IIMA

विद्याविनियोगाद्विकासः

NSE

Centre for
Behavioral Science

C O N T E N T S

Dear Readers,

Greetings from the NSE Centre for Behavioral Science, IIMA!

As we enter FY 2024, the NSE Centre for Behavioral Science at the Indian Institute of Management, Ahmedabad (IIMA) completes three years of operations. The purpose of the centre is to conduct cutting edge topical research in behavioral science and neuroscience across areas of finance, economics, marketing and organizational behavior; and to be able to evangelize the research process that uses insights from how the brain functions amongst academics, industry and policy makers. After some initial teething issues with the operations of the equipment, the centre is now gaining traction and is becoming known nationwide as the main—if not only—centre for research and excellence in this part of the world in a management institution that is attempting to work at the intersection of academia and industry with cutting edge research that does both, advance theory and is application-oriented so that it is useful for industry and government.

During FY22-23, the Centre's activities spanned teaching, research, dissemination, and industry engagement. PGP and PGPX students of the Neuroscience and Consumer Behavior class and the Behavioral Finance class at IIMA, were able to do mini projects as part of their coursework that utilized the facilities at the lab that is a part of the centre. The centre also worked with Ph.D. students and research associates on research projects that are described in more detail later in this report. Some of the research was presented at the centre's BSIM conference and others are in the review process at other outlets.

The NSE CBS was also able to begin two new projects for industry that will create some ground breaking research work and provide insights in the area of developing metrics for out of home advertising and in being able to choose the right interventions for rolling out employee engagement initiatives in a leading utilities firm. We are quite excited about this application in industry and look forward to more such engagements that serve the cause for both, research and industry output.

This year, the Behavioral Science in Management Conference (BSIM 2023) held by the NSE CBS saw more than 500 paper/abstract submissions from India and abroad out of which 27 were selected for presentation. The quality of the research presented at the conference was top notch and I think quite a few of the papers that were presented will end up in leading journals. This was a great opportunity for researchers to share their work with peers and to discover and engage with like-minded peers. Presentations by leading users of eye-tracking and EEG at the conference along with workshops were in line with our efforts to create an ecosystem of researchers that understand and are able to use these tools for improving their research in the broader area of behavioral science applications. The conference also attracted participation from industry and policy makers—something that we hope to expand in the future.

During the year, we also had the first offering of an Executive Education Program on the Applications of Behavioral Science for CXOs using Behavioral Science. We would like to use this mode to also expand our scope of connect with companies that helps both research and industry engagement.

All in all, as Chairperson, I felt enthused by the increase in the scale, scope and quality of activities. We are excited about the coming year as we seek to expand the footprint and scale of activities. We welcomed new research associates, Dhruvisha Dave, Veda Poduval and Eshita Sharma along with a new Centre Coordinator, Varuna M. Joshi. We will also be bidding farewell to research associates, Muskan Jindal and Kunal Aspatamb who move on to do their Ph.D. A key requirement for the Centre now to be able to install an fMRI machine that will complete the ensemble of tools for research.

Dr. Arvind Sahay
Chairperson, NSE Centre for Behavioral Science
chr-cbs@iima.ac.in

MANAGERIAL AND POLICY IMPLICATIONS

Since the mid-1990s, research in neuroscience has risen exponentially. We now have a deeper insight into which part of the brain does what and how activities in different parts of the brain combine to lead to a particular behavior in response to stimuli. This has been possible because tools have been advancing over the years and can unearth deep-rooted behavioral patterns and biases; and we are beginning to map brain activity to behavior. For example, activation of the Nucleus Accumbens is indicative of anticipation of a gain; activity in the Insula is indicative of a change in risk perception and activity in the anterior cingulate cortex is reflective of conflict and its resolution. Weak brand choice—over a stronger brand, for example—requires conflict resolution and shows up as an increase in activity in the Anterior Cingulate Cortex. And so, a key implication for firms that are selling weaker brands is that their stimuli needs to manage this conflict resolution process in the mind of the customer.

Therefore, with appropriate use of tools like eye tracker, GSR, EEG and other to be acquired tools, we are now able to understand the underlying drivers of behavior and very importantly, what stimuli lead to what kind of brain activation. From our knowledge of neuroscience and behavioral psychology, we can, therefore, now design and test the potential efficacy of managerial interventions and policy actions with results that are arguably more accurate than self-reports; we know that data from self-reports is mediated through cognition, and so what is intended consciously may not always happen because we also now know that many actions use the unconscious activity patterns of our brain and can have a significant influence on our decisions and actions. A recent study by a researcher from INSEAD suggests that fMRI-based data collected from 50 customers led to a buyer behavior prediction model that provided a 27% higher accuracy than large scale data from more than a hundred thousand customers over a 12-month period.

Insights from such research could shed new light on our understanding and help shape policies and managerial interventions that could spread the benefits to firms across industries and lead to better policy implementation with a wider section of the population. With academic rigor and experimental-based research, the CBS aims to produce meaningful decision-making insights that could benefit industry leaders and policy makers in drawing fresh perspectives and outlooks. A key here is that interventions using the neuro approach can frequently be a nudge, or in the words of Isaac Asimov, a Ph.D. in bio-chemistry and leading science fiction author, "the minimum necessary change that would be more cost effective than large scale interventions."

Leading MNCs and many governments are already using neuroscience-based inputs for managerial decision-making and policy development and research. We hope that the NSE CBS at the Indian Institute of Management, Ahmedabad becomes a major contributor to this stream of activity.
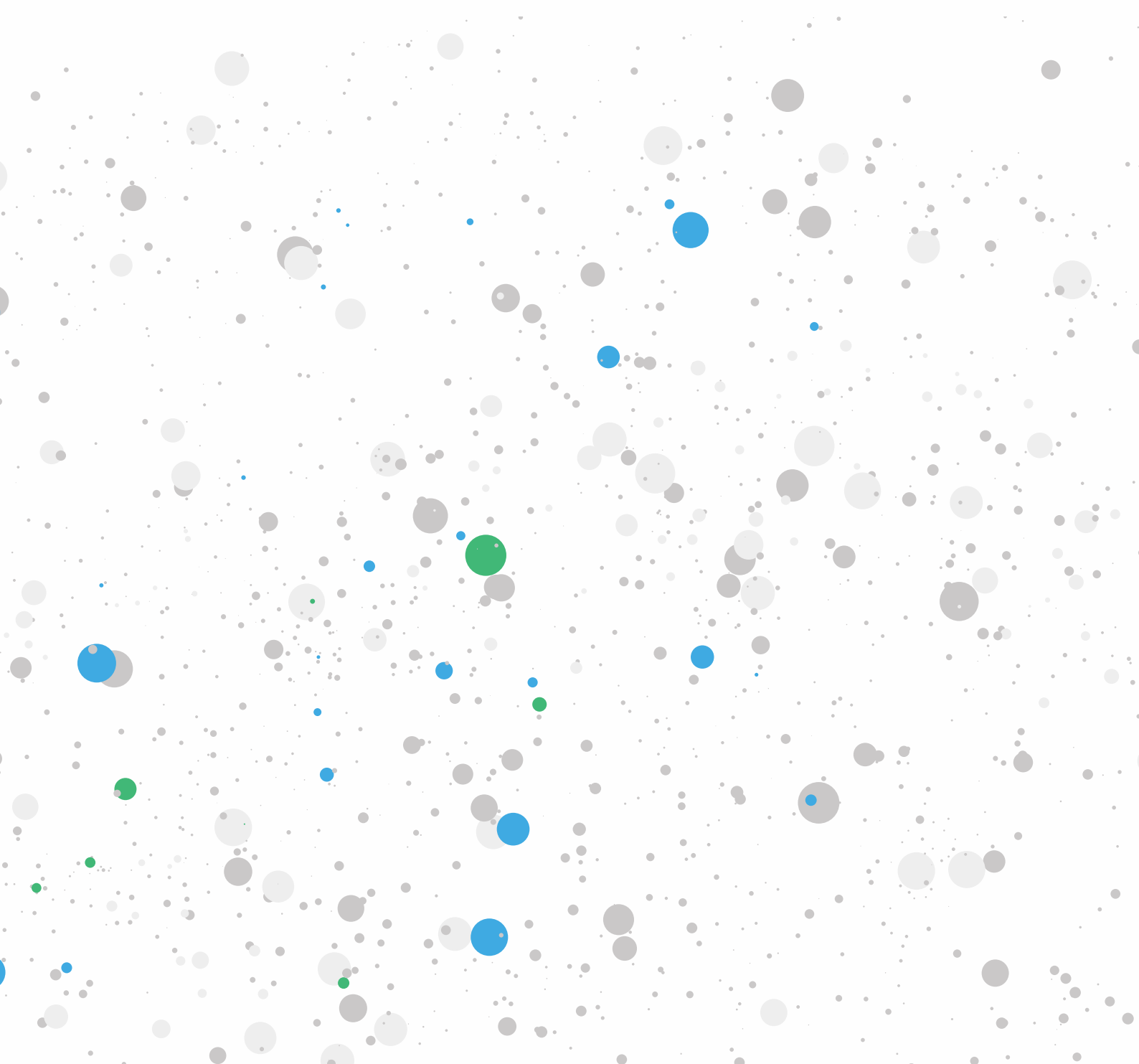
LEADERSHIP

The Executive Council consists of 08 faculty members from the Institute while the Governing Council consists of 06 members whose affiliations include IIM, Ahmedabad, the National Stock Exchange of India and INSEAD, Paris.

Centre for Behavioral Science

NSE CBS EXECUTIVE COUNCIL

Dr. Arvind Sahay
Chairperson
NSE Centre for
Behavioral Science, IIMA

Prof. Arvind Sahay is Professor of Marketing & International Business at IIMA. As Chairperson, Dr. Sahay heads the NSE Centre for Behavioral Science in Finance, Marketing & Economics and the India Gold Policy Centre at IIM, Ahmedabad. An alumnus of IIM-Ahmedabad and IIT-Kanpur, Prof. Sahay holds a Ph.D. from the University of Texas at Austin and has taught for eight years at the London Business School.

Dr. Sahay's primary areas of interest include marketing strategy, pricing, neuroscience and consumer behavior, brand management, and international trade and investment. Prof. Sahay has authored 33 international peer-reviewed articles, 65 cases, and over 50 articles for business magazines and newspapers. He is the recipient of the University-Wide Outstanding Dissertation Award from the University of Texas at Austin, the Innovation in Teaching Award from London Business School, and UTV Bloomberg's Best Marketing Professor in India.

With over four years of experience at IIM-Ahmedabad, Prof. Moses holds a Ph.D. in Organizational Behavior and Human Resource Management with a minor in Strategy from IIM-Bangalore. He also holds an M.Sc. in International Human Resource Management from the University of Portsmouth in England and a B.E. in Electronics and Telecommunication from the University of Mumbai.

Aditya is interested in studying people science, strategic human resource management, and knowledge management. His substantive areas of interest include people analytics, high-performance organizations, organizational learning, innovation, and learning and development. Besides having to his credit several publications in leading international journals, Prof. Moses has also presented papers at national and international conferences.

Dr. Aditya Moses
Assistant Professor
Human Resource
Management Area, IIMA

With over four years of experience at IIM-Ahmedabad, Dr. Rajat Sharma holds a Ph.D. in Marketing from IIM-Bangalore and a Post Graduate Degree in Mathematics from the University of Jammu. Dr. Sharma's key research interests include the analysis of the marketing consequences of the Internet and digital media on industries and markets. Rajat has an expertise in the application of analytics in business, with specific emphasis to digital marketing, retailing and e-commerce. He has used many statistical tools in his research including SPSS, LISREL, SmartPLS, Excel and R. Prof. Sharma is also assisting numerous startups in their digital and analytical needs.

Dr. Rajat Sharma
Associate Professor
Marketing Area,
IIMA

Rajat has presented papers in several international conferences and his work has been published across several international journals including International Journal of Hospitality Management, Journal of Sustainable Tourism, Journal of Business Research, Journal of Consumer Marketing, etc. Rajat is currently teaching courses on Consumer Behaviour and Digital Marketing. He has also worked on research projects with various ministries, including Ministry of Consumer Affairs, Ministry of Rural Development and Ministry of Railways.

Dr. Rampal holds a Ph.D. in Economics from the Ohio State University. With over six years of experience at IIMA, Prof. Jeevant's research, teaching, and consulting interests span across behavioural and experimental economics, game theory, mechanism design, gender economics, industrial organization, development economics, and agricultural economics. Besides several publications, Dr. Rampal's interviews have also appeared across several popular Indian and International media platforms including The Hindu BusinessLine, The Times of India, and BBC UK Radio. Jeevant is also an occasional playwright, a poet, an ex-pro swimmer, and a member of the Ohio State University Club Tennis A-Team.

Dr. Jeevant Rampal
Associate Professor
Economics Area, IIMA

Dr. Joshy Jacob
Associate Professor
Finance and
Accounting Area, IIMA

Dr. Jacob holds a Ph.D. in Finance from IIM, Lucknow and has over eight years of experience in the Finance & Accounting Area at IIM, Ahmedabad. Prof. Jacob's research and teaching interests include the fields of empirical asset pricing, corporate finance, and behavioral finance. Prof. Joshy is the recipient of the Bharti Foundation Fellowship Award for, 'Outstanding Ph.D. Student' at IIM, Lucknow. Dr. Jacob is a member of the Financial Management Association and a Core Committee Member of JAAF India Symposium. Prof. Joshy is also on the Editorial Board of the Indian Journal of Accounting Research. Apart from his typical area of research, Prof. Jacob also studies the life of plants and trees.

Prof. Singh holds a Ph.D. in Finance from the University of Illinois at Urbana Champaign and an MBA from IIM-Calcutta. His areas of research include corporate finance, corporate governance, law and finance.

Dr. Pranav Singh
Assistant Professor
Finance and Accounting Area,
IIMA

Dr. Subhadip Roy
Associate Professor
Marketing Area, IIMA

Prof. Roy holds a Ph.D. from the ICFAI University in Dehradun and a Masters of Business Management (MBM) from the University of Calcutta. With over four years of experience at IIM, Ahmedabad, Dr. Roy's key research areas include celebrity endorsements, brand management, advertising, social media advertising and branding. Subhadip previously worked in the capacity of Associate Professor at IIM, Udaipur and as a Faculty Member in the Marketing & Strategy Area at IBS, Hyderabad.

With over 12 years of experience at IIM, Ahmedabad, Prof. Pingali holds a Ph.D. & M.A. in Economics from Northwestern University and an M.S in Quantative Economics from the Indian Statistical Institute in Calcutta. Prof. Pingali's key areas of research include applied game theory, industrial organization, pharmaceuticals, behavioural economics, and regulatory economics. He has undertaken several consulting projects including the Economic Impact Assessment of Tata Nano (2014). Presently, Dr. Pingali is working on the Impact Assessment of ONGC's CSR Spending. n 2019, Prof. Pingali was awarded the SRK Distinguished PGPX Faculty Award.

