahneman and Amos Tversky came up with loss aversion and the idea that people are convex in risks and concave in gains; Richard Thaler who came up with the idea of nudge and the whole idea of mental account that money is not fungible. So, these are all different dimensions of behavioral theories and behavioral science, which have applications, so far as we are concerned in business and management. For example, if you take loss aversion as an idea and you look at the shape of the loss aversion curve, where the objective gain actually translates into a perceived lower gain and an equivalent objective loss translates into a higher perceived loss, that in itself has direct applications and promotions. Therefore, now if I am giving a promotion, I'm better off giving two promotions so that the total perceived gain of a total

promotion of 20%, which is given a 10% and 10%, is more than one the perceived gain of a 20% promotion. That way, I am achieving a nudge in the direction of the behavior of the customer if I utilize that insight from behavioral science of loss aversion into the pricing and discounting of my products.

Similarly, if one takes the idea of mental accounts, which essentially says that money is not fungible, then one can come up with interesting conclusions. Like in the case of mental accounting where an individual places different value for the same amount of money based on subjective criteria. It essentially says that you know what, If I am saving up to buy a house, that money has a different value to me and I will keep it in the Bank at a lower rate of interest, and I might go out and take a loan to buy a car at a higher rate of interest, which doesn't make sense from a neoclassical economics viewpoint. But people do it. The same way from a household budget perspective, when I am going grocery shopping, I have a mental account, a mental account that I'm going to spend about Rs. 6,000/- rupees per month on groceries, and this is the total amount that I will spend for a certain number of things that I need to get for my household. Now, it is quite possible that the prices of individual items in that Rs. 6,000/- rupees might go up and down, but so long as the total 6,000 rupees the same, I am not too bothered. And therefore, if I am a company that is selling only 2-3 items out of the 20 items that the person is buying in 6,000 rupees, I have to be very conscious of how much difference my price changes make in the total amount of 6,000 rather than my individual change in the prices compared to and that is the actual competition along with how strong my brand is. And therefore, it is the idea that mental accounts can actually influence purchase behavior through changes in price, and it can actually give me more leverage, more leeway, more flexibility to change prices.

Another dimension of a behavioral science principle can come from personality theories. So, the first example that I described to you, growth, and fixed mindsets, are about theories of personality. Another dimension of personality could be promotion orientation and prevention orientation. So, there are many, many different dimensions of behavioral science. The common underlying thread of behavioral science essentially is that neoclassical economics has its limitations is the underlying premise which says that this is where neoclassical economics ends and behavioral science kind of starts adding value, and that you can say, is the genesis of behavioral economics and behavioral finance. Of course, one could claim as a marketing Professor that behavioral marketing has been around for much longer, the Journal of Consumer Research started back in 1973, the Journal of consumer psychology started in the 1990s and so marketing as a discipline has had a much longer tradition of applications of behavioral science.

The next step, of course, in behavioral Sciences, is the fact that all these principles that we are talking about in behavioral science ultimately flow from activities inside our heads, and essentially, they flow from activity in our brains. And over the last 20 years, we now have come to a place where we have a much greater understanding of how our brain works in practice, which parts of the brain are responsible for what kind of reasoning, emotions, feeling, decisions, what is conscious, what is unconscious. And so, therefore, to me, one of the challenges of behavioral science is how to connect the working of the

brain with different principles that we see in behavioral science. For example, we know that people display loss aversion. What is it in the brain that leads to the loss aversion? What areas of the brain lead to loss aversion? There is some preliminary evidence, for example, that suggests that loss version is related to the insula, the loss circuit. Hence with that we know that gains are computed in a different part of the brain, and losses are computed in a different part of the brain. Therefore, arguably, again, from a behavioral science application perspective, that opens interesting avenues of research into what can managers do to change the level of perceived loss and perceived gain because these are in different circuits. And so, if I have a message, if I have a price, if I have a packaging, how does the change in the message, the change in the price or change in the packaging impact the loss circuit more or the gain circuit more? And under what circumstances should I be trying to change one or the other so that as a manager, I'm able to achieve my goal. So that is just a sense of the possible landscape of the applications of behavioral science, the possible areas in which behavioral science can have an impact on the practice of business, the practice of marketing, the practice of branding and pricing, amongst other things.

At IIM Ahmedabad, at the NSE Centre for behavioral science, one of our goals will be to advance research in these dimensions and get a better understanding in the application of behavioral science. And perhaps, in the process also, we advance our own knowledge of behavioral science, so that we can contribute to the discipline and are able to add to scholarly conversations and enhance the efficacy of practitioner applications of the theory. As a marketing professor the applications are important, ultimately the test of a good theory is if its applicable.

Question: *This leads to another related question, as to how does one establishes a correct balance between consumer-based information and a product-based information while coming up with a marketing strategy?*

Prof Sahay: So that is actually a very, very insightful question and a very, very thorny question also, because in real life, it's a dynamic interplay between the two. Let me take a current and live example to work through that question of yours. So, let us take a situation where there is a company that is manufacturing an electric motorcycle. And let's say this electric motorcycle has got a performance which is the equivalent of a Pulsar 180 cc bike or a TVS Apache equivalent 200 cc bike. However, this electric motorcycle does not have a brand. Hero has a brand; Bajaj has a brand so in comparison this is new. The product itself, the product configuration is equal to or better than what a petrol pulser or an Apache can provide. So, it provides better acceleration, gives you a greater number of miles per rupee, more number of kilometers per rupee, the design is more Macho and aggressive than a Pulsar and Apache. So, on all those parameters, the product is equal to or better. Also compared to other electric motorcycles, it has a higher range of 180 kilometers versus 110- 80 kilometers, it charges more quickly and has more cycles, like up to 3,000 to 5,000 cycles compared to others which means one can recharge it 3,000 times. And you can also charge it overnight where 80% of it charges in around half an hour so it is a fast charge. Of course, now there is a negative that it does not have a brand and people have this sense of uncertainty about the battery. Will

it perform? What is the range? Will it break down? If it breaks down, how do I repair it? If I do not have it charged, where do I charge it? How long will it take to charge? So, there are all these issues. Now the product information is there. It is strong. However, from a customer perspective, they have these uncertainties regarding the electric part. They have a positive sense because the per kilometer cost is less. They have a negative because of the uncertainty. And so, the challenge from a behavioral science perspective is how do I communicate the power of the product to the customer so that the customer thinking changes and he is willing to try it? Now you can argue that customers are distributed in a particular way. Then there are some who are more willing to take a risk. And the other extreme, some are extremely risk averse, that there are some who are very environmentally conscious and are looking for the right bike. And there are some who are not so and not at all environmentally conscious, that there are some who want to buy a bike in this category, and that bike should perform and look like a bike like a Pulsar or an Apache. And so, the combination of all of those things determines whether or not a person will buy. As such I need to be able to target a segment where my conversion rate is going to be the highest. So, the risk takers and the person who are environmentally conscious would want to buy a bike like this that looks and feels and performs like a performance bikes category and who are also going to be using it primarily for in town driving because the range is only 180 kilometers. As a marketer, what I am going after is that particular segment that I have just defined. This customer information set that he already has, and she already has in their mind, is fairly close to what I am going to provide them. And so, when there is a match between the two, then the sale will happen.

Whereas those people who are more risk averse, who are less environmentally conscious and who are less willing to drive more new stuff and who are not that much into macho-ness and so on, for them I am going to be a hard sell. My product information is good, but the customer information or the customer state of mind is so far from the product information, that whatever way I communicate to them at this point, the convergent rate is not going to be that high. So, from a behavioral science perspective, therefore, I would define the challenge from a practice and managerial viewpoint, how to scale over a period through different segments, how to cascade through different segments. Because the initial one or two segments will then give me a critical mass of people who are going to form the beachhead segment for me. Since we know from neuroscience and behavioral science that there are mirror neurons that tell us that people tend to imitate. So, if I have 100,000 people or 500,000 people who have bought this bike over two or 3 years, then there are enough bikes on the road which are this new electric bike, which now add an additional information, product information, which can begin to try and convert other people who are still sitting on the funds because they see other people like you and me. When my friend buys it because he is a little bit more of a risk taker, and now because he is my friend, my perceived risk has gone down. So now I am going to buy it. So that is an application of the behavioral science principles in trying to get a product into the market.

Now, can I add to the theory also over here? In terms of theory, the present set of principles that we know is that people tend to convert their views when they are convinced. Now that convincing happens because of a combination of reason and emotions that can be

conscious, and unconscious. From a theoretical perspective, if there is a way that I can separate the influence that I am trying to exert over the customer to get the conversion and be able to say that the conversion took place 70% through the unconscious and 30% through the conscious or 70% through emotion and 30% through reason. Now, that is a powerful new insight so far as conversion or opinion change or behavior change is concerned, because I am achieving behavior change. These persons would have bought a petrol bike but are now buying an electric bike. So, I am achieving a behavior change. That way if I am able to say that this is the proportion of decision drivers in this context, I have something to contribute from a behavioral theory standpoint. And of course, these will have concomitant neurological driver also in the background, which hopefully we are also able to delineate and be able to share as an additional contribution.

Question: *With such extensive example of application of behavioral science in the field of marketing is it safe to say that it does influence behavior in the field of marketing? As a marketer, how do you feel about the shift/change in the perspective of marketers as such, while using behavioral science since it is joining hands with marketing?*

Prof Sahay: People have now become more conscious that there is this field that can influence the choice architecture and are now beginning to look for insights. I think a year and a half ago, I did a project for a leading automotive company, that is going to be launching an SUV. So along with this SUV, the company already had 2 SUVs in the market, one of them is in the 30-lakh range and another is in the 12-lakh range. But they did not have an SUV in the 18-24 lakh range, so they wanted to launch an SUV in that range. Typically, in the automotive company, the cycle time from initial product concept to final product is 4 years. But the positioning that this company is going to use in the mind of the customer, is that 'this is how the customer who is going to buy the 18-24 lakh SUV thinks, so this is how we want him to think of our product'. So, s/he is profiled as into freedom, into responsibility, into taking care of the future and so therefore in 2017-18 this is the kind of approach I started to think about positioning for the product that I had in mind. But then something like COVID happens, and you suddenly realize that the thinking of people has changed substantially. So, my original premise of this is how people think and so therefore they will respond positively to this kind of message, may no longer be valid. So, we need to re-evaluate what can be the new basis for positioning for this SUV, which is price between 18 and 24. And therefore, the idea of going and seeing what is the kind of underlying premises that we had about the customer set is to be re-evaluated. Which of those promises are now to have a greater salience as compared to before? In this case, the premises which have greater salience are fear, health, family, and to check if those have become relatively more important than freedom and risk, then my positioning also will need to change appropriately. Therefore, the idea is that one needs to be able to do to course corrections if needed.

Question: *So, we can deduce that behavioral science is helping in better decision making as such?*

Prof Sahay: Ultimately behavioral science is about understanding the behavior of humans and for marketing standpoint, the behavior of customers better. Then using that improved understanding of the behavior of customers, to be able to construct the

messaging, the choice architecture better, and hopefully be able to influence the customer in the direction that is of benefit to the customer and to the company. Although as a marketer, yes, I want to be able to serve the customer, but I also want to be able to do so at a reasonable profit because without profit, a company cannot grow and cannot exist and cannot produce new products and new services.

Question: *So, Sir, I want to close this talk with one final question that as an academician, what do you aim for while you are teaching them marketing and making them see the influence of behavioral science as these are budding marketers?*

Prof Sahay: Ultimately, when one is teaching, to be able to achieve a shift in the thinking process of the person is the idea, right? The facts of what one teaches today may fade away in the midst of time, 10 years from today, a person who graduates may not remember the exact content of all the courses that he or she has done over two years or one year. But if one has been able to influence the thinking process. This is how one has to think about behavioral science and the impact of behavioral science, and in not just marketing but also finance and economics. And so, this is how the outcomes can change because people actually think in a way which had not been thought about. If that is the process one employees in the classroom, that goal is the idea which is driving the process, and that process therefore achieves a change in the thinking of the participant in a session, then the purpose is achieved as a teacher. It is less about the content. So, it is more about the process that one employee in the engagement to achieve the change in the thinking.

We thank Prof. Sahay for giving us time for these useful insights!

2.2 Area: Economics

Question: *Welcome, Sir! I want to start by asking you about your current research and if you could briefly talk about that.*

Prof Rampal: Currently, I am working on several behavioral projects, which include understanding the behavior of people who have limited foresight and studies interactions. I have a theory paper on this to characterize how behavior looks like when people have limited foresight. And then, there is also an experimental paper that tests this theory against other existing approaches. And it seems that even expert players actively form beliefs about the opponents' foresight in strategic interactions, and they react to it. Whatever the beliefs are, they respond to that in an optimal faction because they are expert players. This is not being captured in any existing literature, even though it's pretty intuitive. But measuring it and identifying it in the experimental lab was the key challenge. Theoretically, describing or characterizing this behavior is also a key challenge, so those are the papers I am working on. They are at advanced stages in 'Games and Economic Behavior and 'American Economics Journal: Microeconomics'. Those are my solo papers. So that is occupying a lot of my time.