Dr. Vishwanath Pingali
Associate Professor
Economics Area, IIMA

Centre for Behavioral Science

NSE CBS GOVERNING COUNCIL

Dr. Arvind Sahay
Chairperson
NSE Centre for
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Dr. Joshy Jacob
Associate Professor
Finance and
Accounting Area, IIMA

Dr. Vishwanath Pingali
Associate Professor
Economics Area, IIMA

With over 12 years of experience at IIM, Ahmedabad, Prof. Pingali holds a Ph.D. & MA in Economics from Northwestern University and an M.S in Quantative Economics from the Indian Statistical Institute in Calcutta. Prof. Pingali's key areas of research include applied game theory, industrial organization, pharmaceuticals, behavioural economics, and regulatory economics. He has undertaken several consulting projects including the Economic Impact Assessment of Tata Nano (2014). Presently, Dr. Pingali is working on the Impact Assessment of ONGC's CSR Spending. In 2019, Prof. Pingali is also the recipient of the SRK Distinguished PGPX Faculty Award.

Dr. Tirthankar Patnaik holds a Ph.D. from the IGIDR, Mumbai, where his area of research was high-frequency finance and market microstructure. Tirthankar also holds an M.Sc. in Statistics, and a B.Sc. in Mathematics from the University of Madras.

Dr. Patnaik has over two decades of experience in the Indian capital markets, academic research, credit research in macro and sector strategy, quantitative finance, and consumer banking. Tirthankar began his career as a researcher at the Indira Gandhi Institute of Development Research (IGIDR) and worked on several academic and corporate projects in econometrics and quantitative finance, followed by a stint in consumer banking analytics as an analyst with the Global Consumer Group of Citibank in India and Europe. Dr. Patnaik's next focus area was equity strategy for institutional clients, initially with Citigroup Global Markets as India equity strategist, and then with Religare Capital Markets Ltd, as the India Strategist and Chief Economist. In his last assignment before joining NSE, Tirthankar was the Chief Strategist and Head of Research for India, at Japan-based Mizuho Bank.

Dr. Tirthankar Patnaik
Chief Economist
National Stock Exchange
of India

Somasundaram K.S.
Chief Enterprise Risk Officer
National Stock Exchange
of India

K.S. Somasundaram is currently the Chief Enterprise Risk Officer at the National Stock Exchange of India. He holds a management degree specialising in Finance from IIM Bangalore and a Chemical Engineering Bachelor's degree from BITS Pilani. He has over 20 years of work experience in the banking industry and has worked extensively in the areas of Enterprise Risk Management, Market Risk, Operational Risk, Portfolio Analytics, Early Warning, Risk Modelling, Basel III, migration to Ind AS and advanced approaches.

Hilke Plassmann is INSEAD's Octapharma Chaired Professor of Decision Neuroscience and Associate Professor of Marketing at INSEAD. She is a Principal Investigator in the Social Affective Neuroscience Team at the Brain and Spine Institute (ICM) of Sorbonne University. She holds a PhD in Marketing and Neuroscience from the University of Münster´s School of Business and Economics, and then was a postdoctoral scholar at Stanford University and the California Institute of Technology. Hilke is one of the pioneers in the nascent field of decision and consumer neuroscience. Her primary research areas are consumer decision-making and its strategic marketing implications at the intersection of neuroscience, psychology, and economics.

Hilke's research has appeared in leading academic journals such as the Proceedings of the National Academy of Sciences of the USA, Journal of Marketing Research, Journal of Consumer Research, Journal of Consumer Psychology and Journal of Neuroscience. Her work has received international newspaper, radio, and TV coverage by, among others, CNN, ABC News, Fox News, Arte, Galileo, National Public Radio, The New York Times, The Economist, The New Yorker, Science Magazine, Scientific American, Harvard Business Review, Focus, Spiegel, and Absatzwirtschaft. Hilke has written several award-winning cases and has worked with several large companies and start-ups.
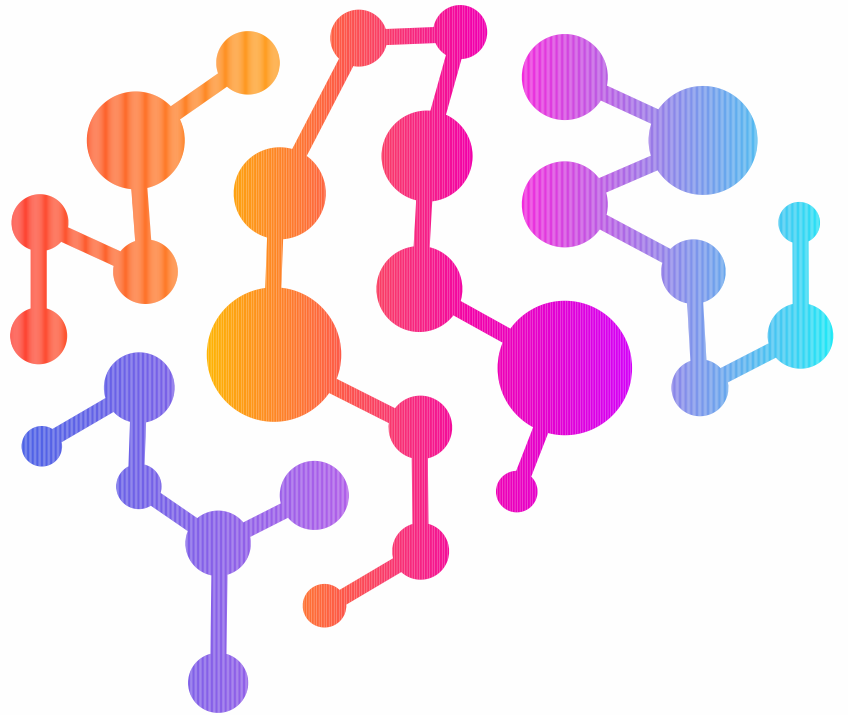
Dr. Hilke Plassmann
Associate Professor
Marketing Area
INSEAD, Paris
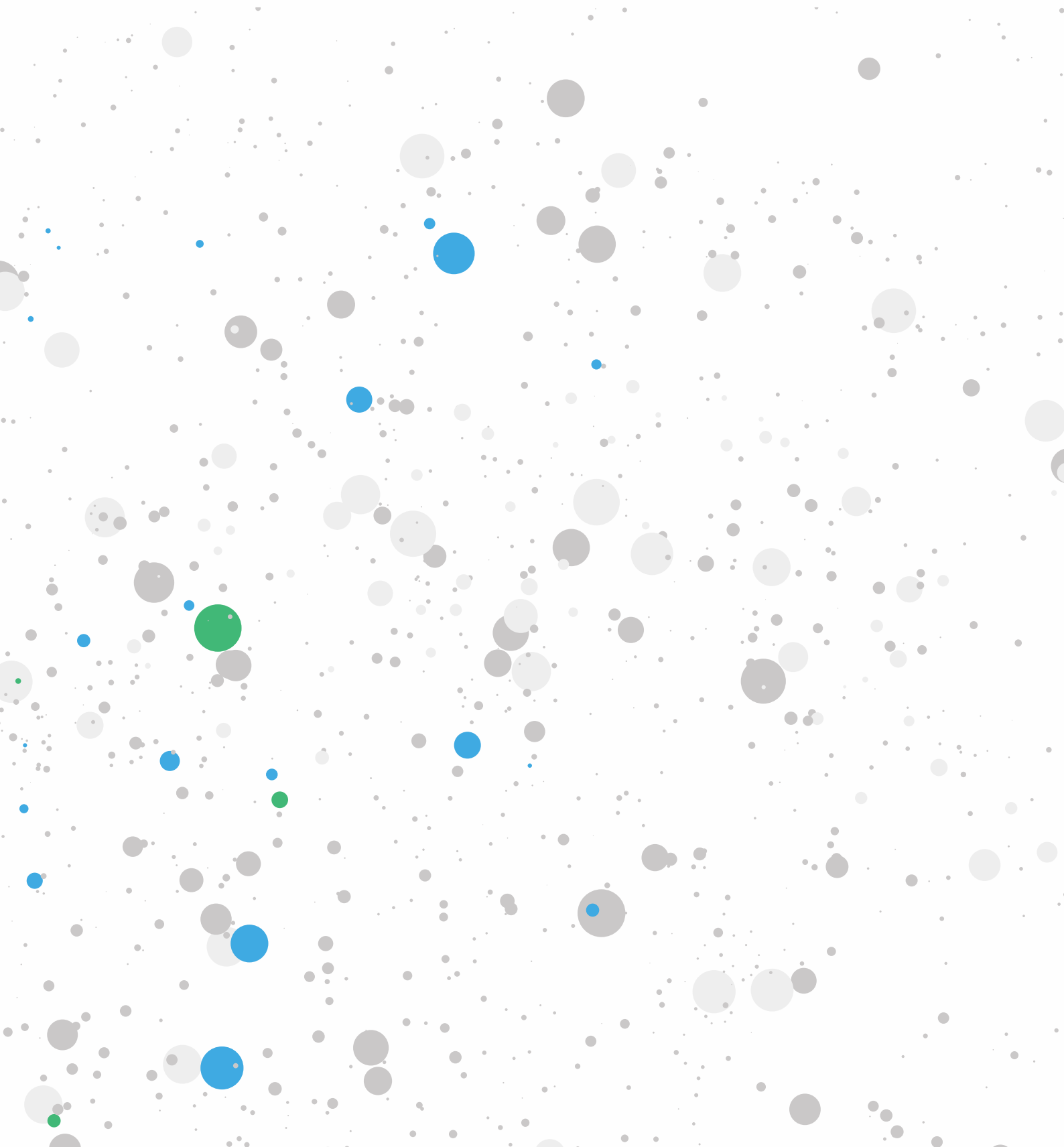
FACES AT NSE CBS

Varuna M. Joshi
Centre Coordinator

Varuna has over ten years of professional experience. Previously, she was working as Research Associate, Case & Report Writing at IIM Ahmedabad. Varuna began her journey with IIM-Ahmedabad in 2012 as Editorial Associate of 'Alumnus', the Tri-Annual Magazine for IIMA's alumni now referred to as 'The WIMWIAN'. Varuna holds a B.A. in Psychology & English Literature, an M.A. in English Literature and a certificate in Journalism from St. Xavier's College, Ahmedabad. Varuna can be reached at coordinator-nsecbs@iima.ac.in.

Yash has seven years of academic and industrial experience. He is passionate about applied neuroscience research and enjoys sports in his spare time. Yash has an M.Tech in Cognitive Neuroscience from the Centre for Converging Technologies, University of Rajasthan. He is currently employed as a research manager at IIM, Ahmedabad where he is responsible for assisting the execution of investigations. Yash's expertise lies in various neuro-modalities including Eye-tracker, fMRI, fNIRS & EEG Signal Processing. He possesses working knowledge of AI tools and assists NSE CBS in providing exceptional services. Yash can be reached at yashc@iima.ac.in.

Yash Chakarvarthy
Research Manager

Kunal Aspatamb
Research Associate

Kunal holds an M.Sc in Behavioural and Economic Science from the University of Warwick, UK. He is interested in leveraging Behavioral Insights for Policy Designs. Kunal has been working on topics related to Behavioral Finance and is in the process of learning the EEG and Eye Tracker Modalities at the NSE CBS laboratory. He is also working on how changes in the user interface of an e-commerce website lead to an endowment effect. At CBS, Kunal has explored other topics such as Institutional factors affecting Civil Servants' Decision Making. He aspires to pursue a Ph.D. in Behavioral Public Policy. Kunal can be reached at kunala@iima.ac.in.

Centre for Behavioral Science

Muskan holds a Bachelor's Degree in Botany (Hon.) from Ramjas College, University of Delhi and an M.Sc in Cognitive Science from the Centre of Behavioural and Cognitive Science, University of Allahabad. Her area of interest is Cognitive Control and how emotional and stressful events influence memory and self-control processes. Muskan is currently working on an industry project related to the change in value creation due to the interaction/relationship between the client and the business development manager. In another project, Muskan is exploring the user interface of an e-commerce website and its attentional correlates using the eye-tracker. Muskan can be reached at muskanj@iima.ac.in.

Muskan Jindal
Research Associate

Dhruvisha Dave
Research Associate

Dhruvisha is an RCI registered Rehabilitation Psychologist. She holds a BA in Psychology from St. Xavier's College, Ahmedabad, a Post Graduate Diploma in Rehabilitation Psychology (PGDRP) from B. M. Institute of Mental Health, Ahmedabad and an M.Sc. in Neuropsychology from National Forensic Sciences University (NFSU), Gandhinagar. Dhruvisha has a keen interest in Organizational Behavior, Human Resource and Marketing. Currently, she is working on a project related to evaluation of employee engagement pillars. Another project is about developing brain-based metrics for evaluating the value add of an outdoor advertisement. Dhruvisha can be reached at dhruvishad@iima.ac.in.

Veda holds a Master's Degree in Behavioural Economics from the University of Nottingham and a Bachelor's Degree in Commerce from Stella Maris College, Chennai. She joined the NSE CBS in March 2023 after working in the Investment Banking Division at Goldman Sachs as a Senior Analyst for 3+ years. Her research interests lie in the application of behavioral science concepts including behavioural architecture, behavioural design and experimental economics. Veda can be reached at vedap@iima.ac.in.

Veda Poduval
Research Associate
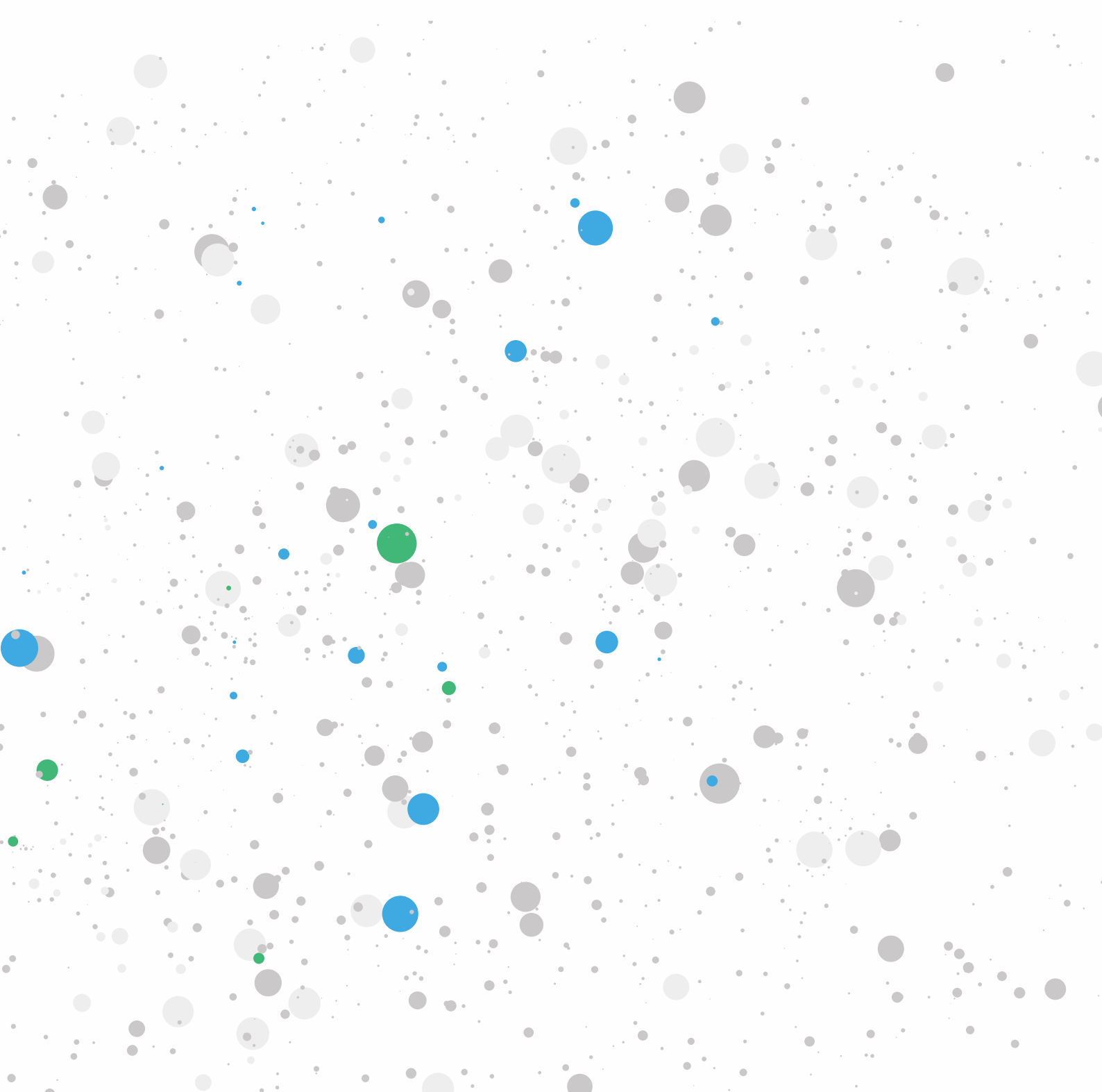
WHO WE ARE

The NSE Centre for Behavioral Science was inaugurated on December 19, 2019 at the Indian Institute of Management, Ahmedabad with a grant from the National Stock Exchange of India Ltd. The first of its kind in a management institution in India, the NSE CBS aims to build a cross-disciplinary platform for conducting and disseminating research grounded i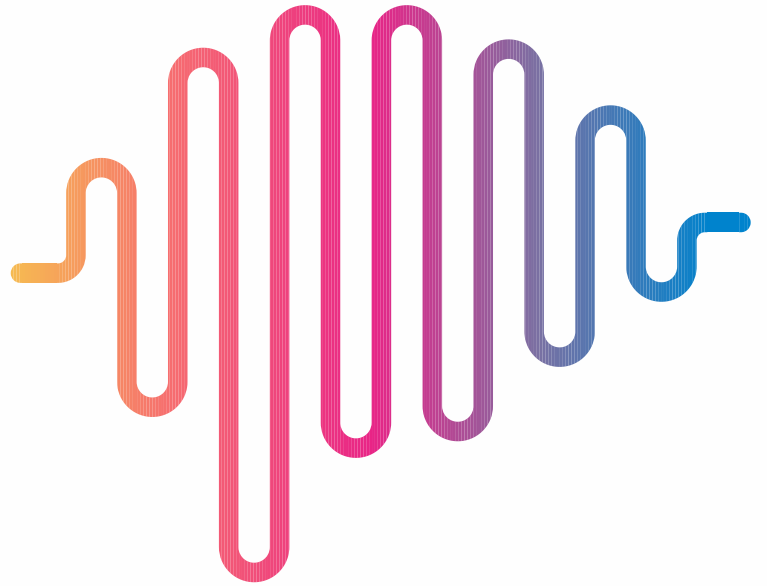n neuroscientific and behavioral knowledge across diverse fields of management including but not limited to finance, economics, marketing, organizational behavior and human resource management.

Behavioral science tools have been advancing over the years and could unearth deep-rooted behavioral patterns and biases. Insights from such research could shed new light on our understanding and help shape policies that could spread the benefits to a wider section of the population. With academic rigor and experimental-based research, the NSE CBS aims to produce meaningful decision-making insights that could benefit industry leaders and policy makers in drawing fresh perspectives and outlooks.

With the NSE CBS, the Institute aims to lead the way with applied research to improve management practices across sectors of finance, health, public policy, marketing, economics, organizational behavior and human resource management as well as making path-breaking contributions to academia in these areas. The centre would like to engage in rigorous but relevant research and looks to connect with interested researchers in academia and practitioners in industry.

The NSE CBS is equipped with an EEG system, Eye Tracker, and Galvanic Skin Response (GSR). The laboratory is designed to explore the applicability of behavioral science theories in marketing, finance, and economics for generating and disseminating ideas around these themes.

EEG Laboratory

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

Electroencephalography (EEG) is an 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 marketing fields to understand consumer behavior while in finance, it is used to examine the differential effects of factors like risk and emotion while taking financial decisions. In economics, it has been used to experimentally examine concepts associated with behavioral economics.

Eye-Tracking Laboratory

The NSE Centre for Behavioral Science 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.

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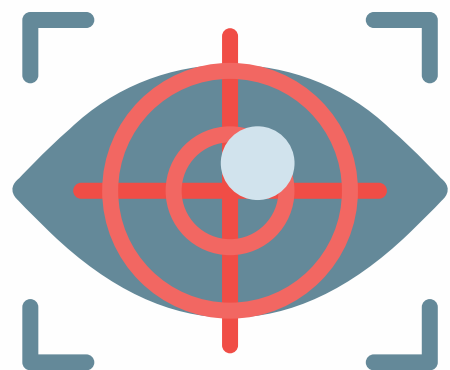
Eye tracking data is insightful in understanding attention and engagement of an individual in real time while one interacts with a stimulus. Results from the gaze plots and fixation durations can help assess the elements the audience engages with and the one they ignore. Recent research examines behavioral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

Additional Equipment

The laboratory has four high end workstations each equipped with E-Prime 3.0 software aiding in psychophysical and behavioral experiments. The latest E-Prime software makes it ideal for new learners as well as advanced users to collect behavioral responses like reaction times (RTs) and accuracy data with precise timings. A 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.

180+
Total Participants

26
Median Age

27%
Female

72%
Male

0.5%
Non-Binary

63%
EEG Modality

13%
Screen Based Eye
Tracker Modality

23%
Simultaneous EEG-Eyetracker
Modality

16+
Number of
Lab Visits

TIMELINE OF EVENTS

2019
December
Inauguration

2020
October
EEG System, Eye Tracker & Galvanic Skin Response System

1st Behavioral Science in Management Conference (BSIM 2021)
2021
April

2021
September
Webinar: Scaling Choice Architecture Interventions in Business and Policy

2022
January
Webinar: Expectation or Exception: Examining the Effect of Norms in Social Dilemmas on Moral Self-Image and Behavioral Spillovers

2022
January
Webinar: High-Stakes Failures of Backward Induction: Evidence from the Price is Right

2022
April
Webinar: Predicting Retail Sales with fMRI, Attitudes, Incentivized Purchases, and Market Data

2022
March
Second Behavioral Science in Management Conference (BSIM 2022)

2022
October
Webinar: Regulatory Reforms in Mutual Funds: Impact on Investor Behavior

Centre for
Behavioral Science

2022

December

Webinar:
Branding Based on Behavioral Research has a Distinct Advantage

2023

January

Seminar:
How can Textiles Contribute to a $ 5 Trillion Economy: Behavioral & Policy Dimensions

2023

February

Webinar:
Doing Reputation: Creating Value for Business

2023

March

Webinar:
Systematic Long-only Momentum Strategy in Financial Markets: Evidence from India

2023

January

Webinar:
Policy Uncertainty and Its Impact on Foreign Firms

2023

April

Third Behavioral Science in Management Conference (BSIM 2023)

WEBINARS & INDUSTRY TALKS

Since its inception, the NSE Centre for Behavioral Science has conducted nine webinars of which five were conducted in FY 2023. The centre also conducted its first hybrid industry talk in January 2023. The NSE CBS is proud to announce to its readers that the centre has hosted 16 speakers from diverse backgrounds since its inception.

Centre for Behavioral Science

Webinar | September 14, 2021

Scaling Choice Architecture Interventions in Business and Policy

Prof. Arvind Sahay | Professor, Marketing Area, IIMA
Prof. Dilip Soman | BEAR Rotman School of Management, University of Toronto

Webinar | January 17, 2021

Expectation or Exception: Examining the Effect of Norms in Social Dilemmas on 06 Moral Self-image and Behavioral Spillovers

Prof. Arvind Sahay | Professor, Marketing Area, IIMA
Fatima Koaik | Behavioral Scientist at eMBeD, World Bank

Webinar | January 27, 2021

High-Stakes Failures of Backward Induction: Evidence from The Price Is Right

Prof. Arvind Sahay | Professor, Marketing Area, IIMA
Dr. Bouke Klein Teeselink | Post-Doctoral Researcher, Yale School of Management

Webinar | April 15, 2022

Predicting Retail Sales with fMRI, Attitudes, Incentivized purchases, and Market Data

Prof. Arvind Sahay | Professor, Marketing Area, IIMA
Prof. Hilke Plassmann | Associate Professor, Marketing Area, INSEAD
INSEAD's Octapharma Chaired Professor of Decision Neuroscience

Webinar | October 31, 2022

Regulatory Reforms in Mutual Funds: Impact on Investor Behavior

Prof. Joshy Jacob | Associate Professor, Finance & Accounting Area, IIMA
Marzban Irani | Chief Investment Officer, Debt Funds, LIC Mutual Funds
Dr. Tirthankar Patnaik | Chief Economist, National Stock Exchange of India, Ltd.
Rajesh Krishnamoorthy | Independent Director -
AMC PGIM India Asset Management Pvt. Ltd.

Webinar | December 13, 2022

Branding Based on Behavioral Research has a Distinct Advantage

S. Subramanyeswar | Chief Strategy Officer-Asia Pacific & Head of
Global Planning Council, MullenLowe Group
Arjit Sengupta | Chief Marketing & Communication Officer (CMCO) at the
National Stock Exchange of India

Industry Talk | January 6, 2023

How can Textiles Contribute to a $ 5 Trillion Economy: Behavioral & Policy Dimensions

Puneet Lalbhai | Executive Director, Arvind Limited
Subhash Chandra Baheria | Hon. Member of Parliament, Bhilwara

Webinar | January 12, 2023

Policy Uncertainty and Its Impact on Foreign Firms

Prof. Vishwanath Pingali | Associate Professor, Economics Area, IIMA
Akhilesh Tilotia | Head of Research and Chief of Staff to the CEO,
National Investment and Infrastructure Fund (NIIF)

Webinar | February 15, 2023

Doing Reputation: Creating Value for Business

Prof. Asha Kaul | Professor, Communications Area, IIMA
Munavar Attari | Managing Director, Fleishman Hillard, India
Dr. Biswajit Roy | Director General, Gujarat Energy Research and
Management Institute, Gandhinagar

Webinar | March 16, 2023

Systematic Long-only Momentum Strategy in Financial Markets: Evidence From India

Prof. Arvind Sahay | Professor, Marketing Area, IIMA
Prof. Rajan Raju | Director, Invespar Pte. Ltd, Visiting Faculty at IIMA
Harish Krishnan | Senior Fund Manager, Kotak Mutual Fund,
Long Only India Specialist

Regulatory Reforms in Mutual Funds: Impact on Investor Behavior

October 31, 2022

Dr. Tirthankar Patnaik is the Chief Economist at the National Stock Exchange of India with over two decades of experience in the Indian capital markets, academic research, credit research in macro and sector strategy, quantitative finance, and consumer banking. Marzban Irani is the Chief Investment Officer – Debt Funds at LIC Mutual Funds. He has been with funds since 2016, has a long career in the asset management industry and has worked with Tata Asset Management. Rajesh Krishnamoorthy is an Independent Director-AMC at PGIM India Asset Management Pvt. Ltd. Prof. Joshy Jacob is an Associate Professor in the Finance and Accounting Area at IIMA

There are a few factors that must be considered in order to comprehend the regulatory reforms in mutual funds and their effect on investor behavior. In this webinar, Prof. Joshy Jacob discussed the effect of the risk-o-meter on investor behavior. The color code scheme was implemented from July 01, 2013 wherein it was mandated to use colors to ensure that people are aware about the risks. However, there were limited colors and the prints were in greyscale and hence, it was not particularly effective at cautioning investors against the danger involved.

The risk-o-meter was introduced on July 01, 2015. Instead of three colors, five different risk categories were introduced i.e., low, moderately low, moderate, moderately high and high. The risk is shown wherever the needle stops. Thus, brown color was split into high and moderately high categories. This resulted in more precise and obvious risk labelling. It was discovered that employing the risk-o-meter regime resulted in lower investment in high-risk funds whereas using the color code regime increased investment in high-risk funds. Investors could then distinguish between funds that previously fell into the same category because this helped them comprehend the risk associated.

Marzban Irani talked about the October 01, 2021 implementation of, 'Skin in the Game.' The goal was to better ensure accountability by balancing the interests of Asset Management Firms (AMCs) Key Employees and mutual fund scheme unitholders. SITG investing, mandated by the Securities and Exchange Board of India (SEBI) for Designated Employees (DEs) of AMCs — C-class executives, fund managers, compliance officers, etc.— completed its first year in September 2022. As a result of this decision, these workers were required to invest 20% of their gross pay in mutual fund (MF) schemes that fall under their direct supervision or administration. These units are locked in for a period of three years and subject to claw-back in case of violation of the model code of conduct prescribed by AMCs and AMFI (Association of mutual funds in India).

Dr. Tirthankar Patnaik spoke on the subject of benchmarking. In India, SEBI mandated the declaration of a benchmark index by fund firms in 2012 in accordance with the regulatory rules it had put in place. Setting the appropriate baseline for performance assessment is essential for streamlining mutual fund investments. There are several ways to calculate an index's returns, but the two most popular ones are the Price Return Index (PRI) and the Total Return Index (TRI). According to SEBI, using PRI to gauge the success of mutual fund schemes might be deceptive because it does not give investors a full picture. SEBI instructed investment houses to solely utilize TRI to benchmark schemes in January 2018. Unequal comparisons were caused by many benchmarks. Despite the uniformity of scheme classification introduced by the regulator in 2018, a CRISIL review of significant equity and debt-oriented schemes revealed that dispersion has persisted in terms of benchmarking by funds within a category. The benchmarking rules for the two-tiered structure were established by SEBI in October 2021 and went into effect on January 01, 2022, with the goal of standardizing and bringing uniformity to the benchmarks of the MF schemes.

> **"** *It was discovered that employing the risk-o-meter regime resulted in lower investment in high-risk funds whereas using the color code regime increased investment in high-risk funds.* **"**

The panellists concluded the discussion by agreeing upon the fact that categorization learning, grouping schema, and bucketing are crucial. Although it may not be enough, the risk-o-meter is a positive step. A risk-o-meter deals with anchoring, recency bias, cognitive error, etc and in choosing investments, there are many cognitive biases at play. One does not always develop one's skills in the same way when it comes to processing and scaling up that knowledge. There are more marketplaces in India and yet, there is a noticeable difference in the ability to evaluate the information coming from these markets.