We also did a survey on COVID-19 beliefs and the support for lockdown. We found that, in fact, there is a lot of support for lockdowns, even in September 2020, and a simple phone call, salient Street intervention can increase that support up to 25 to 30%. So, people are anyway, on average, were okay with eight more days of lockdown in September 2020, when the first wave had pretty much hit. And so, it tells us that governments may have been a bit late in enforcing lockdowns. They may have underestimated the extent of support for lockdowns because even after the first wave and the extended lockdown and not many COVID cases at that point, there was sufficient support. And it was easy to drum up support. Once you saw 200,000, 300,000, 400,000 cases a day, and so many tests a day, it must have been far more salient than a simple phone message, reminding them of things they already knew about core, which is what we did. So that is something that's in the works.

Other experimental or behavioral papers are digging deeper into different notions of fairness. Do people care about giving somebody else the chance to do well in life? Not just typically right now, as for the literature stands, the fairness is evaluated in terms of outcomes. But is there a scope for fairness in terms of if the other person ever gets a chance to do well? So, this probabilistic notion of fairness, the chance to take decisions, chance to do well. Does that matter? Or is it only about outcomes, what you end up with?

Question: *It's more like a fairness for the just quality of it?*

Prof Rampal: It is similar to the idea of just getting a chance to do well in life. So, I tested it very broadly, roughly speaking, we are going to test that in a lab as well. There

are other things that are in the works. So, a project with Prof. Pritha and our RA in the Gender Centre we are working on a topic that evaluates the fallouts from gender-based affirmative action policies, particularly gender-based quotas, which are very much in use at the corporates nowadays. They want 50% representation at all levels within the corporate organization. But it raises the question of whether the story finishes there. Like, as soon as you get a quota, do you actually get equal treatment after being promoted to the same level as men within the same numbers as men? Do things become equal at that point? So, we were looking at perceptions; what are the perceptions about two people who are qualified for the same level, with or without quota, gender-based quota? So, we are saying that things do not quite end there. Measuring perceptions in the real-world data, is obviously super hard to have as you can't have an organization to try and measure how well do you think this person will perform and so on. So, the experimental lab provides a very nice setup for very clean measurements of these things. Of course, external validity is compromised. You cannot exactly export what we find, but you can sort of expose underlying tendencies in a very clear, clean manner. And another question is that after you are selected under gender-based quota, what does that do to your performance after? Is that effective in any way? So just doing a 360-degree evaluation of this gender-based quota in an experimental lab set up allows us to identify the forces at play in a manner without all the other influences that come out in the actual corporate setting. So, these are the main things that I have been doing, there are several other projects, but they are in more nascent stages of development.

Question: *Pivoting from the covid study, what is your take on vaccination behavior? Do you have any ideas of what could be done to promote more vaccinations or behavior change that can be employed? What are the tactics that could be used that would be more effective?*

Prof Rampal: Well, we know from Abhijeet Banerjee's work at JPAL, that immunization in their case, really helps to make things easier. For example, when you have immunization trucks reaching local localities make cutting down travel costs. Then one might in a rational world say that travel costs are insignificant if you are getting immunized. But it turns out behaviorally, they are not insignificant because people are subjectively forming beliefs about how likely am I going to get infected? Are there any risks associated with this and so on and so forth. So given these things, what one should do is make it easier for people to get it. Another thing that we learn we know from the immunization experiments is that it often helps to give incentives alongside making it easier to obtain vaccines. Incentives like a kilogram of pulses or food grains significantly improved vaccine uptake. And in fact, I can sort of also counter what we are encountering right now, which is the wastage of vaccines. Precisely what was seen that you get these scaled economies because your entire batches are sort of taken up by the public. But if you are also just giving a kilogram of pulses or cereal free, people actually then come for vaccination. This is all behavioral because people must behaviorally form beliefs about how beneficial it is to me; are there any side effects; how do I evaluate them and so on and so forth. They are forming this judgement, but if you provide some incentive, suddenly it turns in favor of vaccination. And remember that vaccinations generate externality, so if I am vaccinated, I can break the chain of transmission. So, we definitely need people to take this up, but we are actually stuck at the first step of making it available. But even

with the limited availability, we are also seeing wastage. So, wastage could have been managed better by literally having immunization trucks and so on, increasing locality. So, if you just do it before it goes waste, maybe four days before it's going to get wasted, put it in a truck and take it to a locality, what's stopping that.

Question: *So that is even a more predictive tracking system of how much you think is the demand?*

Prof Rampal: Yes, that›s a more rational view of the world, but behaviorally recognizing that people will have hesitancy for almost every immunization drive so it's not an unpredictable event. We know that we need to provide ease of vaccination and probably incentives alongside it. In fact, my own family members who are doctors have been actively promoting this, for example in the US, they are giving free food alongside vaccinations. We of course, need to do this because of our severely damaged economy have much more social security nets and so on and so forth. So, I think that we have missed a trick there, and I think we may have also overplayed the dangers associated with vaccination. So, one or two cases that are sort of out of hundreds that have been made to be seen as extremely severe. I mean, much more salient than well, what happens when you get covid? What is the likelihood there of losing maybe not yourself, but losing an elderly in your house or something? So, I think the salience game has not been played well in my opinion. I think we've also not incentivized vaccination, even in the sense that if you are vaccinated, you can go out mask free. So, if you have to wear a mask and take all sorts of precautions then what's the point of vaccination, somebody may ask. I understand the problem with this, that how do you check if somebody is vaccinated or not. But maybe in limited gated communities, there could be some relaxation, some benefits in mall visits if you have your vaccine certificate. So, I can just see that it is absolutely no incentive other than for a young person to say that I have .0% of me falling seriously ill. So, you know what? I don't care. So that person is basically not internalizing the externality they have. But if you actually provide them some personal incentive in terms of saying that in case you are vaccinated, you could go to a mall or you can go to your favorite pubs and so on, at least to close gated sort of establishments, you can check this at the gate, that might increase the uptake. So, I think we seem to have missed a trick there.

Question: *Moving to a more overarching view. Lately there has been a lot more talk of behavioral science around the globe. Even in India, there is a lot more growth with people getting into it and looking at it from various fields. How do you see these advancements in behavioral science affecting your filed of research?*

Prof Rampal: So, it is very exciting times for behavioral research, but also a time to be a bit cautious. One of the things in behavioral research is simple that try different interventions but do you do the requisite statistical tests with it? So, I personally think that it is going to be a bit of a dot com bubble, sort of that we are getting close to a bubble where all kinds of organizations are propping up, claiming to be behavioral experts. So, I think people catch on quickly, and not every time does it work, and you need to be a bit careful in the statistical analysis. I feel that the point of reckoning is going to come where skepticism will increase against every individual trying to make claims about

what is behavioral. On that end then, I think that will also boost experimental work because people realize that behavioral biases do not work like laws of physics where under sufficient assumptions, it will always deliver the predicted outcome. Here you are dealing with human beings, their psychology, and so on. So, there are predictabilities and invariable experiments. So, pilot studies and careful analysis of the data are almost always needed before you roll out a behavioral invention. That is because you never know if incentives backfire, then resulting behavior can vary in different kinds of ways. It is one thing exposed, explaining something that you have observed but challenge for researchers and consultants has to be that can you actually design interventions that will work? So that's not so simple, and that requires pilots and testing. And the statistical analysis and only then scaling up. So, I see this tension between the ease of understanding the behavioral bias and then the rigor required in applying it. So, I think this is going to be a time of churn, in my opinion.

Question: *Lastly, I just want to ask you what would your goals as a behavioral economics researcher or be? What is your ultimate goal in this field as a researcher? What do you hope to achieve or how would you aspire to contribute to the field?*

Prof Rampal: Right. So honestly, I do not have such an aim that here is what I want to show. It's not award it's not fame. It is just to have contributions in areas that I find interesting, which is, for example, strategic thinking, which I feel would be useful for future researchers. That is if your work is sort of cited and it leads for the development and better understanding of a human behavior in multi-state strategic settings which I think, is an incredibly broad area and so to make some sort of fundamental contribution there and to come up with fundamental insights in these scenarios. Sometimes you are driven by what you see around you. For example, there is a project where I am looking at breakdown of trust in today's time where you just know someone is from a different political line of thinking. So, you see this in your circle, and then the scientist in you says, let's study it and see what consequences it has, and you want to think through the consequences that you predict may happen. So just being aware, adding to the discourse in terms of current events as well as making fundamental contributions towards methods of thinking. As we just saw during covid some easy opportunities being missed. I wrote some newspaper articles and pointed out to some of my friends who work with the government on some of these things. So, if I can help improve policy thinking among corporate and government officials and so on, that's highly satisfying course. That is on the research part, but teaching is also a lot of fun. It is not just me who is coming up with ideas, many ideas come from my students. For e.g., just in last-to-last iteration we found that we really must work more towards the acceptance of the reserved category students. It turns out that when students make study groups, they do discriminate based on if their potential member is from a reserved category or not, it is a factor and not in the direction we want to see. If I can sort of give the tools to investigate these things, this requires a very sensitive experimental method to pinpoint that people are bias towards somebody else. You cannot just ask someone if they are biased, you sort of have to have a very careful method. So, keeping abreast with current research which arms you with newer and newer and better ways of research can be extremely valuable. And at least awareness is super important, as we know that the feedbacks within the

system can really help in getting rid of some of the problems within the system. So broadly making methodological contributions, making contributions to policy, public discourse corporate policy etc. where you can provide inputs to improve the outcomes and working with students, getting to know more problems from them, arming them with methods, that's an ongoing process and I hope to continue keep doing that. So, there's not one particular aim, like a world cup final or something, it's a process. Yeah, its day to day, its satisfying, it's hard, its effort. It should be. Because you're making tall claims, so they need to be robust for future generations to rely on them as acknowledged wisdom. So, it takes effort. It takes years of effort to say a small thing about an important issue but that's how it should be.

We thank Prof. Rampal for his valuable time and insights!

2.3 Area: Strategy

Question: *We wish to know from you what exactly are the applications of behavioral science in your field of research? So, for that, we would briefly want to know about your field of research to begin with.*

Prof. Anisth Sugathan: Thank you so much for inviting me for this interview. I work broadly in the area of sustainability, and sustainable development. It is a broad context in which I do my research. And within that, I look at the role played by firms, companies, the industrial ecology that contributes to the sustainable future narrative. And within that, I have a strong focus on energy because the footprint of energy production, energy infrastructure is the largest. When it comes to that, if we could tackle some of the serious problems in the energy sector that directly leads to a resolution of many of the issues that sustainable development faces. So, the industrial environmental nexus is my core area of research and within that energy and its externalities become important.

Question: *Okay so, behavioral science is primarily the study of human behavior, and your research from what I can gather is somewhere connected to how people are behaving in the environment, which in itself is actually causing an influence on the usage of these energies?*

Prof. Sugathan: Absolutely. Behavioral science is now a major policy tool. In fact, some of the insights which have come from behavioral science experiments in the recent years have now become mainstream policy tools around the term behavioral nudges and I say that the term itself has percolated in the policy making stays and that people use a lot. They talk about using nudges to incentivize people, let's say, to reduce the consumption of energy or to transition to more environmentally friendly practices, reducing waste, reducing their own footprint. All these are policy objectives which align with the overall objective of sustainable development. Many of these smaller objectives are achieved or there are experiments going on where insights from behavioral science experiments are used for achieving this. Let's say, for instance, just look at energy consumption, we talk a lot about that you should switch off your fans or lights, when you want to leave your room you should turn your thermostat down, switch off your AC and all that. Now, these are all actions which can directly impact the overall footprint, energy footprint of an individual and there are a lot of studies which use behavioral science techniques to influence people to be more energy efficient and to conserve energy. There are many techniques which are borrowed from behavioral science, for example, framing of the information and the way in which an information is conveyed to a person, making the default option as the more efficient option. So, for example, let's say you walk into a hotel room, in most rooms they will set the thermostat around 18 degrees Celsius which is quite cold, and many people don't bother the change this. Now, if you just switch it to, let's say, 24 or 25 that will have a huge impact without any loss of comfort of wellbeing

to the inhabitants. Because people won't go ahead and make that change because there is a cost involved, there is an effort involved so if you make the efficient option as a default option, people can follow that. That's one example where people use it very effectively.

The other example is actually 'the framing of information'. Let's say in an apartment complex you go and tell people that you are consuming how many units of electricity you should reduce. But that doesn't give them a reference point as to what does it mean by 'I consume 35 units or 30 units or 15 units. But if I tell them that your consumption is 10% more than the average consumption in your locality, that immediately gives them a point of reference and once you frame that information in that form, you know that "oh I may be consuming more".