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Branding Based on Behavioral Research has a Distinct Advantage
December 13, 2022

S. Subramanyeswar is the Group CEO at MullenLowe Lintas Group and Chief Strategy Officer of Asia Pacific & Head of the Global Planning Council of MullenLowe group. He has been awarded the 'South Asia Planner of the Year' twice by Campaign magazine and has won over 142 awards. With over 28 years of industry experience in marketing and corporate communications, Arjit Sengupta is the Chief Marketing & Communication Officer (CMCO) at the National Stock Exchange of India. Prof. Arvind Sahay is a Professor of Marketing & International Business and the Chairperson of the NSE Centre for Behavioral Science at IIMA. Prof. Sahay is also the author of, 'Brands & the Brain' published by Penguin Random House in 2022.

The panellists on this webinar talk about different behavioral biases and how the brain behaves while performing these biases, particularly in the context of brand evaluation. Previous literature suggests that the human brain tends to conserve energy and shuts off when there is something deep and more informative to process. In such cases, the brain uses heuristics, also known as mental shortcuts, to make a given choice or decision. The three most common behavioral biases are representativeness, availability, and anchoring biases. For instance, a quick look at an electric sport bike will trigger a set of biases that run parallelly in the mind. An attempt is made to correlate the present images with an existing image of the bike in the mind. Similarly, how easily it is available or can be recalled will also ease the process of choosing one brand or product over another.

Panellists also drew the audience's attention towards the other side of the story which focuses on how brands are changing themselves to make a place in the consumer's brain. How can a brand connect with its consumers more effectively? In the last decade or so, more emphasis has been placed on the beliefs for which a brand stands than on its catchy proposition. Brands have evolved as consumers' perspectives toward the market have changed. Brands represent the human faces of the company and to further strengthen this stance, brands are now more about culture than the market. Many strategies have been adopted to promote unique selling propositions, like emotional selling, brand selling, and finally the holistic selling proposition. Panellists also talked about the idea of consumer behavior in the context of a stock exchange. i.e., the journey of encouraging all age groups and professions to invest.

After the pandemic subsided in 2021, there was a drastic shift in the method of trading. Most trading occurred online, either through the screen or various applications, which in turn increased the reach of investors. The marketing strategy that is followed by the Exchange is called, "Moment Marketing", which broadly targets breaking stereotypes. The role of household women as investors is also considerably significant. The campaign was run to encourage people to invest consciously and with valid information.

> " *The three most common behavioral biases are representativeness, availability, and anchoring biases.* "

The webinar concluded with the panellists coming to a mutual consensus where in one case the brand is engaging with the consumer, and in other cases, the customer is inclined toward the brand itself. In both cases, the key focus is on 'customer experience'. The webinar ended with some key insights for young entrepreneurs to escalate in the ongoing market. It is important to sell the belief, not the brand.
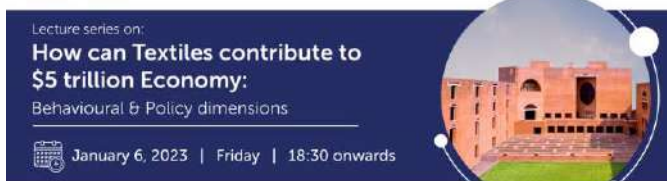
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To watch the webinar, click here.

How can Textiles Contribute to a $ 5 Trillion Economy: Behavioral & Policy Dimensions (Industry Talk)

January 06, 2023

*Subhash Chandra Baheria is a Member of Parliament in Bhilwara and a Member of the Standing Committee on Textiles and Labour while **Puneet Lalbhai** is the Executive Director at Arvind Mills. **Prof. Arvind Sahay** is a Professor of Marketing & International Business and the Chairperson of the NSE Centre for Behavioral Science at IIMA. Prof. Sahay is also the author of, 'Brands & the Brain' published by Penguin Random House in 2022.*

Mr. Baheria opened the interaction by talking about the key challenges that are faced by the textile industry. These revolve around technology, regulatory perspectives, human skills, markets, and demand. With over 45 million people employed, the textile industry in India is a $ 200 billion industry which forms 10% of domestic exports. For a 10% share in the $ 5 trillion dollar economy, the industry would have to become a $ 350 billion industry in eight years.

As an example of technology and its use in textiles, Bhilwara which produces 5 lakh meter/month in 1982 now produces 09 crore meter/month. India is the largest cotton and jute producer, second largest textile manufacturer but the third largest in textile exports. Taxation policy is an issue that has led to an imbalance between production and exports. At a global level, manmade to cotton textiles stands at a 70:30 ratio. However, in India, it is other way round because synthetic textiles have not been given a preference in Indian policy. For example, GST was planned at 5% for cotton and 12% for synthetic fibers which affect this ratio adversely. However, the rate has changed for both and stands at 5%.

To address technology-related issues in terms of man-made fibers, the government came up with a Technical Upgradation Fund which contributed to 40% of the recent growth in the textile sector. The government has also started projects related to technical textile flourishment. Examples of these textiles are the garments used by Indian military in glacial regions to keep the cold away. These textiles are costly and are currently being imported. Domestic research needs to be conducted to open possibilities of bringing these technologies to India. Another challenge is that Indian producers are demand-driven and are not researching consumer taste and behavior.

According to Puneet Lalbhai, the textile industry has been characterized by four major themes. Firstly, China controlled 40% textile market for around 3 decades and India captured about 4%. Over the last couple of years or so, China's share has shrunk to around 23% and is expected to shrink further. India, therefore will be presented with the opportunity to fill this space. India is strong in fiber, yarn and fabric but extremely weak on garments.

> **"** *Behavioral science research can help understand public demand and taste and this will help to better forecast the future of the industry.* **"**

The second major theme revolves around textile consumers of textiles and garments are behaving. The third trend is how individuals are buying and using e-commerce for this industry. The fourth theme revolves around climate change. The textile industry, after steel and power, is the most carbon and water-intensive industry. India might miss the carbon footprint target of 2030 if manufacturing techniques do not change. While there are threats, there are also opportunities.

Lastly, Lalbhai talked about the productivity gap. The productivity norm in the Indian industry is 46% while in Vietnam for example, the productivity norm is 75%. This is a massive barrier to scale. This is inherently an industry issue which should not be thrown on policy issues; in fact, the textile industry has been a beneficiary of successive policies from the government. The solution to this is to pay attention to the discipline, industrial engineering, technology and training and people development. Indian factories have about 2000 workers in each factory while the international norm is 10,000 workers in one factory. India needs to move in this direction and focus on innovation in order to move towards the goal of becoming a $ 05 trillion market.

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To watch the webinar, click here.

Policy Uncertainty and its Impact on Foreign Firms

January 12, 2023

*An alumnus of IIM, Ahmedabad, **Akhilesh Tilotia** works with the National Investment and Infrastructure Fund (NIIF) as Head of Research and Chief of Staff to the CEO. Akhilesh is a keen observer of the economic, political, and social landscape of India. In his previous roles, he has led Strategy and New Initiatives for Axis Bank, worked with the Kotak Group, and The Boston Consulting Group, and was a co-founder of PARK Financial Advisors. **Prof. Vishwanath Pingali** is currently Associate Professor of Economics at IIM, Ahmedabad. Dr. Pingali's areas of research include Applied Game Theory, Industrial Organization, Pharmaceuticals, Behavioural Economics, and Regulatory Economics.*

The panellists on this webinar discussed how foreign and domestic firms react to policy uncertainty in emerging economies. Policy uncertainty is an inherent challenge faced by emerging markets. Unanticipated policy uncertainty may arise on account of three key instances:

Prerogative of the Executive: There is often an outcome that the executive wants to achieve through policy change such as the demonetization of currency notes in India.

Surprise Timing: The policy change may be potentially a good action to take but it arrives at short notice such as a tax change.

Exogenous Factors: The policy maker is forced to take an action such as the Global Financial Crisis, or the pandemic.

A stark difference exists in how foreign and domestic firms react to policy uncertainty in an emerging economy. Domestic and foreign firms in emerging economies face high-velocity environments with rapid institutional changes and weaker factor and product market institutions. Such dynamism can be attributed to policy uncertainty resulting from frequent changes in government policies. Firms tend to mimic the behavior of local firms to reduce the risk of operating in a foreign country referred to as institutional isomorphism. This tendency further intensifies the more distant the countries are to each other on cultural, regulatory, and economic dimensions. And yet, studies show that, with time, these firms can better mimic local firms' reactions.

> *While domestic and foreign firms react similarly to anticipated policy changes, foreign firms react more adversely to policy uncertainty*

The strategies that firms in emerging markets use must differ from the strategies they use in developed markets because regulatory regimes like intellectual property law and price regulations in emerging markets are not fully defined. Domestic firms in these markets expect policy uncertainty and hence can strategize more ably. In the study conducted in 2022 by Vishwanath Pingali, Amit Karna, and Shamim S. Mondal titled, 'Policy Uncertainty and Behavior of Foreign Firms in Emerging Economies', they used fixed effects panel data regression on pharmaceutical sales data on India's cardiovascular segment to measure the market reactions of foreign and domestic firms faced with policy uncertainties. The study found that while domestic and foreign firms react similarly to anticipated policy changes, foreign firms react more adversely to policy uncertainty. In an internal comparison within foreign firms, late-entrant foreign firms were not as affected as new-entrant foreign firms and reacted less drastically as compared to new firms. This suggests that foreign firms also learn policy uncertainties and begin adapting to them with time. But for a new entrant, initial navigation may be a challenge. The study demonstrates that adaptability is the key for new foreign firms to face policy uncertainty.

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To watch the webinar, click here.

Doing Reputation: Creating Value for Business

February 15, 2023

*With close to 15 years of experience spanning reputation management, brand communications, and public relations, **Munavar Attari** is presently the Managing Director at Fleishman Hillard in India. **Dr. Biswajit Roy** is the Director General at the Gujarat Energy Research and Management Institute in Gandhinagar. Dr. Roy has over 38 years of work experience with leading oil and gas giants — Oil India Limited and Indian Oil Corporation Limited. **Prof. Asha Kaul** is Professor of Communication at IIM, Ahmedabad.*

Reputation in simple terms is what an entity is known for. It is an intangible asset of any organization. Reputation is important for all organizations disregards of their company size. According to Warren Buffet, "It takes twenty years to build a reputation and only five minutes to ruin it, if you think about that, you will do things differently." Building and maintaining a reputation helps in the overall growth and revenue of the company in the long run, provides them an edge over their competitors, acts as a societal help during a crisis situation, helps companies attract the best pool of talent, helps secure their loyal and repetitive customers, helps in easier and smoother product line expansions, and also attracts stakeholders especially, investors.

Reputation is also something that protects the companies' license to operate in the marketplace. It acts like a shield in terms of crisis. It also reduces the cost of the business in the long term. Every organization must build a reputation as a matter of strategy. Reputation and trust can be considered intrinsically linked. There occurs to be a 'trust deficit' when a stakeholder is wondering if the company is staying true to what it communicates and is sceptical about a particular promise by the company. Some companies perform well but they may not be good at communicating what they do, and for some companies there actually may be a gap between what they say and what they do. Both cases are a risk to their reputation that needs addressing at different levels. This is when Corporate Social Governance (CSG) comes into play. What a company is statutorily mandated to do, what it actually does, and how it presents itself is a measure of CSG. As much as difficult it gets to manage a reputation in times of social media, it also helps in acting as a 'coating' during tough times.

> ❝ *Reputation is not a destination; it is a journey.* ❞

The webinar also covered numerous examples of case studies from the automobile, travel, and software industries of broken reputations, their impact on the business, and the fixing procedure. It also discussed the companies that continued to behave ethically to fix their affected reputation despite incurring losses during the affected period and ultimately turned successful. Most businesses can survive the short bad phase if they are on the path of honesty. Reputation, as much as it is about external communication, is also about how an organization is structured internally. Reputation is not something to be dealt with only in a crisis situation, it is an ongoing function and responsibility of the organization. Reputation is not a destination; it is a journey.

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To watch the webinar, click here.

Systematic Long-Only Momentum Strategy in Financial Markets: Evidence from India

March 16, 2023

*A career banker with over 25 years of experience spread out across US, Europe and Asian markets, **Prof. Rajan Raju** heads Invespar Pte Ltd., as Director and is also Visiting Faculty at IIMA. **Harish Krishnan** has close to two decades of experience spread over Equity Research and Fund Management. Since 2013, Krishnan has been managing various equity schemes as a Senior Fund Manager at Kotak Mutual Fund. A Long Only India Specialist, Krishan is the Senior Fund Manager at Kotak Mutual Fund. **Prof. Arvind Sahay** is a Professor of Marketing & International Business and the Chairperson of the NSE Centre for Behavioral Science at IIMA. Prof. Sahay is also the author of, 'Brands & the Brain' published by Penguin Random House in 2022.*

Factors are investment styles that deliver relatively higher returns over the long run. These risk premiums don't come for free, as factors can (and will) underperform in the short (or even medium) run. Static factors like equities and bonds whose risk premiums are obtained by simply buying assets (long-only positions). Dynamic factors involve long-only or long-short portfolios where portfolio weights are constantly/regularly adjusted. The superior returns to factors, on average, arise as they underperform during bad times, sometimes dramatically. For most investors, bad times matter more than good times: understanding the factor risks of a portfolio is essential.

Factors originate primarily from academia, motivated by economic and behavioural theory and empirical study. They extend CAPM and attempt to explain the average returns of portfolios. A systematic tilting toward a style that is implemented across a diversified set of assets include tilts that deviate from market weights and long-only or long−short portfolios. Discretionary or active management using factors is common, explicitly or implicitly. Active or systematic, rule-based factor strategies use the same ideas and are subject to common misconceptions.

Winner stocks continue to win, and losers continue to lose. Momentum is the strategy of buying stocks that have gone up over the past 12 months (winners) and shorting stocks with the lowest returns over the same period (losers). It is a cross-sectional strategy. Winners and losers are always relative, and the market as a whole can go up or down. It is well-established empirical factor whose premium is evident over time, markets and asset classes.

In practice, there are more dimensions to constructing efficient portfolios than simply accepting market risk (a factor in itself!). They are not arbitrage opportunities. In the long term, factors provide excess returns beyond market risks because they compensate for additional risk exposure in an efficient market, which is important to some investors (the rational explanation) and/or are based on behavioral biases of investors (the behavioral explanation), and/or they exploit the "other side" of different preferences or beliefs of some investors (the other side).

> *"For most investors, bad times matter more than good times: understanding the factor risks of a portfolio is essential."*

Like the international evidence, in India, the momentum factor earns higher returns over the long run because it suffers bad times in the short (momentum crash) or even medium term. Not all implementations are the same. Implementation risks include liquidity, capacity, slippage, and turnover. The Indian market is top-heavy, which poses unique challenges for investment managers. Asset owners and wealth managers should understand how these risks are managed. There is an opportunity for craftsmanship alpha. Rather than relying on opinion, evidence should be used. Academic factors can help understand the drivers of return. It is also important to understand factor risks.

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To watch the webinar, click here.

BEHAVIORAL SCIENCE IN MANAGEMENT CONFERENCE, 2023

The NSE Centre For Behavioral Science in Finance, Economics, and Marketing (NSE CBS) hosted the first in-person and third annual Behavioral Science in Management (BSIM) Conference on April 04, 2023 and April 05, 2023 at the JSW School of Public Policy, IIMA. This year, the centre received 500+ domestic and international abstract submissions of which 27 oral submissions and 11 poster submissions made it to the final group of presenters.

Tracks	Abstracts Received	Selected Presentations	Selected Posters
Marketing	174	8	2
OB / HR	108	8	3
Economics	98	6	3
Finance	97	5	3
Others*	28	-	-
Total	505	27	11

* Others includes abstracts that were not relevant to the theme of the conference.

From gaining insights into the use of behavioral economics to shape public policy to applications in neuroscience for projecting consumer behavior—the conference explored a range of domestic and international behavioral science studies and applications from an array of fields including but not limited to finance, economics, marketing, consumer behavior, organizational behavior, and human resources.
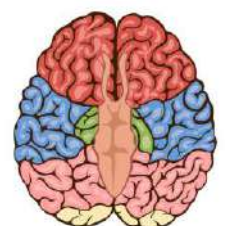
Brain Anatomy & Function

The key objective of the centre's annual conference is to create a space that enables researchers, regulators, policymakers, and practitioners to hold discussions and gain valuable behavioral insights from the perspective of these individual fields. The first in-person edition of the conference features presentations and discussions by leading management experts in academia and industry.

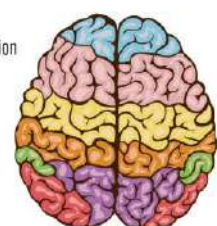| No.	Track	Abstract Title	Authors	Position	Award
1	Marketing	Not Left to Right, I will Follow the Order/ What is absent governs the order: The reference priming effect in arrangements	**Abhishek Kumar Jha**, Doctoral Scholar, IIM Indore **Sanjeev Tripathi**, Professor, IIM Indore	First Prize	INR 75,000
2	Economics	On the Role of Nudges in Reducing Exponential Growth Bias and Increasing Safety Compliance in COVID Times	**Ritwik Banerjee**, IIM Bangalore **Priyama Majumdar**, University of Warwick **Satarupa Mitra**, IIM Bangalore	First Prize	INR 75,000
3	OB & HR	Experimental Investigation of Manipulation and Moral Disengagement: The Game of Cheating	**Kedar Thakur**, XLRI Jamshedpur **Soumya Kanta Mishra**, XLRI Jamshedpur **Anuj Jain**, XLRI Jamshedpur	Second Prize	INR 75,000
4	Marketing	Are Gifts a Delight or a Cost? Impact of Donor Motivations on Preference for Gifts	**Sai Siddharth V.K**, Ph.D. Candidate in Marketing, IIM Ahmedabad **Prof. Arvind Sahay**, IIM Ahmedabad **Prof. Sourav Borah**, IIM Ahmedabad	Second Prize	INR 75,000

Centre for Behavioral Science

BSIM 2023
April 4 - 5, 2023

Organised by
The Centre for Behavioral Science in Finance, Economics, and Marketing at the Indian Institute of Management Ahmedabad in association with the NSE Ltd.

SCHEDULE — DAY 01 | TUESDAY | APRIL 04, 2023

Time	Session
08:30 AM	**Registration & Tea**
09:15 AM	**Inaugural Ceremony** (Venue: SPP Audi, Ground Floor, JSW School of Public Policy) **Prof. Bharat Bhasker**, Director, IIM Ahmedabad **Mr. Mohal Lalbhai**, Founder, Matter Motor Works **Prof. Arvind Sahay**, Chair, NSE Centre for Behavioral Science (CBS) & Professor, Marketing & International Business, IIM Ahmedabad
10:30 AM	**Talk: Introduction to EEG** Brain Machine Interface Systems: Interpreting and Translating Thoughts into Actions **Prof. Vinod Prasad**, Professor and Director of Research, Infocomm Technology, Singapore Institute of Technology
11:20 AM to 01:00 PM	**Paper Presentation Track 01: Marketing** (Venue: SPP Audi, Ground Floor, JSW School of Public Policy) Chair: Prof. Arvind Sahay | Co-Chair: Prof. Akshaya Vijayalakshmi Shaping Consumer Marketing Strategies as per Neuroscience **Manvi Jain**, IIT-Delhi | **Mannu Brahmi**, IIT-Delhi | **Pooja Sahni**, IIT-Delhi Feeling Awe, Choosing Right: Awe Leads to Mindful Consumer Choices **Dr. Sukriti Sekhri**, Assistant Professor, S. P. Jain Institute of Management and Research **Dr. Amogh Kumbargeri**, Assistant Professor, IIM Udaipur | **Dr. Atul Kumar**, Assistant Professor, Ahmedabad University **Yash Chakarvarty**, IIM Ahmedabad | **Prof. Arvind Sahay**, Professor, IIM Ahmedabad When We Compete, I Won't Help: The Influence of Framing National Achievement Cues on Prosocial Behavior **Athi Karthick V**, IIM Ahmedabad | **Prof. Arun Sreekumar**, IIM Ahmedabad Deserving More for the Labor: The Earned Luck Effect **Ronan Singhania**, Doctoral Scholar, IIM Indore | **Sanjeev Tripathi**, Professor, IIM Indore **Paper Presentation Track 02: Economics** (Venue: SPP CR, Second Floor, JSW School of Public Policy) Chair: Prof. Vishwanath Pingali | Co-Chair: Prof. Jeevant Rampal Samaritan's Curse: Are Paths to Hell Paved by Good "Intentions"? **Rounak Sil**, KPMG Global Services, Bengaluru | **Thiagu Ranganathan**, Centre For Development Studies, Trivandrum **Anirban Ghatak**, IIM Kozhikode Consumer Privacy and Price Discrimination: Implications for Collusion Sustainability **Sumit Shrivastav**, Indira Gandhi Institute of Development Research (IGIDR) Attitude Towards Caste-Based Reservation and Study Group Formation: Evidence from a Business School in India **Dr. Jeevant Rampal**, Associate Professor, Economics Area, IIM Ahmedabad | **Saif Ali Khan**, Research Assistant, IIM Ahmedabad
01:00 PM	**Lunch Break** (Venue: IMDC Dining Hall, New Campus)
02:00 PM	**Paper Presentation Track 03: Finance** (Venue: SPP Audi, Ground Floor, JSW School of Public Policy) Chair: Prof. Joshy Jacob | Co-Chair: Prof. Sobhesh Agarwalla Herding Behaviour in Indian Stock Markets amid Covid 19: A CSAD and Quantile Regression Approach **Dr. Ravi D. Vaidya**, Professor, S. R. Luthra Institute of Management, Surat **Dr. Pooja P. Patel**, Assistant Professor, S. R. Luthra Institute of Management, Surat Does Accounting Conservatism Affect SME IPO Underpricing? **R Saravanan**, Research Scholar, Department of Business Administration, NIT **Yash Shree**, MBA Student, Department of Business Administration, NIT Stock Market Anomaly Detection using Machine learning and Sentiment Analysis **Dr. Purnima Rao**, Fortune Institute of International Business, Delhi, India **Shubhangi Verma**, Fortune Institute of International Business, Delhi, India **Paper Presentation Track 04: OB/HR** (Venue: SPP CR, Second Floor, JSW School of Public Policy) Chair: Prof. Aditya Moses | Co-Chair: Prof. Promila Agarwal Role of Metacognition and Cognitive Need in Explaining Decision-Coping Patterns of Employees in the Financial Sector: An Empirical Investigation **Dr. Shilpa Jain**, Assistant Professor | **Ms. Aarushi Singh**, Research Scholar University School of Management Studies, Guru Gobind Singh Indraprastha University, New Delhi Does Happiness Lead to Higher Productivity? An Empirical Study of Salesperson Mood on Sales Performance in Personal Selling Scenario **Girijesh Srivastava**, Doctoral Scholar - Organization Behavior, XLRI Jamshedpur Conflict Management Styles and Psycho-Emotional Characteristics **Anupam Das**, Associate Professor, Humanities and Liberal Arts in Management, IIM Kozhikode **Judu Ilavarasu**, Assistant Professor, Humanities and Liberal Arts in Management, IIM Kozhikode Attitude of Job-Seekers Towards Cybervetting: A Comparison across Social Media Platforms **Shipra Agrawal, Jitendra Kumar Singh**, Department of Commerce and Business Administration, University of Allahabad, Prayagraj
03:15 PM	**Poster Presentation & Discussion over Tea**
04:00 PM	**Panel Discussion I: Retail Investor Behavior Evolution During and After the Pandemic: Implications for Financial Markets in India** (Venue: SPP Audi, Ground Floor, JSW School of Public Policy) Moderator: **Prof. Arvind Sahay**, Chair, NSE Centre for Behavioral Science (CBS) & Professor, Marketing & International Business, IIM Ahmedabad Panellists: **Dr. Tirthankar Patnaik**, Chief Economist, National Stock Exchange of India **Prof. Joshy Jacob**, Associate Professor, Finance and Accounting Area, IIMA
05:15 PM	**EEG Analysis on Brain Vision Analyzer Software Workshop** (Venue: SPP Audi, Ground Floor, JSW School of Public Policy) This workshop is for selected participants. We encourage other attendees to engage with poster presentation & discussions Poster Presentation
08:00 PM	**Networking Dinner** (Venue: CR-02 Lawn, New Campus)

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SCHEDULE   DAY 02 | WEDNESDAY | APRIL 05, 2023

Time	Session
08:30 AM	**Tea/Coffee**
09:15 AM	**Panel Discussion II: Consumer Emotions & Decision Making: Implications for Customer Centricity** (Venue: SPP Audi, Ground Floor, JSW School of Public Policy) Moderator: **Prof. Arvind Sahay**, Chair, NSE Centre for Behavioral Science (CBS) & Professor, Marketing & International Business, IIM Ahmedabad Panellists: **Prof. Krishna Prasad Miyapuram**, Associate Professor, IIT-Gandhinagar **Mr. Adrian Terron**, Head, Corporate Brand & Marketing Strategy, Tata Sons **Mr. S.Subramanyeswar**, Group Chief Executive Officer, MullenLowe Lintas Group, India
10:30 AM	**Talk: Introduction to Eye-Tracker** (Venue: SPP Audi, Ground Floor, JSW School of Public Policy) AR/VR/MR: How Does it Matter? Comparing XR technologies with Respect to Human Factors **Prof. Pradipta Biswas**, Associate Professor, Indian Institute of Science, Bengaluru
11:00 AM	**Hands-On Interactive Eye-Tracker Workshop** (Venue: SPP Audi, Ground Floor, JSW School of Public Policy)
12:05 PM to 01:25 PM	**Paper Presentation Track 03: Finance** (Venue: SPP CR, Second Floor, JSW School of Public Policy) **Chair: Prof. Joshy Jacob	Co-Chair: Prof. Sobhesh Agarwalla** Stock Market Investment Decisions-Trust in Prediction Algorithms **Dhiraj Jagadale**, Cognitive Science Lab, IIIT Hyderabad	**Kavita Vemuri**, Cognitive Science Lab, IIIT Hyderabad Effect of Financial Literacy Intervention on Attribute-Framing Effect in the Context of Life Insurance Product **Ritika Bhatia**, Department of Management, BITS Pilani	**Anil K. Bhat**, Department of Management, BITS Pilani **Jyoti Tikoria**, Department of Management, BITS Pilani **Paper Presentation Track 04: OB/HR** (Venue: SPP Audi, Ground Floor, JSW School of Public Policy) **Chair: Prof. Aditya Moses	Co-Chair: Prof. Promila Agarwal** Performance Management System and its Influence on the Social Experiences of Employees from a Neuroscience Perspective **Sebin Joy**, Research Scholar	**Arti Arun Kumar**, Associate Professor	**Jain Mathew**, Professor **Sridevi Nair**, Assistant Professor School of Business and Management, CHRIST (Deemed to be University), Bengaluru, Karnataka Experimental Investigation of Manipulation and Moral Disengagement: The Game of Cheating **Kedar Thakur**, XLRI Jamshedpur	**Soumya Kanta Mishra**, XLRI Jamshedpur	**Anuj Jain**, XLRI Jamshedpur A Mental Health Situation: Analysis using a Deep Neural-Integrated Multi-Model Approach **N. Dharani Devi**, M.Tech Student, Department of Statistics, Cochin University of Science and Technology, Kerala **Hashmy Hassan**, Assistant Professor, Department of Statistics, Cochin University of Science and Technology, Kerala **Dr. Nimitha Aboobaker**, Assistant Professor, School of Management Studies, Cochin University of Science and Technology, Kerala Developing a High-Performance Work System in a Specific Department of an Indian Seaport for Improved Performance **Mitrabarun Ghosh**, PhD, Assistant Professor,Department of Management, SRM University Sikkim
01:35 PM	**Lunch Break** (Venue: IMDC Dining Hall, New Campus)
02:35 PM to 04:00 PM	**Paper Presentation Track 01: Marketing** (Venue: SPP CR, Second Floor, JSW School of Public Policy) **Chair: Prof. Arvind Sahay	Co-Chair: Prof. Akshaya Vijayalakshmi** Not Left to Right, I will Follow the Order **Abhishek Kumar Jha**, Doctoral Scholar, IIM Indore	**Sanjeev Tripathi**, Professor, IIM Indore Gamification on OTT Platforms- A Behavioural Study for User Engagement **Komal Suryavanshi**, Research Scholar	**Prasun Gahlot**, Research Scholar	**Surya Bahadur Thapa**, Research Scholar **Dr. Aradhana Gandhi**, Professor (Retail and Marketing) Symbiosis Centre for Behavioural Studies, Symbiosis Institute of Business Management, Symbiosis International (Deemed University) **Dr. Ramakrishnan Raman**, Director, Symbiosis Institute of Business Management Are Gifts a Delight or a Cost? Impact of Donor Motivations on Preference for Gifts **Sai Siddharth V.K**, PhD Candidate in Marketing, IIM Ahmedabad	**Prof. Arvind Sahay**, IIM Ahmedabad **Prof. Sourav Borah**, IIM Ahmedabad Facial Landmarks: Prediction of Product Preferences using a Unified Approach of Somatometry, Eye Tracking, GSR and Implicit Test Response **Raveena Gupta**, Research Scholar, Faculty of Management Studies, University of Delhi, India **Anuj Kapoor**, Assistant Professor, Indian Institute of Technology, Jodhpur, Rajasthan, India **Harsh Verma**, Professor, Faculty of Management Studies, University of Delhi, India **Paper Presentation Track 02: Economics** (Venue: SPP Audi, Ground Floor, JSW School of Public Policy) **Chair: Prof. Vishwanath Pingali	Co-Chair: Prof. Jeevant Rampal** Digital Remittances for Migrant Workers in India: An Unfulfilled Promise **Achyuta Adhvaryu**, University of Michigan, NBER, BREAD, Good Business Lab, WDI **Raphaelle Aulagnon**, Bocconi University, Good Business Lab	**Ishita Batra**, Idinsight	**Smit Gade**, Good Business Lab **Karan Nagpal**, Idinsight	**Anant Nyshadham**, University of Michigan, NBER, BREAD, Good Business Lab Heterogenous Agent Quantal Response Equilibrium **Dr. Jeevant Rampal**, Associate Professor, Economics Area, IIM Ahmedabad **Fernando Stragliotto**, PhD Candidate in Economics, Queen Mary University of London On the Role of Nudges in Reducing Exponential Growth Bias and Increasing Safety Compliance in COVID Times **Ritwik Banerjee**, IIM Bangalore	**Priyama Majumdar**, University of Warwick	**Satarupa Mitra**, IIM Bangalore
04:05 PM	**Poster Presentation & Discussion over Tea**
05:00 PM	**Valedictory Session** (Venue: SPP Audi, Ground Floor, JSW School of Public Policy)

Paper 01
Shaping Consumer Marketing Strategies as per Neuroscience

Manvi Jain, IIT-Delhi
*Mannu Brahmi*, IIT-Delhi
Pooja Sahni, IIT-Delhi

Consumers are constantly faced with small-scale conflicts that require resolution throughout the entire shopping experience, from deciding what to purchase, to evaluating options, to making a final decision. The resolution of small-scale conflicts during the shopping process requires significant cognitive processing and utilization of the brain's high-level resources, such as decision-making, problem-solving, and attention to detail. The authors have designed the study with the intention of identifying an external factor that can aid in the resolution of small-scale conflicts encountered by consumers during their shopping experience, by means of implementing effective marketing strategies. The current study utilizes a cognitive task in combination with neurophysiological monitoring to investigate the neural underpinnings of how task-irrelevant emotional images influence human cognitive processing.