Question: *That's a very practical example of actually using behavioral science in the field of energy consumption and sustainable energy. I would like to know that how do you train students to work towards better implementation of these policies, how they can actually be trained to go out in the world and implement these?*

Prof. Sugathan: There are multiple levels when it comes to training the student from multiple levels of intervention. The first is, of course, at a theoretical level to Introduce these concepts and ideas in their courses so that they know that there exist these kinds of techniques, so it would enable us to use it. Second is to involve them in some real experiments as a part of their projects or independent projects which they do whereby they actually go ahead and run an experiment. And we have a very good context, a big campus, lot of inhabitants, and we could do some behavioral science motivated experiments to improve upon certain behaviors.

So, as an example I know that the different dorm rooms in IIMA, they conduct different kinds of competitions, obviously, in the security of good sportsmanship. One of them, which I believe the *Prakriti* Club did I, was to motivate incentivize people to reduce their dorm level energy consumption. So, every day they would tweet or rather, a message, what is the energy meter reading of their dorms? And they are competing to reduce their consumption. So, people are moving out to switch off their lamps and things like that, so they compete, they make it public, and everyone knows who is up in the leader board. So those kinds of real experiments give them a flavor of how behavioral science techniques work and when they go out, they will be able to sort of build on these insights which they have learned to other labs and contexts

Question: *There's also a connecting issue that it in today's time, we are all connected online. With the current circumstances we are all, bound to follow this format. So how do you think behavioral science can survive in this format to help in implementation of energy conservation policies?*

Prof. Sugathan: I mean, there is spending more and more time online. Everyone is plugged in. In a way, it's actually behavioral experimenters' dream come true, because now they have access to people 24x7 to do this kind of experiments. However, I would like to sort of was the red flag there and say that beyond a point of using behavioral

science as the tool, it could easily slip into a zone of a dystopian controlled society. This concern has also been raised, especially in the social media platform. For instance, the Uber case, the way Uber gives information to their drivers, supposedly its very voluntary for them to Act. But they know that, let's say, and they are about to wind up their day and a message comes that if you take this one more trip, you will be able to get some 100 extra points or something like that. This basically nudges them to do that extra work out of fatigue. So, there is an element of coercive social engineering that could become more real in a more connected world, and that is a concern. I believe if you start engineering and sort of embedding behavioral tools and techniques into every aspect of our social interactions to go to the other side, that is something a little scary for me, and it sort of interferes with your free will and your choices.

Question: *Sir I would want to know that what is the future vision of your research in terms of behavioral science and things you consider crucial and should be explored?*

Prof. Sugathan: So currently my focus, at very broad sense where it is heading is, that I am trying to drill down from the macro level work which I've been doing aggregating numbers and presenting broad patterns. I am trying to scale it down, scale it down to smaller units. So instead of talking about, let's say all India, this is the pollution levels, or this is the carbon footprint, I want to understand the micro details, details within a city, the heterogeneity which happens within a city, and the factors which are quite different when you look at the micro level factors. So, I am trying to explore those micro level of factors which involves both people and the natural world connected together. So that is the direction in which I see the newer projects that I'm working on. So that is a direction it is taking

Question: *Sir any message for our listeners/readers from a behavioral science perspective as we would want this Centre to be part of all the research that is going on at the institution.*

Prof. Sugathan: So behavioral science, as a tool, and a new source of information about how people act and decide has proven to be very, very effective. The new research shows that you can actually make people do things which somethings that they didn't do before, this kind of a power accounts greater responsibility. To paraphrase Spiderman's "With great power comes with responsibility", imagine a future in which it is so deeply embedded in all the policy structures and public spaces. We are not aware of it, but we are being indirectly controlled to act in a certain way. Then the question becomes, who decides on how people should act and how is this thing happening? These are the questions that I feel both researchers and readers who are leading the frontier to keep in mind while you're doing your research. And you should know that when you're working with a sharp tool, it can even cut and pose injury. On that cautious note I would like to end this.

We thank Prof. Sugathan for his rich insight and valuable time!

2.4 Area: Finance and Accounting

Question: *It's a great opportunity for us to have you here. We wish to know about the application of behavioural science in your research field, for that we would want to have a brief description of your research.*

Prof. Jayanth Varma: Yes, most of my work are in financial markets and their regulation much of which involves investor behavior- how investors evaluate various alternative investment products which ultimately determines the pricing and valuation of various products. And investor behavior is also important for the regulator to anticipate the market failures, which might need regulatory intervention. That is where our behavioral research comes in.

Question: *Is there any theory in behavioral science which is frequently applied in this field to the study of investor behavior or something that you think that brings out a strong connect between investor behavior and methodologies used in behavior of science?*

Prof. Varma: So, in this field, there are basically two schools of thought. There is the neo classical framework which focuses on rationality, and their core belief is that most investors are rational, or at least that the rational investors dominate the pricing and valuation of the securities. There may be irrational people, but so long as the bigger players are rational, the market would reflect their rationality. The financial markets are a place where it is not one person- one vote, it is one rupee-one vote. So, what really matters is the behavior of large institutions of high-net-worth individuals and so on. So, if they are rational, then that might be adequate to justify using the rational paradigm to do that.

At the other extreme, you have the behavioral finance school which argues that there is pervasive irrationality that cannot be ignored, it does not cancel away. So that if individuals have biases, but they are in opposite direction, then they cancel out and the market behavior would be closer to the rationales. Behavioral finance documents systematic departures from rationality which could impinge the price discovery and valuation. Embracingly what we are seeing is a kind of middle ground, which is emerging, and talking about, a kind of *"rational irrationality"* if you want to call it that. You have your models that would say that it may be perfectly rational not to spend too much time and effort analysing things because you have other things to do. And you say that, okay, I'm going to spend half an hour of deciding my investment. With limited time, you focus on some critical things, and you come up with something which meets your requirements. As such you just go ahead because it might be rational to say that I'm not going to spend 10 hours evaluating all kinds of things if the incremental benefit from that 10 hour of analysis is not going to justify spending that much of time. So, we can be rational (talk about rational inattention models and so on) as we can be perfectly rational not to pay attention to things which are probably not going to be important.

There is also another way to think, which comes in that, big institutions may not be

irrational in a behavioral science kind of point of view, but they might have severe governance failures. As such, the institutions might not actually act in the interest of its investors. For example, mutual funds might not act in the interests of the investors because incentives are not properly aligned, or it is hard for the investors to monitor what the fund managers are doing. And therefore, again, you might find that big institutions do not necessarily behave in a rational way. And increasingly, what we also find is this is compounded actually by regulatory interventions, because your regulators are putting all kinds of requirements to protect the investors. Then, if you are a fund manager, you are not going to think about the spirit of the regulation, but you are going to treat the regulation as a checklist. And you say, okay, let me do one of the simplest ways to conform to all of this. So, when the regulator comes and looks at you, you are perfectly fine because you have met all the regulatory requirements, but in the process, you are not doing a great job for your investors. So, these are the issues about institutional behavior.

Similarly, it is interesting when people first talked about herding behavior, they talked about herding of individuals. But increasingly today, the worry is about institutional herding, that is, institutions will herd because there is safety in numbers for the institution. So, if a regulator comes and asks why you are doing this? You say everybody else is doing it. If you do what others are doing, then it would be hard for the regulator to say that you are wrong, but if you stray off the path, then you have to justify that even if it is actually a good thing to do. So, you get an enormous amount of institutional herding. This is also possible, that while individuals might be quite heterogenous in terms of their educational, ethnic and all of their cultural backgrounds, a lot of the institutional managers might come from highly homogenous backgrounds. So, they might have gone to the same business schools making it a very homogenous group. And then it's a lot easier for a lot of biases to emerge there because there isn't enough heterogeneity for it to cancel out. So those are issues that that we are the way grappling with now.

Question: *So, borrowing from this answer I would want to know if you have witnessed any shift in the approach of studying investor behavior since you stated there is also an impact of these irrationalities and circumstantial uncertainties that are actually influencing the market, where behavioral science can join to give a helping hand?*

Prof. Varma: Yes, that was definitely happening. So behavioral finance is a growing field. But there is also, I think, some degree of disillusionment with that because there is this concern that behavioural finance can explain anything. I think there is this joke that, you know, that half the papers in behavioural finance talk about overreaction, and the half the papers talk about under reaction. So, if you put the two together, maybe the market is reacting rationally. There is this concern that behavioral explanations are becoming too flexible and it's not enough to have a laundry list of biases. You need to have a framework that says that under these conditions, this bias would predominate like what are the conditions under which you will get over reaction or the ones under which you will get under reaction? So, the demand is there for making that theory also deeper and richer. I think the evolution in behavioral finance is being that in the initial years it was sufficient for a behavioral finance to be kind of negative, that is going and telling the neoclassical guys that, you know, what you are doing is incorrect, that there are problems in your models, which is basically that you are pointing fingers at the rational paradigm. But now what people are saying is that those days are over. We have done enough of that. But now the times come for you to put up your models and see if

those models hold up, you put those models to the test. Then you find they fail as well. And so therefore, what I am saying is, I think the easy stage of behavioral finance is over. Now I think we would be moving towards the next phase of saying, let us take that and build model and build competing behavioral models. So, you have multiple behavioral theories, you build models and then you test them against each other, which helps under what conditions. The advantage of the rational thing is that usually there is just one right answer? So, if I ask you, what is six times eight? There is only one right answer, 48. But if you start asking people who are biased, they might give you wrong answers. If you pull people in, waking up from their sleeping, you will probably get 10 different answers. And then the question comes, are you basically saying that it is all random, or can you build predictive models? And I will say that under different sleeping conditions, the answer to the same question could be different. So that is the easy part of saying that a lot of people get six times eight wrong which is useful, but I think the time for that is long gone. Now people know that that happens. Now you have to say, okay, under what conditions you get 47, and under what conditions will you get 49? What conditions will you get 48? Or maybe is 48 good enough because all the errors cancel out. So, if you ask 100 people the average answer is still 48. So, I think it is to go that extra distance and now that's hard work.

Question: *So, I want to know if you are hinting at a future, which is exploratory? There cannot be one definite answer from behavioral science itself in the field of financial market regulations. If I must say that every time the conditions will be varying and obviously internally, the biases will also keep changing. So basically, is it more like an exploratory journey that will keep happening due to changing conditions?*

Prof. Varma: No, I think I am more optimistic than that because I think the field is also making advances. We have newer tools. Right now, we have neuroeconomics, for example, is able to probe deeper. And if you are able to actually understand what happens inside the brain, you have a model of the neural structure of the brain, then you may be able to actually come and predict. So, I think that is where the field has to go. It has to be able to make more predictions, and those predictions have to be tested. And if there are competing predictions, we got to figure out which model does a better job. I think that is the challenge for going forward. And I am optimistic because we have a lot more of these tools available and we have a lot more computational power. See, 25 years ago, if you wanted to build a model then it had to be a very simple model, which you could solve. So, you would say, I want a nice linear equation, quadratic equation. Now with computation, I don't care that it be very complex thing. The computer will solve it for me, and neuroimaging will help you build models, which are able to actually understand why and what variables would come in and what variables to put in. We have machine learning now which can look at all this contradictory kind of data and try to classify and do all of that. So, I think we will have to marry all those together- the advances in machine learning, artificial intelligence, computing power, and the advances in neuroeconomics. And there's a lot more data about the behavioral biases in financial markets because over the last 20 years, people have documented all the things that go on. So, you have enough data. You have the tools to build better models. I think that is what I would look forward to.

On that promising note, we thank Prof. Varma for his valuable time and the rich insights he could give!

2.5 Area: Human Resource Management

Question: *We would like to know briefly about your area of research and its connection with behavioral science.*

Prof Moses: So, I am a faculty in the HRM area. My interest lies at the intersection of organizational macro theories and HRM. More specifically, I work on things related to technology and the adoption of technology in HRM. For example, when any technology is adopted, how does trust change within the organization? And what kind of practices can be used to gain this trust back? Because there might be a loss of it.

In terms of behavioral science as a field, HR is heavily influenced by sociology, psychology, which are considered the mother discipline. And psychology has a very rich history of doing experiments and talking about behavioral changes and things like that. However, there is a feeling within the academic community that maybe we are selling ourselves short, and with the advancements that technology and medicine has done, specifically medicine, we are able to bring in behavioral inside, by using things like neuroscience. That is one of the areas of interest that I have, so the same kind of context that I mentioned before, but I would like to test it using neuroscience or behavioral science.