The task trials were presented for 1 second (or 1000 milliseconds) each, preceded by different positive images for 0.6 seconds (or 600 milliseconds). Some neutral and negative images were also used as filler images for the randomization effect. The neural signals were also collected from all 40 participants (25 females, mean age=17) using a wet electroencephalography device. Reaction time and accuracy results show that the participants responded to with and without-conflict trials in an equal amount of time and with similar accuracy. The neural signals were analysed in terms of event-related potential (ERP) components. The major component that reflects conflict monitoring is N200 (negative potential appearing around 200 ms). The task trials following positive images have significant difference ($p<0.05$) in N200 signal amplitude for with and without-conflict trials at parietal brain regions.

The behavioral findings suggest that displaying positive images prior to task trials enhances the conflict-monitoring process for trials that involve conflict, resulting in faster response times compared to neutral condition. The neurophysiological results also support the behavioral findings. The modulation of the N200 component amplitude for trials involving conflict, as observed in the parietal lobe, where cognitive processes related to emotional processing and decision-making occur, reveals intriguing insights into the underlying neural mechanisms and their possible implications. The findings of the current study suggest that by evoking positive emotions in consumers through the presentation of positive images or objects (such as visual and scents of pleasant flowers) prior to introducing a marketing feature, the likelihood of them making more favorable purchasing decisions for the seller may be increased. The potential for future research to expand on the current study could include the use of various marketing features, such as advertisements, billboards, and interactive in-store promotions.
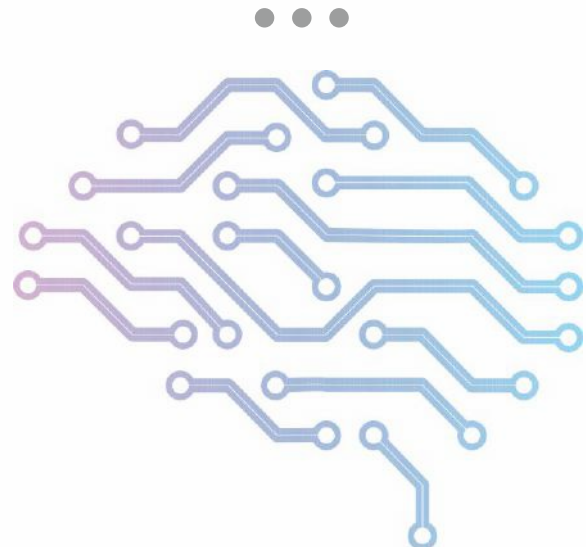
Paper 02
Feeling Awe, Choosing Right:
Awe Leads to Mindful Consumer Choices

Dr. Sukriti Sekhri, Assistant Professor,
S. P. Jain Institute of Management and Research
Dr. Amogh Kumbargeri, Assistant Professor, IIM Udaipur
Dr. Atul Kumar, Assistant Professor, Ahmedabad University
Yash Chakarvarty, IIM Ahmedabad
Prof. Arvind Sahay, Professor, IIM Ahmedabad

Awe is a common self-transcendent emotion experienced in response to information-rich, complex, and novel stimuli such as waterfalls, powerful individuals, religious experiences, and art (Keltner & Haidt, 2003). A growing body of research has examined its effects on information processing (Griskevicius et al., 2010), thinking (Chirico et al., 2018), perceptions (Rudd et al., 2012), beliefs (Valdesolo & Graham, 2014), and behavior (Piff et al., 2015). However, no previous research has shown the effect of awe on the nature of consciousness. Our research expands the theoretical understanding of awe by showing that awe leads to a mindful consciousness, which in turn leads to the choice of healthy food items.

Mindfulness is a state of consciousness emphasizing a) non-elaborative present-centered awareness and b) openness towards and acceptance of all experiences in the present environment (Bishop et al., 2004). Prior research finds that awe leads to a focus on the present moment (Rudd et al., 2012), and a diminishment of self. Further, as awe leads to a greater need for accommodation, it enables the processing of information without using existing knowledge structures, thereby enhancing the openness to new knowledge (Shiota et al., 2007). Taken together, we argue that awe leads to a state of mindfulness as it leads to present-centered awareness and openness to all experiences. Further, as awe leads to a mindful state, we expect consumers to make mindful consumption choices. In the present research has two-fold goals. First, we aim to provide physiological evidence in support of the hypothesized effect of awe on mindfulness. Second, we aim to test the downstream consequences of awe on consumption choices.
The study was designed as a 4 (emotion: awe-positive, awe-negative, happiness, and control) X 2 (Randomized) within-subjects design, such that each condition contained a set of 20 pre-tested images to elicit that

emotional state. Participants (N=15, age range 18-35), were fitted with a 32-channel EEG cap and shown a series of images from the same set, in randomized order using E-Prime v3.0. Each such set (priming one of the four emotional states) was repeated twice in a randomized sequence. Each image appeared for 2000 ms, and a fixation cross was displayed for 100 ms between each image. The EEG analysis focused on the attention and emotions ERP correlates: that allowed us to assess the affective response of each set of images (emotions). The agree/ disagree responses to the consumption behaviour also provide behavioral data, which can be analyzed to check the impact on mindful consumption choices. Further, an FFT analysis provides data on how alert respondents were, as a general proxy for mindfulness.

KEYWORDS: *Emotion; Awe; Event-related Potentials; Late positive potential; Mindfulness*

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Paper 03
When We Compete, I Won't Help:
The Influence of Framing National Achievement Cues on Prosocial Behavior

Athi Karthick V, IIM Ahmedabad
Prof. Arun Sreekumar, IIM Ahmedabad

Consumers often encounter cues of national achievements in marketing communications. Our research examines whether the cues of national achievements make people more or less prosocial. When framed competitively (vs. not framed competitively), cues of national achievements decrease (increase) prosocial behavior as competitive framing enhances the desire for agency. Further, through a large-scale field experiment, we provide evidence that this effect is attenuated when the consumption context is not prosocial. Our results have important implications for marketers, advertisers, and public policymakers trying to leverage cues of national achievements.

KEYWORDS: *National Achievements, Competitive Framing, Agentic Motives, Prosocial Behavior*

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Paper 04
Deserving More for the Labor: The Earned Luck Effect

Ronak Singhania, Doctoral Scholar, IIM Indore
Sanjeev Tripathi, Professor, IIM Indore

Companies engage in various promotional programs to engage their consumers, such as 'scratch and save' or 'spin-wheel' discounting. However, it is important to understand if consumers are satisfied with their rewards, as lower rewards can lead to dissatisfaction from the store and negative word of mouth. Research has looked into the effect of effort on expectations of attributes under the control of firms, such as quality, and price. We argue that when a consumer exerts more effort, they are more likely to win a luck draw or get a greater discount in random event promotion. Here in this study Earned Luck effect is described as when consumers incur costs in terms of spending more time or putting in more effort, their expectation for the benefits increases (Adams 1965). This expectation holds true for attributes directly related to the costs, such as better quality of the product after a longer search, or cheaper price when one travels to a discount store far away (Mohr & Bitner, 1995). However, we believe that the same effect is also likely to prevail when the benefit is not associated with the associated cost but is determined randomly, like spin-wheel discounts. We propose that when consumers exert greater effort or bear higher non-monetary costs, they feel that they have worked towards the goal of a better reward. This feeling translates to what we term the 'earned luck effect.' Consumers feel that because they have worked towards better rewards, they have earned their luck. To investigate the above effect we have formulated the following hypotheses:

H1: Consumers who perceive that they have put in more (vs. less) effort expect more (vs. less) discounts from a randomly generated discount program.

H2: Consumers who perceive that they have put in more effort (vs. less) effort expect a higher (vs. lower) likelihood of winning a reward in a random reward scheme.

H3: Consumers who perceive that they have put in more (vs. less) effort expect that they deserve more (vs. less) luck in the randomly generated outcome.

Participants (N=53) from a top-ranked B-school in Asia participated in the study. T The participants were randomly allotted to one of the two between-subjects cells where they spent a low vs. high effort traveling to buy a laptop bag. Participants in the low effort condition read that the store was 'just a few minutes away' while participants in the high effort condition read that the store was '1.5 hours away'. Next, they were told that after the purchase, they could use a scratch-and-save card to get a discount on their current purchase. The scratch and save card could have any discount ranging from 5% to 30%. Then they were asked an open-ended question to indicate how much they expected to win. Next, they indicated how much did they deserve to get a high discount on a two-item 7-point scale. The results indicated that participants in the high-effort condition expected a higher discount than those in the low-effort condition Similarly, participants in the high-effort condition felt they deserved higher discounts.

KEYWORDS: *Earned Luck, Entitlement, Scratch and Save, Effort Perception*

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Paper 05
Not Left to Right, I will Follow the Order

Abhishek Kumar Jha, Doctoral Scholar, IIM Indore
Sanjeev Tripathi, Professor, IIM Indore

Arranging objects is an everyday activity; everyone arranges things around them at home and in offices. Retail shops to online e-commerce players need to arrange products for the customers, and managers must decide how to arrange these on a shelf. The research on how arrangements are made is limited in nature. We propose that individuals need order, and they achieve this by aiming for a monotonic consistency in the arrangements. We test and validate that maintaining monotonic consistency outshines the tendency of left-to-right ordering. We formally state these as:

H1: Preplacement of items will moderate the inclination to arrange items in increasing order from left to right in an increasing sequence. The pre-placement of the lowest numeric labelled item on the left (vs right) extreme will accentuate (vs attenuate) the likelihood of arranging items from left to right in increasing order.

H2: The inclination to arrange items in ascending order from left to right on a numeric attribute is moderated when the number of items to be arranged is less than the total number. In such situations, if the lowest few items are arranged, these would be arranged in an ascending left to right order, but not when the highest few items are arranged.

H3: The presence of categorization information on the objects attenuates the preference of left to right overall and promotes arrangements by category. Objects are arranged left to right within a single category with no other differences.

Study 01: We randomly assigned the participants to 2 between-subject design. For the condition 25% placed at the leftmost position, people arranged a left-to-right ascending order for the three leftover items. Similarly, with 40%placed at the rightmost position, people arranged in left-to-right ascending order. The results indicate a preference for the numerical marker in the left-to-right ascending order. However, a

preplacement hinders this. Individuals' tendency to maintain monotonic consistency impacts and overshadows the preference for the left-to-right ascending arrangement.

Study 02: We randomly allocated the students to one of the 2 (Cheapest/Costliest) cells. The study described a baker who had six types of cupcakes for 50,60,70,80,90,100 units in local currency. Due to a lack of space, the baker had to arrange only the cheapest vs the costliest three cupcakes in the two conditions. The participants were tasked to indicate the arrangements they thought the baker had used. For this, they were given all six possible combinations to arrange the three cupcakes. Participants preferred the arrangement increasing left to right 50-60-70 (x%) for the three cheapest items than the decreasing left to right 70-60-50 (y%). However, The pattern was different for the costliest items; the preference for increasing left to right (80-90-100) (z%) was not significantly different for decreasing left to right (100-90-80) u%. This supported H2.

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Paper 06
Gamification on OTT Platforms:
A Behavioral Study for User Engagement

Komal Suryavanshi, Research Scholar
Prasun Gahlot, Research Scholar
Surya Bahadur Thapa, Research Scholar
Dr. Aradhana Gandhi, Professor (Retail and Marketing), Symbiosis Centre for Behavioral Studies, Symbiosis Institute of Business Management, Symbiosis International (Deemed University)
Dr. Ramakrishnan Raman, Director, Symbiosis Institute of Business Management

Gamification is the regular application of game mechanics in non-game contexts to increase customer engagement. This study examines the consumer's visual attention toward gamification options while watching OTT (Over-the-top) online content and the impact of gamification on user engagement (UE) on the OTT platform. The experimental study was divided into two parts- study 1 and study 2. It was carried out at the marketing and behavioral lab of a management institute in India using the OTT platform website. Empirical data was collected from 52 respondents within the age group of 23 to 35 years. The purposive sampling method was used to collect sample data from 52 respondents within the age group of 23 to 35 years, who were assigned a

gamified situation and instructed to visit the OTT platform website. The website hosted different and simple games which offered coins. Upon earning the coins, the respondents could redeem the coins in exchange for discounts, coupons, and cashback. After browsing the website, respondents were required to fill in the questionnaire.

The study used a five-point Likert scale and user engagement scale dimensions to measure engagement on the OTT platform with rewards. The relationship between Attention to Gamification (AG), Reward Satisfaction (RS), and User Engagement (UE) were studied by running a mediating linear regression analysis. Visualization data was collected using gaze plots and heat maps, and the proposed hypotheses were tested using the Mann-Whitney U test. This study found that Reward Satisfaction (RS) acted as a mediating factor in the relationship between Attention to Gamification (AG) and User Engagement (UE). AG was measured using fixation duration data from the eye-tracker, and UE was collected using a questionnaire.

Therefore, developers need to innovate and improve the adoption of gamification on OTT platforms to improve user engagement and increase interest in online content. This study adds to the literature on consumer engagement towards gamification on the OTT platform, showing that integrating gamification components into marketing, social media, community, and other digital brand experiences is a potent user engagement tactic. It also provides practical suggestions to help OTT platform developers and marketers make better decisions regarding the implementation of gamification. Future research should consider mobile apps as a platform and conduct a comparative study between the two or more OTT platforms with or without gamification.

Keywords: *Platform, User engagement, Reward satisfaction, Non-gaming context*

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"The conference provided networking opportunities which enabled me to connect with fellow researchers, establish new collaborations, and exchange ideas with peers from different institutions. We are happy to have stood second despite the range of challenges that we faced during our research, including time constraints, funding limitations, sample size, data collection, ethical issues, and data analysis. But, we were prepared well and had a detailed plan to address these challenges."