Question: *Sir, we would like to know how specifically behavioral science actually is helping to improve a workplace?*

Prof Moses: Okay, so this is quite interesting because for a very long period of time, we believed that there are certain best practices that affect everybody similarly, right? Though, there has been some research around individual differences, that's more towards the personality side. But if you look at any workplace, whether it is well-being, engagement, job engagement, or employee engagement, health and safety, stress and strain, all these kinds of insights can be brought in using behavioral signs. Today, one of the challenges that organizations are facing is gives rewards. So, both practitioners and researchers understand that rewards cannot be only monetary, you have tangible and intangible rewards. But giving whom which kind of reward is the important question, which cannot be answered without some insight from behavioral science. So that is something that I think, that's where the workplace will improve when we are trying to make more personalized solutions to employ. This is extremely important, given that there is a word for talent. You have people, but you don't have people with the requisite skill set of competencies that are there. So, in those cases, behavioral sciences definitely help.

Question: *So, is there any theory that HRM relies on more? It could be any theory in general or in behavioral science also, that are frequently used or that are considered. There are certain practices that are considered, like core to a sector. So similarly in behavioral science are there certain practices that you think are core to this sector, or is it changing? Is there a shift?*

Prof Moses: So, I would make a differentiation between psychology and behavioral science? There are tons of core theories in psychology, there are theories of motivation, theories of attribution and all sorts of theories. In terms of behavioral sciences, the field is very nascent. I don't think we have one particular theory that is taking shape. We draw from multiple theories, some of them come from psychology, some of them come from neuroscience, some of them come from organizational theories. So, I think as a field, because it's nascent there is a huge scope to grow, and there is nothing that is to stop it.

Question: *So, is there anything in particular that you would want to explore more in this field particularly with the help of behavioral science?*

Prof Moses: There are tons of questions. So, for example, let me give you a very interesting example. Recently there has been some great work on trust, interpersonal trust. We know that there are different views on trust. One of the views that trust has, that it is a social construct. It flows in a network. Now if you consider things like Facebook or Twitter, where we are exposed to certain networks only, my belief in certain things may become stronger which may be right or wrong, because there is fake news out there as well. What happens is I start believing in something that is false, that I feel that it's true. That is where I think behavioral science has played a role, on how people's perceptions can be impacted, or how they change. In terms of the workplace or in an organization, there is a lot of work that can be done around just employee well-being and employee engagement. And you can view it through different lenses, whether you are doing it through compensation, rewards, training, performance appraisals. So, there are tons of things that you can use as tools or as a lens to view these things. But you can essentially use behavioral sciences to make a more concrete, more valid and a more generalizable outcome.

Question: *Recently there has also been a technological boom that has happened, like relying more on technology to study human behavior, a lot of people don't consider it as quite valid. What are your views on that?*

Prof Moses: Look, this is what I feel, in my opinion, I truly believe that we have always had data, always had great analytics. The only difference is now we have more access to more data. And if we are able to model behaviors accordingly, I think it should be valid because at the end of the day, nobody's saying that everybody follows that path. Data initially shows you that a majority or a large proportion of people are following that path and moving towards the mean. And obviously there will be outliers, nobody is talking about the outliers per say. In general, this helps, which is a good thing. And I think that is something that is going to go ahead as well. I don't think we can shy away from things.

Question: *So, sir, as it's a short interview and I've already asked too many questions, I'll wrap it up with one more question about what is the future of behavioral science in your field of research? Where do you see it going?*

Prof Moses: So, let me answer that question using two parts. Part one, where the field stands right now, from an academic perspective. The field is now moving more towards

data analytics. We have been using surveys, or using archival data, but till date most have been survey-based research, where you have instruments, and you are testing and using. Sample size and all are fine, but with surveys you cannot rule out causality or reverse causality. There are other issues and biases related to survey designs and survey methodology. The field as a whole is moving more towards a data-based approach. That said, HRM as an area has always been empirical. I still value qualitative data very highly, like the insights that you get are tremendous, which you would not be able to get using quantitative data. So, both the fields are moving towards an empirical based approach.

On the other hand, a lot of practitioners have already started using technology and specifically technology that assists in behavioral science. For example, people are using algorithms to select people or to get data on who is best fit for our company. People are using data on who to promote, or if I have a bunch of highly talented people, how do I place them. There has been very interesting work that has come up, google has come up with a very interesting Project Oxygen, which had a basic question of do we need managers. You know questions are being asked, people are doing a lot of interesting work in the practitioner domain. Research as a whole is also moving towards that side. In fact, to be honest with you, Academy of Management (AOM), which is considered the biggest organization with academic membership around the world, has recently started an organizational neuroscience special division. The idea behind it is to focus on the behavioral science and behavioral approach, more specifically a neuroscience-based approach to doing work, academic and practitioners. There are many practitioners who are using technology, but they do not understand the behavioral science behind it, so they don't know if it's right for them. It is like buying something off the shelf but buying it off the shelf doesn't mean you like the taste, or it suits your palette. And I think as a whole behavioral science is very helpful in furthering the field and giving validity to the field, which may have been lacking in some instances. In fact, there are also papers that look at the same things which have been investigated before but now from a behavioral aspect, to make more sense. You cannot say that I don't believe it. If I prove that certain parts of your brain are activated during a particular act, if I can prove that you cannot deny it. I mean think of it that way, I am giving you proof that is beyond doubt. Thankfully, science has already shown us that that happens. If you look at any science experiment or medicine related experiments, they have always been doing it, but we are now getting there. I mean, not now, but in the distant future we will be able to call ourselves a science.

On that promising note I thank Prof. Moses for giving us time for his valuable insights.

CHAPTER 3
NSE CBS Behavioral Science in Management Conference, April 2021

NSE Centre for Behavioral Science at IIM Ahmedabad organized its first annual conference on Behavioral Science in Management at IIMA campus on April 9th and 10th, 2021. Held in a virtual format, the conference aimed to provide a nuanced perspective into behavioral science research in the field of Finance, Economics, Marketing, Organization Behavior and General Neuroscience in Management. The presentations were delivered from experts of both industrial and academic sector thereby providing a unique platform to exchange contemporary behavioral studies and practices in management research.

3.1 Inauguration Ceremony

The event was inaugurated by dignitaries namely, **Mr. Ravi Varanasi,** Chief Business Development Officer, National Stock Exchange of India Ltd. and **Mr. Harish Bhat**, Brand Custodian, Tata Sons who were the invited chief guests and gave the keynotes address for the conference; **Prof. Errol D'Souza**, Director at Indian Institute of Management Ahmedabad (IIMA) and **Prof. Arvind Sahay**, Chairperson, NSE Centre for Behavioral (IIMA).

Prof. Sahay opened the session with a welcome note addressing the need to study human behavior. Stressing upon the relevance of the conference, Prof. Sahay said that part of the Centre's remit here is not just to be able to do and support research, but also to be able to disseminate research to a wider audience, combining academia, industry and policy in our country. Talking further about the need for behavioral science he stated that "*I'm reminded of the saying by the 16th century French philosopher Descartes when he proclaimed 'cogito ergo sum' that is 'I think therefore I am' for a very long time. We have been influenced by that kind of thinking that the rational thought process that matters only neoclassical, economic, rational approaches to human behavior matter. However, we know that over the last 40 years, beginning perhaps with the pioneering seminal works of which we have had an increasing area of research that is now showing more and more conclusively that emotions, feelings, conscious, unconscious, all of these determine and influence behavior to a very large extent. And when we take this into account, that all managers, whether they are taking decisions in marketing, finance, economics, human relations influence human behavior, it becomes very, very important for us to be able to study these phenomena in greater depth. To be able to provide insights that are likely to be more useful, relevant and accessible for researchers and for managers*".

The welcome note was followed by a keynote address by Prof. Errol D'Souza who acknowledged the NSE Center for Behavioral Science at IIMA as "*a step forward to making an important change in the pedagogy of business as well as the practice of business in the country*.". He gave the example of a simple act of self-control that one has to command

in everyday life which needs greater understanding and as such is foundational to the study of behavioral science. Prof. D'Souza suggested everyday actions of self-control as reflecting the tradeoffs between emotions and rationality, which is an ongoing battle leading on to perhaps make impulsive or rational choices in life. He stated the need to study the implications of similar behavior. Casting more light on this behavior leading to a battle between one's present and future self, Prod. D'Souza stated that "*the constant battle to weigh the implications between current self and future leads people to discount their future alternatives ineffectively*". Extending the idea through a presentation, Prof D'Souza discussed three main factors which influence discounting rates: a) impatience, b) declining marginal utility of consumption and c) the growth rate, the sum of which gives the discount rate. He mentioned that discount rates are usually calculated considering somewhat constant or predictable growth rates. In his talk Prof. D'Souza dealt with the interesting question of the scenario when the growth rates are uncertain, which he stated as being witnessed currently during the pandemic. He stated that during times of economic uncertainty, one observes this tradeoff between fear and hope. In his presentation, he illustrated this tradeoff using examples and emphasized on the fact that fear outweighs hope of a good outcome as stated by Martin Weitzman (2012). To this he further added that there could be a disparity of growth rates experienced by different segments in society. The elite may experience rapid growth in their incomes, but most people may have stagnating incomes. In such scenarios, he claimed that policymakers should never follow averages and should acknowledge the different discount rates for each segment, this should be applicable in all long-term public projects such as health and sanitation. Prof. D'Souza ended his talk by emphasizing that "*when we think about decision making, especially over time, uncertainty should make us "rethink" about how we make decisions and how projects should be chosen."*

Upon the completion of an insightful note, Mr. Ravi Varanasi was invited to address the inaugural session. Mr. Varanasi in his address mentioned about NSE-IIMA collaboration to set up the NSE Centre for Behavioral Science. NSE in 25 years has grown to be one of the largest stock exchanges in the world and is invested in furthering research especially in the Indian context to serve markets more effectively. Mr. Varanasi shared that NSE was excited to be a part of this initiative which aimed to bring about "*empirical rigor to the behavioral science application in India.*". His address expanded to the segments of behavioral finance in which he raised the issues of several problems cropping up which are making it difficult to understand the markets trends especially in these times of big data and excessive access to information. He stated that the earlier efficient market theories have begun to lose their count and the rationality hypothesis has failed miserably in the attempt to explain the volatility of returns and trading volumes both in developed and emerging markets. The mainstream finance which assumes rational actors with no emotions, culture or social relation influences, takes everyone simply as utility maximizers and fails to explain the market behavior. According to him, Behavioral finance counters these beliefs and would greatly improve the understanding of market reactions. Setting up this Centre and lab would enable further growth of knowledge and contribute to the behavioral science movement in India. Mr. Varanasi ended his speech saying that NSE would continue to foster relations with academic institutions to strengthen and deepen the knowledge in this field and encourage more research.

3.2 Keynote speeches

3.2.1 Mr. Harish Bhat

Brand Custodian
Tata Sons

Mr. Bhat began by congratulating Prof. Arvind Sahay for coming up with the plan to establish a Behavioral Lab at IIMA and thanked IIMA for receiving an invitation to participate in the first event at NSE Centre for Behavioral Science. He expressed his keen interest in behavioral economics which led to several collaborations with Prof. Sahay.

Mr. Bhat covered the marketing, branding and business history of Tata groups through multitude of examples and anecdotes as part of his keynote address while drawing a parallel to the group's proceedings with theories of behavioral science and deep understanding of human behavior. He began by stating the relevance of his representation as a member of Tata groups which has immersed itself in the understanding the behavior of Indian consumers for over 153 years beginning from the year of its foundation by Jamshedji Tata in 1868. Expanding more on Tata groups, Mr. Bhat mentioned it having about 700 million Indian users in today's times who use its products or services. A good part of Tata groups' success was stated to be led by the deep understanding of Indian consumers and their behaviors. Drawing from his own interest in consumer economics and consumer behavior along with being a marketer for over 34years, he mentioned how his initial interest in human behavior went back to the classrooms of IIMA. In the feat of legendary IIMA faculties like Prof. Abhinandan K. Jain, Prof. M N Vora, Prof. V. L. Mote, Prof. Pradip N. Khandwalla, Prof. Rama Bijapurkar, and Prof. Samir K Barua amongst others, he mentioned that learning about human behavior through case studies is as important as data in coming to the right positions.

Speaking about his work of the past three decades which mainly has been around building Tata Brands like Tata Tea Chakra Gold, Tanishq, Titan and Fastrack, he attributed their success to sharp consumer insights led by deep understanding of consumer behavior while also adding it be true for many Tata group brands.

Narrating a few stories from the Tata groups, he mentioned his interest in behavioral science exploring just a few years ago after reading Richard Thaler's famous book titled 'Misbehaving' which was also ranked at financial times best book. Quoting Keats from his sonnet, 'On first looked into Chapman's Homer' with lines "*Then felt I like some watcher of the skies, when a new planet swims into his ken*", he said his reading experience was similar to these lines where one where a new world unfolded to him and one that validated a lot of his intuitive beliefs as a practitioner over the years. The book talked about concepts of behavioral economics beautifully through multitude of stories and anecdotes about why human beings are not rational. He stated that after everything that one has learnt in economics about the rationality of human beings, this book was presenting an absolute conversing point of view. Detailing upon a particular anecdote in the book on cashew nuts which he mentioned was seminal to the author, Richard Thaler who as he stated "*used to host dinner parties in 1970s where people were served cocktails along with a bowl of cashew nuts while waiting for dinner. He was observing this bowl of cashew nuts carefully and*

apparently the cashew nuts started disappearing within minutes. So, he got worried as a good host guessed that guests are going to fill up their stomachs with these salty cashew nuts very quickly and he did something unimaginable. He withdrew the cashew nuts and took them back. And then he came back to his room where he now had guests without cashew nuts. Apparently when he came back after depositing cashew nuts in his kitchen, his guests thanked him profusely for removing the bowl. Thaler was surprised, that as an economist, he had taken something away and he had received thanks. Now that goes contrary to the laws of rational economics, which says that more choices are always better than fewer choices. He was surprised why his guests were not behaving rationally but thanking him for depriving them. As he studied this episode, he learnt that people don't always make choices that are best for them because we don't always behave rationally. Sometimes we misbehave and make choices which are not in our own interests. And therefore, as a marketer, or as a person in any field, you can help people make better decisions for themselves if you intervene to guide them in a certain direction. For example, by taking the bowl of cashew nuts away and therefore retaining the appetite for a lovely dinner. So, in a long term when dinner is served, the guests are going to thank you for taking the cashew nut bowl away. In the short term, some people may actually get furious that you have removed that bowl of cashew nuts away." Mr. Bhat ended the instance from the book with his favorite quote by Thaler that '*humans do not have the brains of Einstein, nor do they have the self-control of a Buddhist monk*' also stating it to be the root of behavioral economics. The book, according to him, discussed the existence of many biases and tendencies or what is called as rules of thumb in India.

Mr. Bhat's readings led him further towards the works of Kahneman and Twersky in decision making. Terming it as the progress in the opposite order, he expressed being equally struck by their ideas laid out upon apparent anomalies and contradictions in human behavior. He gave detailed examples of few which are highly relevant across all fields of work such as-

a) Transactional utility versus the long-term economic utility where why one end up buying something that he/she doesn't want due to the transactional utility of a deep discount versus the long-term economic utility of that product in their houses itself.

b) The sunk cost fallacy, which each one of us play it out in our lives like desiring something for which we have paid money for despite the fact that it may actually harm us.

c) Endowment effect as a demonstration to loss aversion where one values an object more highly when it is owned as compared to when it is not owned.

d) The confirmation bias where we just want to believe what we believe, and we don't want to believe anything else all of which is even more true in today's divided society where the confirmation bias plays out much stronger in our mind.

e) The bias of hindsight, saying 'oh we knew that', whether we knew it or not is not known as we always think we knew it was good.

f) The ostrich effect where we like to turn away from things which typically, we don't like and bury our noses and heads in the sand adding to these, he put out a word of caution to the managers like himself out there of decision fatigue, that is, taking decisions at the end of a long day when we are fatigued, which can be detrimental.

Mr. Bhat observed that these biases and heuristics are either learnt through a systematic approach or one develops an intuitive feel to them by interacting with the customers, by observing them. He expressed his firm belief that many marketers who have succeeded in India have developed an intuitive feel for these heuristics and biases without actually having read Kahneman, Twersky or Thaler's work. Interestingly, he pointed out how intuitive these biases and heuristics have become in the journey of a brand that many of them are actually named after brands. Highlighting over the IKEA effect, which is the preference of products that one creates him/herself, he brought out how some of these products might be relatively less useful than the readymade products that one could buy from outside, but one develops a strong preference for these and the narrations of the experience of their creation does its round across visitors who come by house. Reflecting on his own marketing career and the brands around he made the reasonable conclusion that much like IKEA a lot of us have unconsciously operated on the principles of behavioral science or heuristics. Perhaps thereafter patted ourselves at the backs for marketing brilliance but actually what we have done is "*delve into these pools of heuristics or the intuitive fairness for the rule of thumb that consumers use to come to a decision*".

Drawing from the real-life examples, Mr. Bhat shared few anecdotes from his time at different brands of Tata group. Beginning with his time in Titan he mentioned about the brand creation of 'Fastrack'. The Fastrack brand happens to be India's largest youth brand including watches, accessories like glasses, bags etc. comprising of young people between the age range of 18-22 years.

Mr. Bhat shared that the Fastrack brand was created on the deep understanding that the appeal to that kind of youth of consumers, it needed something very different from a brand like Titan which was meant for a different target audience. And it was also based on the intuitive understanding that came out of some good market research that "*these late teenagers and college students are very restless. They want to move from one thing or the other by not sticking to one thing for an extended period of time*". Taking from these, the desire to constantly keep moving and demanding novelty in life actually became the core of the Fastrack brand. So, buying line of Fastrack brand that was used for several years became 'move on'. It implied moving on from one watch to the next, moving on from one sunglass to the next, moving on from one friend to the next, moving on from one thing in your life to the next, and so forth. Mr. Bhat stated that because people were so keen on moving on and since his team had a good understanding of that behavior, they created watches that were very bold and unorthodox in their appeal. Similarly other accessories related to the brand were created carrying this same irreverent spirit. But looking back, this was not an entirely rational appeal.

He stated that one could argue that "*that age that is purely rational, from an economist perspective, for those young students to maximize the present value of future earnings by getting*

a good degree and a good job which at one level they were all doing. But also, at another level there was a bandwagon that came into play which said that you want to be as cool as the rest of your generation, you want to be as cool as that rockstar in your campus, or as cool as that young hanger-on actor in your campus. And as behavioral economics points out, there was immediate gratification from the coolness and bandwagon effects, compared to the delayed gratification that would come with a good degree and a good job." Fastrack's appeal made them build their need for the immediate gratification. I believe it was based on our sub intuitive understanding of the bandwagon effects at the way it plays out with these young consumers.

Moving on from that, the journey of brand creation for 'Tata Tea' followed with which Mr. Bhat have been associated for a number of years. He recounted the launch of a variant of Tata tea called 'Tata Tea Gold Care', a brand of tea that comes from tata tea consumer which brings 'goodness in every cup'. Marking out the tea brands outside India having varieties like green tea, scented with or blended with aloe vera, or chamomile tea he stated how these herbs play out to create fruit and herbal teas which have become quite popular across the world. Contrary to these, he outlined how Tata tea created 'Tata Tea Gold Care' using five natural and commonly used ingredients in Indian context, "*all drawn from ancient Indian wisdom and traditions*." The brand used tulsi, ginger, brahmi, cardamom and mulethi calling this the goodness of five natural ingredients. He reasoned behind the big success of the brand due to its offer to the consumers a way to boost health and immunity through ingredients which are deeply embedded in our minds to be naturally healthy. Contrasting it with aloe vera or chamomile, to which an Indian consumer would barely indulge much on it. But if you talk to them about elaichi, or tulsi, or ginger, they will relate to it immediately as this is grandmother's wisdom from our homes. Through this example, Mr. Bhat delineated the significance of tapping into the deep beliefs of consumer's mind similar to what Tata Tea Gold Care brand adopted. He called it a very positive use of the confirmation bias that Prof. Richard Thaler also advocates. The same practice was suggested to be adopted in the Indian context over various deeply embedded beliefs which lie in an Indian mind.

A more recent example traced by Mr. Bhat came from covid-19 pandemic which has people missing going out to the restaurants. At this, he iterated the establishment of a new brand called 'Cumin' from The Taj group of hotels (also part of the tata group). Cumin operated as a cloud kitchen where one could order fine dining meals through an app. Diving deeper into its processing, he explained how they would deliver the meals at the doorstep to provide a fine dining experience within the confines of people's homes. In fact, during Christmas and new year, they even played carol music on your dining tables at home. He explained the Cumin brand being created on the premise that "*All of us care for behavior that prioritizes safety but simultaneously craves indulgence"*. The indulgences were restricted during pandemic as they compromised the safety. 'Cumin' therefore became a big success because it offered safety of health and indulgence together along with a fine dining experience appealing to the senses in terms of its delivery, service along with music recreating a similar fine dining experience on people's dining table.

Adding to business history of Tata groups, Mr. Bhat emphasized on their most pioneering innovations brought to the country over the last 153 years, rooted by a deep and intuitive

understanding of human behavior and behavioral science. Harping back to 1868 when Jamshed Ji Tata founded tata group, Mr. Bhat revisited the establishment of the group's first industrial enterprise in 1870, in the city of Nagpur which was the center of cotton cultivation at that point of time. In stated how "*without any trained workers in that area of Nagpur, the enterprise suffered with severe labor absentees because labor was not well trained and went back to their villages to not have come back for continuous work. Jamshed Ji Tata realize that genuine care for workers will make them more attached to their workplace and as a result will bring down the labor absenteeism. His work was revolutionary at the time where he gave his workers India's first pension scheme which started in the 1870s. He gave them an accident insurance scheme. By 1901, India's first ever provident fund was created at the Empress Mills of Nagpur. We take it for granted today that we get provident funds through our salary slips helping us in retirement. He realized that engaging in generous behavior, and caring for his people, will be reciprocated in their work. He had an annual ceremony where he would distribute 1000 prizes including gold watches. These efforts brought absenteeism down significantly, attendance of workers in Empress Mills was outstanding, his workers were extremely committed, and those mills soon became one of the country's most prosperous enterprises at that time which opened up avenues to invest in Tata Steel, Tata Power and other enterprises including the investments he made to find the Indian Institute of Science in Bangalore. All this was a result of very good understanding of human behavior, keeping the community at the center stage of the enterprise.*"

Even today, the decision of Tata groups to protect jobs during the peak of this crisis and salary cuts at only far more senior levels that at junior levels contributed to a sense of fair play and care which is also one of the founding tenets of behavioral science.

Concluding his speech, he expressed the need to understand the principles of behavioral science in greater detail and build that into the manner in which we craft our offerings as marketer to our consumers and our people. Future of behavioral science is what he concluded, "*questioning where this human behavior and misbehavior will serve the world. Can we misbehave to protect our future? As humans, we will misbehave. We use those heuristics and principles of behavioral science to help people address the biggest trends, the most important problems that we face today and over the next few years. I believe that that is where this fledgling science will deliver those tools. We are still discovering behavioral science in management and the methods in the field as spearheaded by NSE CBS at IIMA will determine its true use. This center will provide a sharper focus on Indian problems of such a vast and heterogenous nation.*"

One area where he concluded behavioral science to help is in "*developing to live better in a digital rich, attention poor age*." Outlining few booming issues such as how to counter loneliness; addictions, thought bubbles which are fast becoming the unfortunate markers of our age and has only worsened with pandemic he emphasized these needing to be worked through as these have the potential to afflict mental health issues in our society in the future. Stating the constraints, tradeoffs, and possible heuristics needing to be addressed to be used in nudging people towards the right behavior in this age to help people make the right decision and preserve and nurture their physical and mental health.

3.2.2 Prof. Vinod Venkatraman

Associate Professor in Marketing,
Director of the Center for Applied Research in Decision Making
Fox School of Business, Temple University

Prof. Venkatraman delivered his keynote speech on the topic 'Print vs Digital advertising' which focused on consumer neuroscience. He began his talk by highlighting the significance of measuring implicit processes in the field of marketing. According to him, more often than not, consumers are unable to articulate the reason for their actions and feelings and therefore, measuring implicit processes help understand these motivations. The findings from these studies also help in improving marketing theories and boost the field of neuro forecasting.

Speaking about his recent research that aimed at evaluating the effectiveness of print and digital advertising, Prof. Venkatraman explained how multichannel advertising is being employed by many companies, but the question is still unanswered whether all marketing channels are equally effective in reaching the consumers and also if these differences also impact the consumer's buying process. Before diving into his study, Prof. Venkatraman introduced few core concepts and also summarized previous literature in the field. He began by explaining the components of the *Buying process of consumers*. The 5-step process starts from a) recognizing the need, followed by b) exposure to a product, c) consolidating information, d) retrieval of the information, and lastly e) the action to purchase the product. While testing this concept, researchers often break the buying process into two phases: one being the exposure phase, while the other is the retrieval phase. He also delineated four concepts of psychology that are frequently used in the field of marketing such as: a) attention, b) arousal, c) memory and d) desirability or action. He stated that within human memory, the advertising functions go through three distinct stages: encoding (storage), retention (consolidation) and retrieval. While testing for these stages of memory, especially focusing on print vs digital channels of advertising, the previous literature is seen to have conflicting results. Dr Venkatraman continued to explain how the projected mechanisms behind the process of recall and recognition are inconclusive in existing literature. Motivated by this question, he spoke about the two studies he conducted wherein he presented the participants with the same message or advertisement in either paper or on-screen format to examine the difference in how people process and retain these messages.