Kedar Thakur
First Runner Up, BSIM 2023

Paper 07
Are Gifts a Delight or a Cost?
Impact of Donor Motivations on Preference for Gifts

Sai Siddharth V.K, *Ph.D. Candidate in Marketing, IIM Ahmedabad*
Prof. Arvind Sahay, *IIM Ahmedabad,*
Prof. Sourav Borah, *IIM Ahmedabad*

Donor relationship management (DRM) has always been a critical investment for not-for-profits as donor acquisition costs at least two to three times more than their donations and take around 18 months to make the acquisition profitable (Sargeant, 2013). Also, Charitable organizations have traditionally suffered with donor attrition averaged above 60% in the past decade and the rates are more than 70% in donation-based crowd funding platforms. Yet, there has been scant research on donor retention and the impact of retention strategies on sustained giving. One of the most common strategies used by practitioners for both acquisition and retention is 'Donor Gifting'. Gifts have been used extensively both by for-profits and not-for-profits to engage customers and build sustained relationships with the customers. In fact, by definition, gifts do not have any immediate trade, but are given in anticipation of future benefit. Not-for-profits also gift donors as a token of gratitude for their donations and is also one of the most common strategies used. Yet the past literature has only evaluated the effectiveness of gifts as an incentive mechanism to acquire donors and not as a relationship management tool. Considering the importance of donor relationship management, and the extensive usage of gifts to build sustained customer relationships, we investigate the effectiveness of gifts as a donor retention tool. Importantly, most practitioners make these gifts optional Yet most of the past literature has designed experiments without taking donor preferences into consideration. Also, recent research suggests that the willingness to accept a gift may be more important to a receiver's happiness than either the gift's value or how they perceive the giver's intentions. Hence, we introduce an additional layer of intervention: Asking donors whether they would like to accept or reject gifts.

Put together, we primarily investigate donor preferences for gifts, its drivers and its impact on donor attrition and donation amounts post the gifting-attempt. We investigate donor preferences for gifts in terms of binary variable of accept vs reject gifts and its impact on subsequent donation behaviour through 2 field experiments across 2 years conducted on 3000 and 6200 donors by an NGO and Crowd-Funding

platform respectively. We find that in both experiments, out of the 2000 donors and 4200 donors who we reached out to provide gifts, almost 36% and 30% of donors rejected gifts respectively. Interestingly, we also observe that donors who rejected gifts had a higher attrition rate and reduced their donation amounts significantly post the attempt to thank them with a gift whereas donors who accepted gifts had a lower attrition rate and no significant change in their donations post the gifting initiative compared to the group that was not attempted (control) with a gift. Preliminary results of the lab experiments support our hypothesis that intrinsically motivated donors are more likely to reject gifts than extrinsically motivated donors as they perceive a communal relationship with the organization which subsequently makes them perceive gifts as overhead costs.

KEYWORDS: *Gifting, Donor Incentives, Charitable Giving, Communal & Exchange, Relationship, Overhead Costs*

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"*The conference was a unique experience and I enjoyed learning about technological advancements and their field applications. The keynote addresses were incredibly informative. I am humbled to have received the first prize especially since in March 2020, when Covid-19 struck, I was a third-year student in experimental economics and was quite uncertain about my future. Despite the challenges, we made the best of the resources we had online.*"

Satarupa Mitra
Winner, BSIM 2023
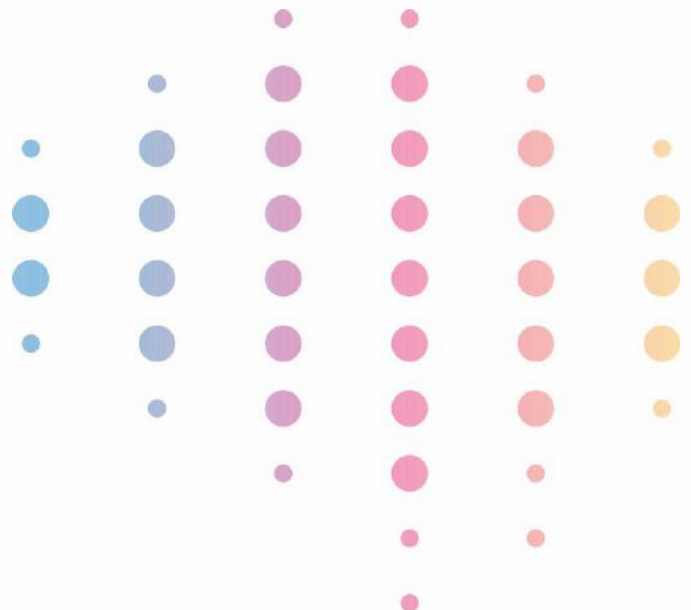
Facial Landmarks: Prediction of Product Preferences Using a Unified Approach of Somatometry, Eye Tracking, GSR, and Implicit Test Response

Raveena Gupta, *Research Scholar, Faculty of Management Studies, University of Delhi*
Anuj Kapoor, *Assistant Professor, Indian Institute of Technology, Jodhpur, Rajasthan*
Harsh Verma, *Professor, Faculty of Management Studies, University of Delhi*

Human races are obsessed with human faces and we tend to see human faces in every corner of visual world, be it clouds, trees, a cup of coffee or a bread loaf. Human face are regarded as a powerful source of communication – whether verbal, non-verbal, social or emotional. It is provocative to note how the face of an individual influences our attention and decision-making, but we are left to speculate which aspect of the face actually influences our attention. Therefore, it becomes imperative to understand the source of attention and engagement in a human face. More importantly, to understand why some faces capture and engage the audience much faster than others. Accordingly, the objective of this research is (1) to assess visual attention toward faces via an eye-tracking analysis (2) to evaluate the degree of facial symmetry/asymmetry of human faces via somatometry analysis and (3) to measure the willingness to purchase a product (cosmetic) based on visual attention, engagement and degree of facial symmetry via implicit response testing. The key question to be explored was does the face triad of the model advertising a particular product, have a significant influence on engagement levels and preferences levels. The present study proposes a novel and integrated method to highlight specific regions of face influencing judgments and what properties of the identified regions (somatoscopy) result in higher levels of engagement.

Three set of complementary studies were conducted augmented with a pre-study – eye-tracking, somatometric analysis and Implicit Response Test. The data from our three studies suggest that face triad have a strong correlation with attention, engagement and eventually, decision making. Specifically, the union of face-nose-lips was found to be the most engaging area, while advertising a particular product. Furthermore, attention also had a direct relationship with the symmetry of the face. Contrary to the findings in prior research which states that symmetrical faces are preferred by consumers, our study revealed that models with asymmetrical faces gained higher attention and engagement as compared to models with symmetrical faces. Eventually, higher attention and engagement levels was linked with higher conversion i.e., either preference towards a particular product or willingness to buy a particular product. The present study emphasizes the importance of choosing particular faces for advertising products, especially cosmetic products, which results into higher attention, engagement and eventually higher preference leading to purchase decisions. When the ultimate goal of a campaign is to generate leads and eventually conversions, choosing a particular face becomes of paramount importance.

KEYWORDS: *Neuromarketing, Consumer Neuroscience, Eye-Tracking, Face Triad, Somatoscopy*

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BSIM 2023 was a wonderful experience for us. We were not only able to present our work but also received wonderful feedback. The participant profile was amazing, and we heard about the cutting-edge work that is being done at NSE CBS. The conference was professionally organized with interesting workshops while the hospitality was world-class.

Abhishek Kumar Jha
Winner, BSIM 2023
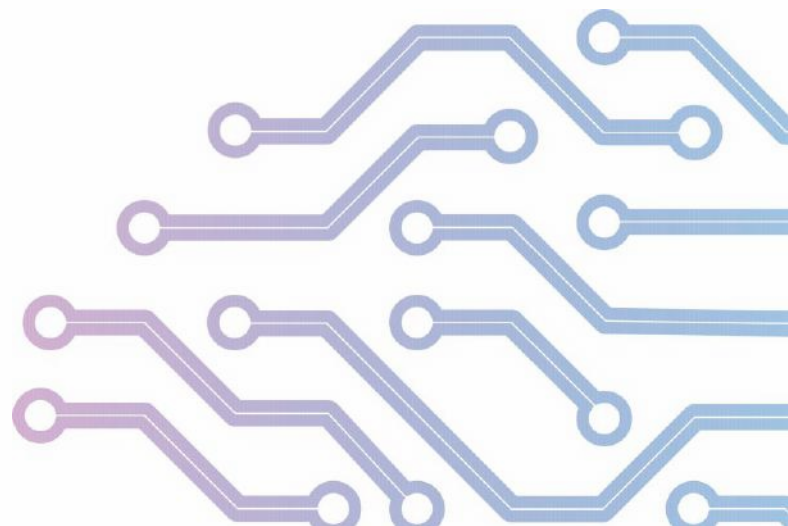
ACADEMIC PRESENTATIONS
FINANCE AREA

Paper 01
Herding Behaviour in Indian Stock Markets Amid Covid 19: A CSAD and Quantile Regression Approach

Dr. Ravi D. Vaidya, *Professor,*
S. R. Luthra Institute of Management, Surat
Dr. Pooja P. Patel, *Assistant Professor, S. R. Luthra Institute of Management, Surat*

The present study investigates the effect of herding in the Indian Stock Market during the Pandemic COVID 19. During such periods of crisis, the market tends to become more volatile which is a resulting effect of investors' behaviour and sentiments. The objective of this paper is to study whether the pre, during and post pandemic period has been a driver in causing the effect of Herding in Indian Stock Markets. The paper examines by employing Cross-Sectional Absolute Deviation (CSAD) measure suggested by Chang et al. (2000) and Quantile Regression at different quantiles in the 50 stocks of Nifty 50. The selected methodology has been found to be the most suitable tool for analysing the presence of herding. All the four variables considered in the data analysis - CSAD, market return, absolute market return and market return square were found to be stationary in nature.

The findings of CSAD fail to report any kind of herding behaviour depicted by the investors during all four sets of time periods as all the coefficients are positive. The study attempts to capture the effect of herding behaviour of investors for the pre, during and post periods of COVID 19 on the stocks of Nifty 50 in the Indian Stock Market. The results of this study reveal the absence of herding unlike the findings of other researches of the domain. However, this study is novel in its type as the CSAD and Quantile regression approach has been applied on four different data sets during the period of COVID 19. The absence of herding indicates the rational and or independent behaviour of investors decision in the market. Further research can be undertaken by employing stimulating factors like government policy response, VIX and other parameters to find their impact on presence of herding.

KEYWORDS: *Herding, COVID 19, Cross Sectional Absolute Deviation (CSAD), Quantile Regression*

Paper 02
Does Accounting Conservatism Affect SME IPO Underpricing?

R. Saravanan, *Research Scholar,*
Department of Business Administration, NIT
Yash Shree, *MBA Student,*
Department of Business Administration, NIT

Initial public offering (IPO) marks an important milestone in a Small and medium-sized enterprise (SME) life as it grants access to a vast pool of public equity capital and enables the company to secure funding for future growth and expansion initiatives. In addition, going public can also enhance the company's visibility and reputation, enabling the business to engage in wider domestic and international trade (Demers and Lewellen, 2003). Despite the immense contribution of IPO to the growth of SME companies, IPO comes with the cost of underpricing. If so, it can be argued that accounting conservatism reduces information asymmetry and could play a role in reducing SME IPO underpricing. However, there is a lack of empirical evidence in prior literature on the impact of accounting conservatism on IPO underpricing for the SME sector. Motivated by this, the study investigates the effect of accounting conservatism on the IPO underpricing of the SME sector.

The study measures accounting conservatism (ACC) using a total accrual-based measure consistent with the approach of Givoly and Hayn (2000). In particular, ACC is calculated as total accruals (TA) deflated by average total assets in the beginning of the year and averaged over a three year period centered around the year of IPO. Wherein, the total accruals (TA) is measured as below: Total accrual (TA) = (net income + depreciation) – cash flow from operations.

The study uses market adjusted abnormal returns for the first trading day as a measures for IPO underpricing. Based on an examination of 245 SME IPOs over the period of 2013-2022, the study results reveal that accounting conservatism (ACC) is negatively associated with IPO underpricing (UP) in the SME market. This finding implies that a conservative accounting approach is beneficial for SME firms in lowering the chances of observing IPO underpricing. The findings also show that the impact of accounting conservatism on underpricing is more pronounced for certain groups of companies. The findings suggest that accounting conservatism does reduce the underpricing of SME IPO. Since firms engaging in IPO, especially SMEs suffer higher costs due to underpricing, the mechanism of conservatism might be a solution to raise large sums of equity funds with lesser adverse price impacts.

KEYWORDS: *Accounting Concervatism, IPO Underpricing, SME*

Paper 03
Stock Market Anomaly Detection Using Machine Learning and Sentiment Analysis

Dr. Purnima Rao,
Fortune Institute of International Business, Delhi, India
Shubhangi Verma,
Fortune Institute of International Business, Delhi, India

The concept of market efficiency is used to characterize a market in which important information is swiftly incorporated into asset values, hence preventing investors from achieving greater returns through superior investing techniques. When the flow of news entering the market is random and unpredictable, current price fluctuations will solely reflect current news and will be independent of price changes in the past. If markets are genuinely efficient, how can there be "bubbles" in the stock market? With the contrasting views of traditional finance theories and behavioral finance theories, we intend to understand more clearly and empirically the existence of stock market anomalies in the Indian Stock Market and identify the relationship between investor emotions and the stock market anomalies. To identify unusual behaviors in the Indian stock market, we provide a deep learning model in the study that is based on the time series Long Short Term Memory (LSTM) model. The study used the closing price and turnover of the NIFTY 50 index during a 22-year period (2000-2022). Daily return, Close Price, Volume, Turnover, P/E, P/B, and Dividend Yield each day were tabulated for study for all 22 years. To understand the impact of stock market anomalies on market movements, the closing price was used. To further strengthen our results, top four market anomalies based upon there anomaly magnitude were identified to examine the relationship between investors' emotion and the anomaly detected. By using Twitter API this paper collected tweets of investors during the happening of the anomaly We first identify the market anomalies which are above the threshold value (0.15). We then found top four anomalies caused due to events i.e. the 2008 financial crisis, demonetization in India, 2018 Chinese slowdown and 2018 imposition of a 10% long-term capital gains tax (LTCG) on equity shares. Further we identified that the mean return of the events are statistically significantly lower than the mean non-event return for the NIFTY50.

Finally, findings based on proxies for investor emotion suggest that the anomalies caused due the events are more pronounced under periods of negative emotion, fear, pessimism and regret among investors.

KEYWORDS: *Investor Emotions, Stock Market Anomalies, LSTM Model, Sentiment Analysis*

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Paper 04
Stock Market Investment Decisions - Trust in Prediction Algorithms

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Kavita Vemuri, *Cognitive Science Lab, IIIT Hyderabad*

In prediction algorithms , trust is contingent on the nature of the algorithm's task, its stated and observed accuracy, and its ability to learn (Yin. M. et al., 2019). Though evidence-based algorithms predict the future more accurately than human forecasters, we prefer a human forecaster when given the option (Dietvorst et al. 2015), referred to as "algorithm aversion." And when humans and algorithms make the same error, people lose faith in latter sooner. When given predictions with varying degrees of accuracy humans were found to trust algorithms with greater precision (Yin et al., 2019). Interestingly, as familiarity with algorithms increases trust in the outcome from it decreases (Berger et al. 2021), a phenomenon we aim to explore. In this study, we investigate the relationship between the accuracy and familiarity with algorithms and trust using repeated stock price forecasts with continuous performance feedback. For this study, we maintained stated and accuracy level fixed to determine whether algorithm aversion decreases in the assurance of constancy. Premise of the study:

1. If accuracy is higher, participants will follow predictions over trends in data and vice versa.
2. Familiarity and trust in prediction algorithms are directly proportional.