Details of the study:

Study 1 was conducted in two phases:

The *first* being the exposure phase when the participants were shown 40 different marketing stimuli in physical as well as digital formats. During this phase, biometric data like the heart rate and skin conductance, and eye tracking data were collected to capture the moment-to-moment experience of exposure to stimuli. The results of this study pointed towards differences in processing and memory retrieval for the different formats of advertising. Participants processed stimuli in physical format for longer durations than those in the digital format, i.e., findings from the eye-tracking data were

observed to have larger fixation markers for print. Pupil dilation was also found to be higher in print formats. Alongside, the biometric data of the participants was indicative of more arousal and effort for print format. Skin conductance was higher for print media, which was consistent with higher arousal, while the higher frequency heart rate variability pointed towards deeper processing. The key findings from study 1 was that stimuli presented in the physical formats were leading to better memory.

On the other hand, stimuli presented in a digital format were seen to have lesser number of fixation markers, though the participant spent more time on each fixation. The data from the eye tracker also found that people seem to be going in a more systematic way of paying attention to stimuli when it is in a digital format.

The *second* phase of the study comprised of fMRI session where the participants were called a week later from the first phase for a surprise memory test. In the test they were shown old stimuli along with new stimuli and were asked to recognize and report which of them they had seen previously.

The results from the second phase of the study found that encoding differences could be seen in retrieval too. Participants displayed 98%- 99% recognition for both media formats. The team found that print ads were associated with stronger source memory, and people were seen to be quicker and more accurate while identifying the source. Focusing on the fMRI data, the neural activities for encoding of stimuli were seen in the hippocampal and Para hippocampal regions. When testing for the hypothesis of difference in print vs digital channels of stimuli, the left hippocampal and left Para hippocampal place area show difference in activation for the two formats.

Study 2 was designed with a more difficult memory task to tease out the nuances of the difference of print vs digital formats of presentation of stimuli. Participants were shown snippets of advertisements, either a caption, face, or scene from the ad as a stimulus. In the testing phase, they were asked to report if they had previously seen the brand and to identify the brand name. For the analysis, stimuli were categorized as face, scene, and word. It was found that people were seen to correctly categorize the stimuli into face, scene, and word for print ads than for digital ads. Additionally, they were also seen to have significantly higher accuracy for brand recognition when presented in the physical format.

The study conclusively found that format differences are seen to have a significant effect for brand recognition and source recognition.

Dr Venkatraman concluded his address by highlighting the findings of his study that is: *print ads were associated with higher arousal and processing while digital ads were processed shorter but in a more systematic manner. Overall, print advertisements were associated with better long-term memory, both in terms of stronger brand associations and stronger context encoding.* He stated that results from studies like these can find applications in the field of marketing. Practitioners can make use of this information and account for the difference that the various formats bring. He stated it as imperative to test these findings in more natural contexts on account of better generalizability of results.

3.3 BSIM Sessions

The two day event was arranged across a set of a) panel discussions that involved many engaging discussions on issues in the Indian financial markets and services, aiding policy decision making, consumer and investor behavior, management practices and marketing strategies directed by behavioral insights and b) paper presentations by researchers from universities and managers from companies, showcasing the latest behavioral studies in the fields of marketing, economics, finance, and public policy.

3.3.1 Panel Discussions

1. The opening panel of the conference was moderated by Prof Aditya Moses (IIMA), which centered around the topic "Innovation and Technology in Behavioural Science impacting OB and HR". Mr. Deepak Agrawal, CEO, TurboHire and Prof Pankaj Setia, IIMA were the esteemed panelists for the session. Prof Moses steered the discussion by highlighting the change of expectations of millennials in their workplace and jobs and how the innovations in hiring process itself was aiding in effective hiring from a behavioral perspective. The discussion revolved around the applications of behavioral science, via data driven and scientific decision making to increase efficiency and reduce time and effort devoted to the process of hiring. Recruitments driven by neuroscientific and psychometric tools could lead to finding healthier jobs. The panel agreed on the need to strike a balance between protecting individual privacy while simultaneously obtaining information that could help align candidates to organizations. It ended on the note of *"developing new technology to have a more personalized system to match candidate's true potential"*.

2. The second panel of the conference delved into the topic of the "Impact of Mobility in Technology on Consumer Behavior". Mr. Pushkaraj Shenai, CEO, Lakme Lever, Prof. Rama Bijapurkar (IIMA), Prof. Atishi Pradhan (Global Planning Director, Wunderman Thompson/ visiting professor at IIMA) graced the sessions as expert panelists from the field of marketing and mobile marketing. Prof. Subhadip Roy (IIMA) led the session by initiating the discussion on how the design of consumer apps make eminent use of behavioral science. The key highlights of the discussion were that exploring the role of mobility in technology influences consumer behavior involves understanding the context and how consumers process value. Merits of both a priori value processing and online understanding were discussed. The panel members all agreed that nano-segmentation practices are more successful. The discussion ended with Prof Roy quoting that we should *"treat each individual as a market rather than a mass market"*.

3. The third panel at the conference was moderated by Prof. Arvind Sahay, (Chairperson: NSE CBS, IIMA). The panel to this session comprised of esteemed keynote speakers, Prof. Vinod Venkatraman (Fox School of Business at Temple University, USA) and Mr. Harish Bhat, (Brand Custodian at Tata Sons). Prof Sahay chaired the session over the topic of "Behavior and Neuroscience in Marketing". He emphasized to narrow the focus by exploring how and in what form brands are retained in consumer memories. The panelists provided insights from their fields of expertise in academic

research and praxis respectively, giving a holistic view on brands as embedded in our memory and whether they form a part of our conscious or unconscious and exists as more automatic/associative memories. One of the key takeaways was to accelerate the process of embedding a new brand into the unconscious memory. From years of experience in the field of brand development, Mr. Bhat suggested that brands should resonate with the target audience and that an awareness for the same should be high rendering it a degree of uniqueness which ensures higher retention. Prof. Vinod with a more academic purview, indicated that formulating strong emotional links to the brand, repetition of its presence and stories and metaphors are key to making stronger brand associations. The talk concluded on an exploratory discussion around consumer decision making processes and the critical role that memory, emotions and stimuli plays along with combining these inputs. This practice was suggested to contribute to the use of deliberative or automatic processing strategies ultimately leading to the favorable consumer behavior that is observed for a brand/product.

4. The fourth panel of the conference engaged on the topic "Behavioural science in making of public policy". The panel for the session comprised of Prof Shamika Ravi (Brookings Institution India Center) and Prof Jeevant Rampal (IIMA), who are both active researchers in the field of behavioral economics. Prof. Viswanath Pingali (IIMA) moderated the session and initiated the discussion by narrowing down the focus to the ongoing pandemic while discussing how behavioral science measures could be incorporated to guide and increase public conscience. The discussion covered a range of topics, from economic costs of polarization to healthcare insurances and infrastructure. The panel discussed the general attitude and compliance that public often displays to government interventions. The panelists provided insights on grassroot level surveys which evidenced that Indian society understands the need for lockdown and trusts the various credible government sources of information to moderate their actions unlike other countries where public understanding and compliance is hard to find. The discussion also highlighted the need to push for various interventions to increase financial literacy and measures to aid greater uptake of financial instruments. These efforts could help form a more sustainable model of health insurances and subsequently better healthcare structures for the country. The panelists emphasized on the need to work closely with grassroot level governments, local NGOs and institutions to check the effectiveness of the various interventions. These combined efforts would help choose the best intervention for the community. Additionally, they highlighted how incorporating feedback for the policies and interventions employed by the government, through large scale surveys, would help check for real-time effectiveness of the measures at play.

5. The discussions ended with a fifth panel that delved into the topic of "Market cycles and Investor Behavior" and explored various facets and impacts of market cycles on behavior of the investors. The panel comprised of Ms. Radhika Gupta (CEO, Edelweiss Asset Management Ltd.), Mr. Nisarg Trivedi (Middle East Sales Director, Schroders Investment Management) and Dr. Tirthankar Patnaik (Chief Economist, National Stock Exchange of India Ltd) and moderated by Prof. Joshy Jacob (IIMA). The session started with Ms. Radhika Gupta presenting pertinent insights into the

"Bubbles, Behavior and Biases" of retail investors, elaborating on the biases such as herding, overconfidence, return recency anchoring, the formation of bubbles due to misconstrued investor expectations. She emphasized on the need for better communication in order to better navigate the bad investment choices due to these faulty expectations. Mr. Nisarg Trivedi with his years of expertise in sales, provided further insights of how building narratives is highly effective in persuading smarter investment decisions. To this, Dr. Patnaik added there being "no substitute for learning and information" and indicating institutions to rather build focus on the same. The panel deliberated on the boons and banes of growing fintech on investor behavior. It was concluded that while the wide resources available aided informed decisions, the constant and opinion-based feedback might be more detrimental in the long term. The panel agreed that the way to direct better investor behavior is to use solution-oriented approaches, using narratives and technology as a tool whilst maintaining the human touch.

Web access: https://www.iima.ac.in/web/areas-and-centres/research-centres/nse-centre-for-behavioral-science-in-finance-economics-and-marketing/inaugural-and-panel-discussions

3.3.2 Academic Research Presentations

1. *Cognitive flexibility strategies enhance work engagement and individual innovation among corporate employees:* The study aimed to explore how enhanced cognitive flexibility impacts work engagement and individual innovativeness. Cognitive flexibility (CF) is an aspect of Behavioural Science which is the person's capacity to adapt their strategies to new environments. Work Engagement (WE) and Individual Innovativeness (II) are aspects of Organizational Development (OD). Work engagement is the capacity of a person to bring themselves fully at work and individual innovativeness is the capacity of implementation of new ideas. The study evidenced that CF enhances WE and II. The study suggested for a link that can hence be established between WE and II. Participants reportedly could relate these activities and their significance in their work area. It was also evidenced that gender differences exist in CF, WE and II (ancillary observation). The study implicated upon a) studying gender, age, academic and departmental differences; b) developing company and/or department specific interventions; c) Different sectors being chosen for intervention as part of future research.

2. *Does the Grateful Emotion Satisfice?:* We try to arrive at a rational decision in all the choices of our life. In this process, one may exhaust all the options or restrict the alternatives and arrive at a 'satisficing' decision. Our emotions play a crucial role in this process of evaluating and choosing the suitable alternative, though they may not be rational. Experimental studies on gratitude show that it has its own bias in decision making. The influence of gratitude on the evaluation of the alternatives was explored in this study by studying the post-graduate students' decision-making process at a private university in India. We found that gratitude does not influence 'maximizing tendency.' The results have been discussed, followed by the directions

of future research. The role of emotion in decision making has been widely studied (Bubić, & Erceg, 2018; Lerner, Li, Valdesolo, & Kassam, 2015; George, & Dane, 2016). Though gratitude's influence on decision making has been examined in the context of pro-social and risk preference, its role on maximizing vs. satisficing has not been explored. The current study explored whether 'gratitude' as a positive emotion, will act as an anecdote to the 'maximizing' tendency. The null hypothesis in the study was accepted which indicated that gratitude does not influence the maximizing tendency of the individual. The limitations of the study throw light on the future direction of research wherein a) constructing and validating a questionnaire that estimates the grateful feeling would be a suitable measure; b) future studies are suggested to customize the gratitude intervention relating to maximization to give rise to a grateful feeling related to the 'maximization tendency' only; c) Exploring the different facets of gratitude were suggested as another extension to future research. Eliciting gratitude towards own skill and monitoring the self-esteem, accomplishments were some exemplars.

3. *The Effect of Organizational Performance on the Investment Decision Making of Investors:* Organizational environment represents not only many visible characteristics such as layout of corporate headquarter, office design and employee attire but also values, norms, hypotheses, ceremonies, rituals, customs, stories, myths, symbols, attitude, communication, and behavior of employees that shape, but also the relationship with stakeholders and disclosure of pertinent issues related to governance and sustainability. In this context founders, managers, and employees have a significant impact on the building of organizational environment while exogenous factors also have a certain impact on the process. As organizational performance is widely influenced by both endogenous and exogeneous factors of every organization, it is very likely to influence the investors decision making. Models and approaches developed related to the concept of organization performance as well as existence of numerous criteria, making it difficult to evaluate the performance of an organization. The study used variables of organization environment to understand their influence on variables of Organization performance. It further explored the effect of organization performance on investment decision making of investors. The study observed that organizational performance variables like financial performance, achievement of strategic goal, sales growth & market share and stakeholder satisfaction significantly influence the investment decision making of investors.

   The research finding highlights that there is significant difference in the perception of respondents regarding Organization environment, Organization performance and Investment decision making. It was found that there exists strong to moderate and positive correlation between the variable of organization environment and organization performance. The study stated with assertion that a firm's Leadership can steer the firm in the right direction. The interpretations highlighted that intent and belief can help in shaping policies and practices. Since every major policy or initiative is shaped by the will of the top management, hence if the leadership lays emphasis on development and growth of employees, maintaining an open communication climate, displays empathy towards their challenges, devices employee friendly

measure and involves employees in decision making, it can help to augment employee productivity and create better corporate image too. Similarly laying emphasis on market dimensions like the need of customers, quality of products and service, communication and building good relationship with customers, optimal pricing and promotion can help the organization to improve sales. Taking care of environmental sustainability measures, ethical practices in production and people management assists organization to improve stakeholder satisfaction and increase sales and reputation too. Conscientious and consistent efforts to interact, communicate, take all stakeholders on board are fruitful for enhancing the organizational performance. To counter and adapt to unpredictable situations in the external environment, it is necessary for Leadership, people and processes to be flexible to accommodate the changing needs. It was further found in the research that there exists a positive relationship between various factors of organization performance and investment decision making. An organizations financial factors, sales and market share, extent of stakeholder satisfaction, plays credible roles in shaping the perception of the retail investors to invest in its stocks. However, it is found that investors are vigilant about the past trend of stocks, try to find out information regarding the companies from various sources like annual report, their peers, websites, stock market, newspapers and also stock brokerage firms before deciding to invest. The research brought out the fact that there is tremendous effect of organizational performance on investment decision making of retail investors.

4. *Enhancement of Emotional Intelligence of Employees to Mitigate Employee Alienation in Indian Higher Education Institutions:* Higher Education Institutions (HEIs) are often exposed to rapid changes and reforms through the National Education Policies leading to increased challenges and work stress on their employees. The study aimed at identifying the key factors to enhance Emotional Intelligence (EI) of employees and mitigate Employee Alienation (EA) in Indian HEIs. EA is an endemic factor causing organizational dysfunction. Extensive research shows that employees with higher EI levels can effectively manage their emotions to deal with and overcome challenging situations in their professional life. Results identified key factors pertaining to EI and EA in HEIs and the specific constructs that influence EI and EA apart from the extensively discussed parameters in the literature. In light of the data, the significance of EI of employees and its influence on the development of EA in HEIs was understood. The study revealed that most of the respondents were above average in their EI level. A medium-level alienation and an inverse relationship between EI and EA were also found among the respondents. This result is consistent with numerous literatures on the EI and EA study variables. In the extant literature, EI was described as one of the most critical factors that help in job satisfaction, job commitment, job performance, organizational citizenship behavior, productivity, efficiency and help succeed in this contemporary competitive world (Kannaiah and Cook. 2015). The medium-level alienation in HEIs has resulted from lack of autonomy employees experience in the organization, lack of acknowledgement received for the work, and the perception that their work does not contribute much to the whole system, as analyzed in the result. The study implicated on providing a line of sight to guide employees in enhancing their EI and address their EA behavior

in Indian HEIs by focusing on the significant EI factors of employees derived from the study. The impact of employee EI on EA in HEIs was analyzed by identifying the underpinning issues like employees' perception of Powerlessness, Meaninglessness, Self-estrangement, Lack of Motivation, Income etc. This was stated to lead to a sustainable performance of HEIs under any unfavorable conditions and enables HEIs to connect with their stakeholders (Students, Parents and Employees).

EA was stated as not a suitable phenomenon in any organization which has to identify the root cause of the development of EA and prepare the employees to be emotionally strong to adjust any negative work contexts, new reforms and challenges that often arise in HEIs. It was suggested that HEIs further refine their policies and process to influence their employees' participation in various activities by providing more autonomy in their work, acknowledging and rewarding their work etc. This aimed to achieve an increase in employees' job involvement and commitment, and they would work hard as if it is their own business thereby leading to the sustainable performance of HEIs under any unfavorable conditions. At the employer level, suggestions were made for them to understand their employees' emotions to empathize, communicate, and lead through challenging times accurately. Besides these, providing employees with continuous learning, mentoring, coaching, and counselling on emotional self-awareness and self-assessment, emotional self-control, optimism, empathy, motivation, consideration etc., would help them in enhancing their EI and not getting victimized to alienation, thereby, increasing work efficiency.

5. *How positive behavior of key stakeholders contributes in delivering business value in agile software development environments?:* The research unveils that the positive behavior of key stakeholders contributes in delivering business value in agile software development environments by displaying courage, understanding and embracing agility and improving collaboration. The findings of this study were interpreted in terms of the positive behavioral traits that helps leadership, product owners, scrum masters and agile team members to re-align, show the nerve, understand, and embrace the true agility to deliver intended business value to the end user of the products. Broadly translated, the findings indicated that by adopting the positive behavior, key stakeholders support the organizational goal of delivering better quality software products in agile development environments. Future research in this area might extend the explanations of positive behavior and value delivery in the agile software organizations across the world or extend the current research in other industries such as banking and financial services and manufacturing.

   The managerial implications for all the key stakeholders were summarized in the study. The theme 'displaying courage' pointed out that leaders should come out openly to stop the mis-leading behavior, open to feedback from the junior staff, product owners and scrum masters should also raise their concerns against any behavior that is anti-agile and impacts the value delivery to the customer in any negative way. Suggestions were also made for key stakeholders to integrate agility in their behavior, day to day work and decision making. This would ensure that all of them are aligned and working towards the common purpose of value delivery to

the end customer of the software. It was further implicated that stakeholder should remove any silos and resolve any dependencies that occur in day-to-day business. Key stakeholder could improve collaboration by aligning their understanding of the software requirements, agile execution model, expectations from each stakeholder and committing on handling unknown information and pathways in an agile way. Finally, all the key stakeholders are required to understand agile in its true sense, follow the principles, values of agile and scrum model (in case they follow scrum framework), shift from fixed to growth mindset and apply the metrics for the right intent of identifying and improving agility in mindset, behaviors and on the ground.

6. *Role of Culture in Hiring Decisions in Organizations:* This study provides a close examination of the role of organizational culture in shaping hiring decisions in organizations. The study addresses the gap that exists in current literature pertaining to the cultural characteristics in Indian organizations and how this shape the dynamics and outcomes of hiring decisions. Hence an interpretive approach was applied in the current study involving the usage of open-ended in-depth interviews, and thematic analysis to code and develop themes to respond to the research questions. Primary research findings highlighted the requirement for concrete organizational interventions to minimize bias in hiring decisions based on culture. While hiring for culture fit, the dangers of falling into the path of exclusion rather than inclusion were highlighted. The study contributes to the existing literature on organizational culture and hiring in organizations highlighting the requirement for concrete procedures and practices to minimize bias in hiring decisions and promoting a unanimous perception of culture fitment in hiring where it acts as a catalyst for promoting inclusion in organizations. The study emphasized upon exploring and understanding of what the cultural elements are and how they would shape the dynamics of the hiring processes and their consequences in Indian organizations. This was stated to enable effective and efficient decision making, facilitating promotion of diversity and inclusion, and ensuring the right person at the right place and at the right time. These findings and research considerations were suggested to be utilized to further guide future research and inform practice on how organizations can engage with culture fitment.

7. *Fear of Missing out (FOMO) Guerrilla Marketing Strategy: A Case Study of Ed-tech Platform WhiteHat Jr.:* The marketing strategy is a mixture of psychological tactics and inducements. The current research discussed a case study by following the journey of educational-technology start-up WhiteHat Jr., a coding platform for children of the age 6-14. This case study explored the reasons behind its expeditious rise, its acquisition to Byju's and its eventual advertisement ban by the Advertising Standard Council of India (ASCI). The advertisements strive not to inform parents about the pervasiveness and importance of coding but to induce the fear of missing out on an opportunity for the children by tending to the internal hesitancy. Since the parents tend to limit their losses of their child not being able to the next name in the tech world, this marketing strategy has been proved to be useful. WhiteHat Jr.'s key marketing strategy included evoking a sense of 'missing out' on an event in the mind of the consumer. The start-up quickly managed to create a niche amongst

the software professionals and later expanded multi-fold in Indian households. The findings of the case study reveal that this type of marketing pressurizes the average consumer household into enrolling in the program by inducing fear in their mind. The anticipated losses from not enrolling in the program usually are the success of neighbors' children and the lost opportunity that their child wouldn't be the next tech wiz. The current study analyzed this Fear of Missing Out (FOMO) marketing from a brand's point of view using a case study approach. Although FOMO marketing helped make WhiteHat Jr. a household name, the brand image still suffers because of the use of this marketing strategy. As far as FOMO marketing is found useful in communicating a radical idea, it eventually is self-destructive, as the young start-up's reputation was adversely affected, and management along with the CEO apologized publicly and condemned using this aggressive strategy in the first place (Bhattacharya, 2021). The current study aimed at analyzing fear-induced behavioral tactics as a marketing choice by delving into advertisements that aimed at pressurizing the average consumer into enrolling in a coding platform. Prospect theory was used to explain the backdrop of such decisions undertaken by consumers/ parents. For the consumers, the anticipated loss from not enrolling their children in the coding platform looms heavily while making the decision. The anticipated losses are usually the success of the neighbor's children, that is, the lost opportunity for their own child to be the next tech wiz. The findings of the paper concluded that capturing long-term brand loyalty and gaining organic users via FOMO marketing is unsustainable as it clouds the judgement of the parent while making a rational decision. Once the decision and the effect of the decision are rationalized, it is relieved that the consumer has realized the marketing gimmick aimed at inducing fear in them. The study revealed that, although from a marketing gimmick, FOMO makes this choice of branding unsustainable in the long run by hampering brand image. The case study stated this strategy to be helpful only in the short-run and not so in the long run. Not only does it lead to litigations and bans, but it also hampers the brand image that it builds on fear. In times when social media platforms are heavily used to express opinions, FOMO marketing was found to become a ticking time bomb.

8. *Contemporary trends in communication for the financial services marketing:* India's financial services sector demonstrates the progress and opportunity of its economy. However, Financial services offer challenges to the marketers in communication owing to intangibility, complexity of the nature of the service product etc. Life insurance, mutual funds appeal to various socio-economic classes and play prominent role in the family life cycle. In India, the promotion of life insurance, Mutual fund and investment in equity markets etc. has come long way. Scare to sell approach initially adopted by Life insurance organizations, was shifted to the celebration of life to the fullest expression (Here ko Kya Patha Tera Umar Kya Hai) by SBI for promotion of pension plans. Mutual funds thrived on the power of compounding interest (coined by Einstein as eight wonder of world) and reached the mass segment with "Mutual Fund Sahi Hai" campaign. Sadvertising was used by Thai life insurance, IDFC used One Idiot film as branded content, blogs and articles are used a means for native content. The Fintech companies also further

expanded the investor market by providing much needed ease and convenience and also providing information symmetry. The current study attempted to analyze the select advertisement campaigns interface with new media using FCB Model.

The study also assessed investment options, new media and advertisement appeal preferences using conjoint analysis and its linkage with Neuromarketing which aims to "hit on subconscious biases that traditional advertising methods, such as focus groups, fail to uncover" (Quartz cited in Singer, 2004). Neuromarketing uses brain-scanning technology—such as MRIs and electroencephalography (EEG)—to observe how people's brains respond to a specific ad appeal (prominently rational or emotional or mix), type of investment alternative, media platforms (social media, blogs, live streaming). Marketers take the results of the scans and use them to create marketing promotion plans which investors find more appealing or motivating. The possible role of several brain mechanisms in the processing of marketing stimuli were emphasized as well as obstacles were needed to be explored. The study concluded that Marketing communication plays key role in promotion of financial services. Given the new medium and risk appetite of the millennials, the most preferred options and combinations obtained using Conjoint analysis can be used as platforms for investor education and investment options. As such, suggestions were made for organizations to be very creative in delivering advertising messages that foster Millennial's investors thinking and feeling, and act on it.

9. *Examining the role of consumer hope in the context of relationship marketing for a digital payment app:* A close review of digital payments shows that previous research has seldom examined consumer hope and relationship marketing in digital payments. However, retaining customers and facilitating their continued purchase is crucial for digital payment space. Thus, the current study empirically examined an integrated model that explains a digital payment app. The study empirically explored the relationship among digital quality, perceived social value, consumer hope, trust, commitment, and word of mouth using relationship marketing and affect theory of social exchange in digital payment app. The framework was tested using partial least square structural equation modeling technique using smart pls. The results indicated several significant relationships: digital quality and perceived social value affect consumer hope significantly; consumer hope partially mediates the relationships between digital quality and perceived social value with trust and commitment. Commitment partially mediates the relationship between trust and word of mouth. The study added significantly to relationship marketing and Affect theory of social exchange.

   While the study was conducted with methodological rigor, the findings were interpreted with caution and suggestions were made for future research wherein: 1) the study can be conducted in payment space itself. The current study was conducted in India, where digital payment app. is growing rapidly but at the same time, it offers enormous potential. 2) Future research could be explored with different constructs. 3) The use of a cross-section sample was stated as a potential limitation in arriving generalizability of the results to other settings or consumer groups. Future

research is suggested to cover experimental study and longitudinal analysis. 4) The current study utilized a partial payment transaction, future studies were suggested to cover other activities such as the effects of digital app design factors that were not experienced by participants (Kapoor and Vij, 2018). Thus, future research could replicate this study in afield setting and cover actual digital transactions. Future studies were suggested to be designed in a manner so that the pre purchase as well as post-purchase attributes both can be examined.

10. *Tax evasion and Altruism:* The study builds on the Allingham and Sandmo (1972) model of income tax evasion but departs from the existing literature by assuming altruistic preferences. The study built a model that captures the relationship between tax evasion and altruism. It was found that altruism may either control the evasive tendencies among taxpayers or may instigate the same. The nature of the outcome depends on the interrelationship between altruism, the audit probability, and the penalty rate. The study questioned the efficacy of an external punishment by bringing in the insights from behavioral economics. It further extended to address the trade-off between tax evasion and tax avoidance and show how the associated moral costs significantly influence an individual taxpayer's decisions pertaining to both the tax evasion as well as avoidance.

    The propositions in the study highlighted the significance of altruism in decision making process of a representative taxpayer and also showed how the amount of evasion as well as the monetary cost of punishment changes with respect to altruism. The study also put forth us a counter intuitive result of higher evasion coupled with higher levels of altruism. This was purportedly termed as the crowding out phenomenon of the intrinsic motivation by external penalty. The last two propositions addressed the evasion-avoidance trade-off and its relationship with the moral costs. It was proposed to explore in future research to consider a dynamic framework to check for the consistency of this static model or to further explore if it brings about new and valuable changes in the model.

11. *From the Central Bank to the Monetary Policy Committee:* Has the communication effectiveness improved? For central banks to manage long-term interest rates, they must effectively use communication to manage the expectations of the market participants. Central banks need to share their assessment of the macro-economic scenarios, expected developments, their strategy to address these macroeconomic shifts, and their policy tilt for the forthcoming monetary policy. Central bank communication has been extensively studied in developed countries, but only limited work has been done in emerging economies. Hence, the implementation of the Indian Monetary Policy Committee (MPC) in October 2016 with the inflation-targeting mandate, presents an opportunity to study the effectiveness of the communication for 3.5 years before and after the implementation. The current study examined whether the implementation of MPC has enhanced the effectiveness of central bank communication. Further, the recent developments in text-mining techniques were used to gauge the comparative effectiveness of the documents in the Pre and Post periods of the MPC implementation. Based on the extant literature,

the current study studied the effectiveness based on clarity and predictiveness of central bank communication. Readability as a measure of the clarity of the central bank communication has shown that the number of years of education required to understand the documents has dropped by 1.8 years based on Flesch-Kincaid's grade level. Similar results are also found with Gunning's FOG-scores. The automated content analysis shows that the corpus of documents for every policy announcement has a predictive component for the subsequent policy rate change. The study hence infers that the effectiveness of the central bank communication has improved post-implementation of the MPC.

Additionally, the study establishes the predictive power of the content of central bank communication in India. The study also brings forth the efforts exercised by the central bank to improve across the various aspects of transparency, simplifying communication across all types of documents, introducing regularity in the policy announcements, reducing length of the documents for all types of documents other than Reports. The length of the Reports has been substantially enhanced as it increases emphasis on factors that impact inflation and policies. Thus, the study showed that a late implementor of MPC and inflation-targeting with new committee members, with constraints of data like the absence of a credible employment tracker, can achieve the effectiveness of central bank communication without having to go through an elongated learning curve. Based on the inference that the text of the documents of the MPC has the predictability of the subsequent Repo rate change, there is a potential for the MPC to provide a more explicit forward guidance on the interest rates in the future, which will further aid the predictability of the interest rates for the market participants. Further, the study establishes that the text mining model on Automatic Content Analysis that had been evolved for the Swedish Riksbank is as effective in a country like India. Thus, the study has learnings for other emerging countries that would also like to implement MPC and inflation targeting. The limitation of the study was that the direct impact on the volatility of markets was not studied which also is another aspect of the effectiveness of central bank communication. The same has been studied in developed countries and there is an opportunity to do further work in this direction to check the impact on the volatility of markets in an emerging market. Conclusively, the current research empirically established that the implementation of MPC in India has enhanced the effectiveness of central bank communication. The research has focused on the clarity and predictability of communication.

12. *Effect of Herding & Over confidence in sustainable Financial Markets:* The study was presented as an endeavor to explore the impact of various "behavioral biases on the decision making" exercise of individual and institutional investors. A study of various psychological biases and their impact on investment decision is important first to avoid those mistakes and secondly to take advantage of those overconfidence and herding biases inflicting individual investors and relationship managers. It is concluded that both of these biases are significant for investment decision making and these biases are repeatedly visiting and afflicting the financial markets. The findings were discussed as relevant to a) Individual investor: To have them avoid these widely pervasive cognitive mistakes, more especially the prominent behavioral

biases by gaining an understanding of these common biases and their impact on the financial decisions; b) Institutional Investors: The study refuted the a -prior beliefs institutional investors are better placed in their decision making because they are not biased. These observations were aimed at alarming the individual investors who seek guidance from the institutional investors for their investments. Institutional investors too could benefit by guarding themselves against these behavioral biases and improve their performance in their relationship with common investors; c) Regulatory bodies: Various regulatory bodies can help investors avoid the financial losses by putting in place some strong regulatory measures to check the behavioral biased attitude. The current study suggested that stock exchange regulatory bodies build in strong firewalls or circuit filters when the markets get swayed in sentiments during highly bullish or bearish scenarios and at the time of news/announcement done by government authorities. d) Educational Bodies: The study aimed to serve academic bodies to explore more upon understanding the behavioral biases as crucial for investors or community at large. The significance of teaching behavioral finance was advocated with greater attention to cognitive mistakes to help improve the quality of decisions of future managers and investors.

13. *Impact of covid-19 on financial planning: a comparison between males & females:* Due to COVID-19, there is impact on the financial planning of the people in number of ways. The study analyzed and discussed the impact of COVID-19 on financial planning of people and compared the viewpoint of males and females towards the impact of COVID-19 on financial planning. It evidenced at average individuals to have withdrawn their savings and that their view in the current pandemic has shifted towards holding on to the cash more than investing during the pandemic. Most of the respondents thought that they must opt for a personal loan to meet high-priority expenses. The study recommends creation of an emergency fund comprising of at least 6 months of the expenses. Suggestions to invest in liquid instruments like RDs or SIPs were made to combat COVID-19 pandemic like situations better by redirect individuals to better budgeting and planning.

14. *Effect of price ranges on individual and institutional ownership?* The study estimated the effect of various price ranges (low to high) on individual and institutional ownership. IPOs and Stock splits provide a natural experiment to estimate the impact of prices ranges (low to high) on ownership structure in the equity market. The current study estimated the effect of various IPO offer prices ranging (low to high); level of promotor holding in the primary market; reduction of market prices (post-split prices) in the secondary market on individual and institutional investors. The key findings were the presence of anchoring bias for lower market prices both in the primary and secondary equity market. Individual investors were found to increase ownership at lower levels of lower IPO issue price and lower post-split market price. It was concluded that companies having lower level of promotor holding tends to target prices to have higher ownership among individual investors. Companies target desired ownership structure both in the primary and secondary market.

Web access: https://www.iima.ac.in/web/areas-and-centres/research-centres/nse-centre-for-behavioral-science-in-finance-economics-and-marketing/research-papers

Esteemed guests and panelists of BSIM Conference-2021

Virtual Inauguration with Prof. Errol D'Souza (Director, IIMA) and
Prof. Arvind Sahay (Chairperson, NSE CBS, IIMA)

Virtual Panel discussion | From left screen: Prof. Arvind Sahay

From right screen: Mr. Pushkaraj Shenai (top left), Prof. Subhadip Roy (top right side), Prof. Atishi Pradhan (bottom left), Prof. Rama Bijapurkar (bottom right)

Virtual Panel discussion I From right Screen: Ms. Radhika Gupta (top left), Prof. Joshy Jacob (top right), Mr. Nisarg Trivedi (bottom left), Mr. Trithankar Patnaik (bottom right)

From left to right: Mr. Sudheesh Nambiath, Ms. Divya Reji, Ms. Anushka Oza, Prof. Arvind Sahay

NSE Centre for Behavioral Science Research Team

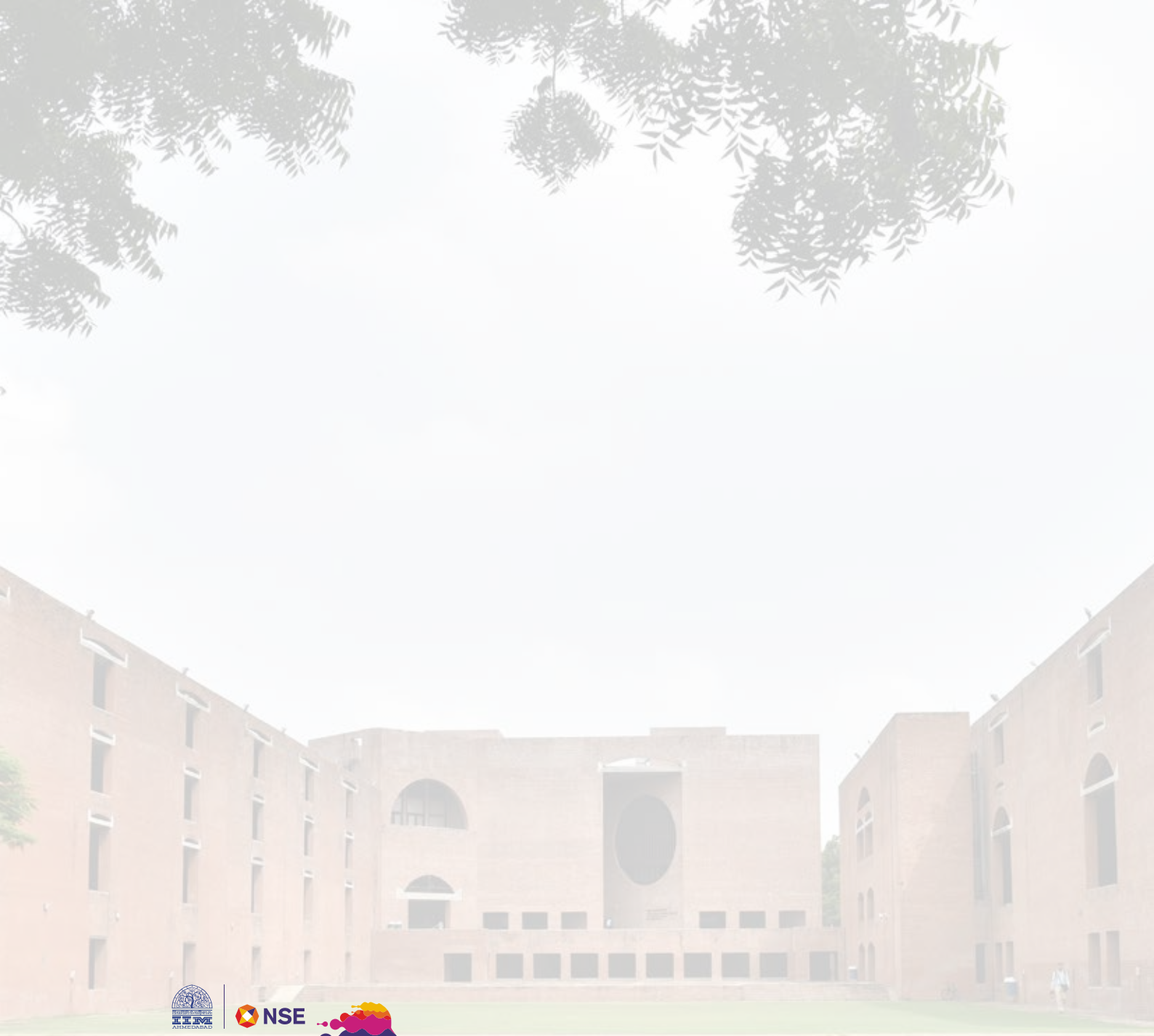
Richa Nigam
Research Fellow/Behavioral
Lab In charge
PhD, Cognitive Neuroscience

Anushka Oza
Research Associate
MSc Cognitive Science

Pradeep K Prakash
Research Associate
MSc Computational Science &
Engineering

Mayank Prakash
Research Associate
M.Sc. Economics

Divya Reji
Research Associate
MSc Cognitive Science



Centre for
Behavioral Science

Prof. Arvind Sahay, Chairperson NSE CBS
Email: chr-cbs@iima.ac.in

Ms. Richa Nigam, Research Fellow/ Behavioral Lab In charge
Email: resfellow-bll@iima.ac.in

NSE CENTRE FOR BEHAVIORAL SCIENCE
Indian Institute of Management Ahmedabad
New Campus, Vastrapur, Ahmedabad 380015, Gujarat, India
Telephone: +91 79 7152-4910 | **Email:** resfellow-bll@iima.ac.in
Website: https://www.iima.ac.in/web/areas-and-centres/research-centres/nse-centre-for-behavioral-science-in-finance-economics-and-marketing/

Funded by National Stock Exchange of India Ltd.