41 University students (18-26 years) participated in the experiment. The game involved making decisions based on the prediction of the share price. Participants were shown a chart of the closing price of a randomly chosen stock. Prices were normalized to the 0 - 100 range for consistency. The graph included a line chart of closing prices for 50 days, and the game would go on for the next thirty days simulated as events.

Correlation of accuracy and trust score (Number of times decision matches up with prediction) was positive and statistically significant. Participants trusted the algorithm when the accuracy was shown to be 80 % than for 70 % . When accuracy was lower, the trend were followed. This shows Algorithmic aversion was found in low-accuracy groups validating our first premise.

In our study, familiarity with prediction algorithms played no role, invalidating our second premise. General trust and high accuracy led to higher trust in algorithms. Although the general trust questionnaire is based on trust in humans, players' trust propensity effected trust in algorithms. Though the effect was not as significant as the accuracy of the algorithm. The findings show that sharing the accuracy level of a prediction algorithm and its consistent performance to investors will help build trust.

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Paper 05

Effect of Financial Literacy Intervention on Attribute-Framing Effect in the Context of Life Insurance Product

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Anil K. Bhat, Department of Management, BITS Pilani
Jyoti Tikoria, Department of Management, BITS Pilani

In this paper, we examine the effect of attribute framing of the endowment life insurance policy on consumers' purchase intention and test whether financial literacy intervention moderates the attribute framing effect. Experiment 1 tests the main and interaction effect of framing two attributes, premium price and guaranteed maturity benefit of endowment life insurance policy, on consumers' purchase intention while controlling the effect of participants' risk perception of COVID-19.

In Experiment 1, we used a 2 (yearly premium price, monthly premium price) X 2 (aggregated maturity benefit, segregated maturity benefit) between-subjects experimental design. Participants were randomly assigned to one of the four conditions: yearly premium & aggregated guaranteed maturity benefit, monthly premium & aggregated guaranteed maturity benefit, yearly premium & segregated guaranteed maturity benefit, and monthly premium & segregated guaranteed maturity benefit. Participants in each condition were asked to imagine a situation where they plan to purchase an endowment life insurance policy and rate the given policies on a Likert scale of 1 to 5, indicating their intention to purchase. The results of Experiment 1 indicate a significant main and interaction effect of framing of premium price and guaranteed maturity benefit on consumers' purchase intention. Also, participants from the low-income group indicated a higher intention to purchase an endowment policy with a monthly framed premium price than the high-income group due to liquidity constraints.

Experiment 2 examines how a financial literacy intervention influences the attribute framing effect on consumers' purchase intention, acting as a moderating factor. The design of Experiment 2 is identical to Experiment 1, except that the participants were asked to refer to the time value of the money intervention table before indicating their intention to purchase. Also, the participants in Experiment 1 and Experiment 2 are different to avoid any bias in Experiment 2. The time value of money intervention provides financial literacy to the participants about the future value of the money using traditional recurring and fixed deposit accounts as an instrument. The result of Experiment 2 reveals that the financial literacy intervention plays a critical role in moderating the framing effect of premium price and guaranteed maturity benefits on purchase intention, with greater influence on the benefit framing effect than the premium price framing effect.

The study contributes to the literature by suggesting that providing a financial literacy intervention can help consumers make more informed decisions and also moderates the effect of attribute framing on consumers' intention to purchase. The findings of this study will help policymakers and marketers use suitable interventions to enhance the customers' financial literacy about the product for making informed decisions.

KEYWORDS: *Attribute Framing, Purchase Intention, Prospect Theory, Financial Literacy, Life Insurance.*

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" *I am grateful to IIM for the opportunity to present the work on Heterogeneous AQRE at the BSIM Conference even though I could not attend it in person. The hybrid schedule was clear, well-ordered, and punctual.* "
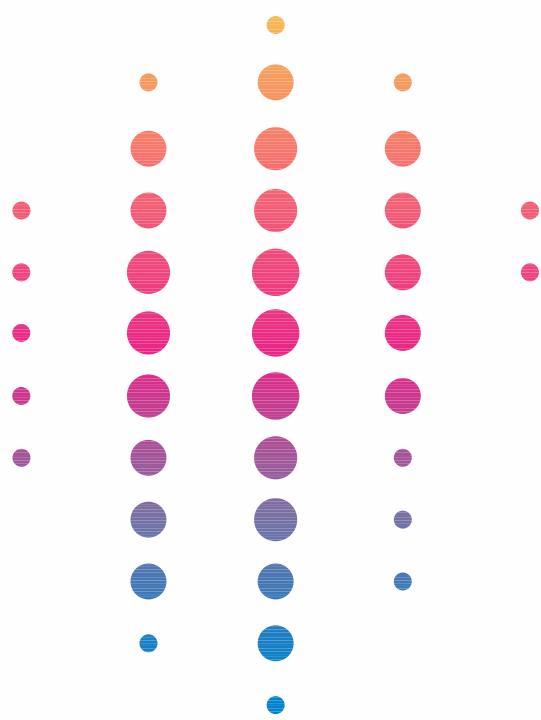
Fernando Marchioro Stragliotto
Paper Presenter
Ph.D. Candidate in Economics,
Queen Mary University of London

Paper 01

Samaritan's Curse: Are Paths to Hell Paved by Good "Intentions"?

Rounak Sil, *KPMG Global Services, Bengaluru*
Thiagu Ranganathan, *Centre for Development Studies, Trivandrum*
Anirban Ghatak, *IIM Kozhikode*

This paper develops a generalized model of Samaritan's curse Basu (2019) and provides an alternative explanation by incorporating social norms. Samaritan's curse emerges when a concern for the well-being of a bystander works against the bystander's interests. Based on the game proposed by Basu (2019), this paper first generalizes the curse and provides conditions under which this curse might emerge. It also incorporates the possibility of incomplete information where a player is uncertain if the other player is selfish or altruistic. We find that it might be better for the bystander if a player is unpredictable about her/his type (selfish/altruistic) rather than being certainly altruistic. our study posits two important departures from Basu's (2019) original propositions. Contesting against the traditional outlook of viewing preferences, we argue that the paradox emerges mainly due to the way preferences are usually modelled. In contrast with the neo-classical error of applying Max(U) calculus to all decisions, regardless of circumstances, and focussing solely on the individual payoffs, our study proposes a Distributional utility framework in order to incorporate both an individual player's valuation of as well as his/her perception about the valuation assigned by the 'Impartial Spectator.'

Our results indicate that if the valuation parameter breaches a theoretical threshold, the curse would emerge. This indicates that there are ways to model an altruist which are closer to the real world, where the curse does not emerge out of pure self-interest. Additionally, our proposed framework challenges Basu's (2019) original inference about group moral responsibility by demonstrating a scenario where transformation of both players into good Samaritans would eventually ensure that the paradox ceases to exist. Pointing towards the larger debate on Moral attribution, we further argue that blame may well be apportioned to an individual or a smaller subset of individuals for the display of immoral behaviour by the larger group. These findings raise important concerns related to appropriate method of modelling behaviour which might be less beneficial for the individual but good for others.

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Paper 02

Consumer Privacy and Price Discrimination: Implications for Collusion Sustainability

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Indira Gandhi Institute of Development Research (IGIDR)

This paper analyzes the relationship between consumer privacy and rms' incentives to collude. It shows that from consumer surplus perspective, the optimal privacy cost depends on underlying market characteristics. An increase in privacy cost makes it harder for collusion to sustain, unless products are saliently dierentiated. In the latter case, sustainability of collusion rst declines and then enhances due to an increase in privacy cost. This is true if consumers can ensure their full privacy by paying a cost. On the other hand, if consumers can protect their privacy only partially, collusion sustainability does not depend on privacy cost. These findings have important policy implications. The main results of this paper go through, regardless of whether consumers are sophisticated decision makers or they have limited strategic sophistication, and are subject to `level-k thinking'. Further, the main findings under full privacy are discussed when (i) consumers have an intrinsic taste for privacy, and (ii) market demand changes over time.

KEYWORDS: *Consumer Privacy; Price Discrimination; Collusion; Level-k Thinking*

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Paper 03
Attitude Towards Caste-
Based Reservation and Study Group Formation:
Evidence from a Business School in India

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Economics Area, IIM Ahmedabad*
Saif Ali Khan, *Research Assistant, IIM Ahmedabad*

Caste based reservation for admission into higher educational institutes is a sensitive topic in India. Notably, admission into such institutes doesn't guarantee homogeneous post-admission experience across castes. In this paper, within the context of caste and endogenous study-group formation in an Indian business school, we investigate the broader question of robustness of the standard strictly-anonymous survey method in eliciting true responses regarding sensitive caste-related questions. In particular, even with strict anonymity, surveys regarding sensitive caste-related issues can be inaccurate due to responses being affected by social desirability bias. For example, Coffman et al. (2017) show that the size of LGBT population and the magnitude of antigay sentiment is underestimated by the anonymous survey method. In this paper we attempt to investigate the possible existence of a similar measurement bias, and to measure this bias, in an important novel area: caste and endogenous study-group formation in the second year of the MBA (Masters in Business Administration) program in an Indian business school. This inquiry into caste and study-group formation is important because marks accruing to group projects contribute significantly towards the overall GPA, which can affect future earnings. We find that more than 40 percent respondents believe that caste-based reservation is not justified and that reserved-caste category students have inferior academic ability. Comparing anonymous survey responses with and without a 'veil', we find that the self-report of the tendency to exclude reserved-caste category students from one's study group increases from 5 percent (without the veil) to 21 percent (with a veil), and the tendency to exclude an inferior-academic-ability student increases from 21 percent (without the veil) to 63 percent (with the veil). These findings raise fundamental questions of measuring and analyzing attitudes related to caste-related issues using anonymous surveys.

KEYWORDS: *Business School, Caste, Discrimination, Study Group*

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Paper 04
Digital Remittances for Migrant Workers in India: An Unfulfilled Promise

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NBER, BREAD, Good Business Lab, WDI*
Raphaelle Aulagnon, *Bocconi University, Good Business Lab*
Ishita Batra, *Idinsight*
Smit Gade, *Good Business Lab*
Karan Nagpal, *Idinsight*
Anant Nyshadham, *University of Michigan,
NBER, BREAD, Good Business Lab*

We study the impact of a workplace program providing training on digital payment applications on the use of such technology for remittances among migrant workers. We find that training in a classroom increases the use of digital payment applications by about 5 percentage points, and individualized training increases use by about 10 percentage points. These increases are large relative to pre-treatment means. The increase in use of digital payments is driven by use for remittance, at least for the individualized treatment - neither treatment had an impact on the use of digital payments for non-remittance purposes. Moreover, as for the more exploratory results, the frequency of remitting and amount remitted do not change. Program cost data paired with these estimates reveal low-cost effectiveness. We discuss potential remaining challenges to adoption of digital payment technologies.

KEYWORDS: *Financial Inclusion, Migrants, Digital Payment Technologies, Remittances, Ready-Made Garments, India*

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" *My experience at BSIM 2023 has been amazing because of two reasons. Firstly, unlike other academic conferences where the participants are primarily academicians, BSIM creates a platform that fosters knowledge-sharing and collaboration opportunities between industry and academia. Secondly, unlike other conferences that focus less on the how the research could be executed, at BSIM, participants were exposed to workshops that introduced us to real-world implementation of new methods of understanding consumers such as EEG and other neuroscience tools.* "

Sai Siddharth V.K.
First Runner Up, BSIM 2023

Paper 05
Heterogenous Agent Quantal Response Equilibrium

Dr. Jeevant Rampal, *Associate Professor,*
Economics Area, IIM Ahmedabad
Fernando Stragliotto, *PhD Candidate in Economics,*
Queen Mary University of London

This paper defines the Heterogeneous AQRE (henceforth HAQRE) model which extends the Agent Quantal Response Equilibrium model (AQRE) by McKelvey and Palfrey (1998) to account for heterogeneity in payoff responsiveness across the players of a sequential-move game. Furthermore, if there is an opportunity to observe preceding actions in a sequential-move game, then there is an opportunity to form updated beliefs about the opponent's payoff responsiveness. Therefore, the paper also defines the HAQRE with belief updating (HAQRE-BU) which incorporates this belief updating. We apply the logit formulation of HAQRE and HAQRE-BU models to experi- mental data from the Rampal (2020) winner-take-all sequential-move game among subjects with heterogeneous experience-level. In the setting, subjects with more experience with the game are given an incentive to take advantage of a possible weakness in the opponent's ability. We find that both models yield a significant improvement in data-fit relative to the AQRE model.

We construct the HAQRE model to incorporate the role of heterogeneity among players' skill by allowing for different possible levels of player-specific payoff responsiveness (captured by λi for player i in the logit formulation). Following Rogers, Palfrey, and Camerer (2009), we specify two notions of how a player can account for the λ-parameters of the other players. First, in the "standard" HAQRE case, each player i is aware of the true distribution of the opponents' types $\lambda{-}i$. The second case is where player i with λi only accounts for the correct distribution over each opponent's payoff responsiveness λj conditional on $\lambda j \leq \lambda i$, but i places 0 probability on λj such that $\lambda j > \lambda i$ holds. This second formulation is called Truncated HAQRE (T-HAQRE for short). The T-HAQRE model assumes that, in the formation of player's beliefs, factors intrinsic to subjects' reasoning can prevail over public information, resulting in "downward-looking" beliefs. Three instances of such factors are: first, player's with low λ who can imagine players with higher λ would target such higher-type behavior; second, evidence from the psychology literature indicates that people are often overconfident; and last, the benefits of considering the existence of more λ-types might not justify its cognitive costs.

Since in sequential-move games players get information about the other players by observing their preceding moves, we also model within-play belief updating (henceforth BU) by players about their opponents' payoff responsiveness λj on the basis of preceding moves. We model a naive specification of BU, where each player naively assumes that the opponents' beliefs remain constant over the course of the game, regardless of the history of preceding actions. We find that the HAQRE-BU model fits the data significantly better than the HAQRE model.

We evaluated these models with respect to data from the incentivized Experiment 2 by Ram- pal (2020), which tested a two-player winner-take-all sequential-move game in which subjects with different levels of experience interacted. While the winner-take-all feature helps avoid confounding effects of social-preferences, the heterogeneity in experience captures heterogeneity in skill or pay- off responsiveness. In particular, in each experimental session, about half the subjects were given more experience with the game before introducing inexperienced players into the session. The overall proportion of experienced/inexperienced subjects in each experimental session was common knowledge, but in each round of the game, the opponent's experience level was unknown. In a sim- plified application of the HAQRE models, the two different levels-of-experience are assumed to be associated with two different payoff responsiveness: λExp being the common payoff-responsiveness parameter for experienced subjects, and analogously $\lambda Inexp$ for inexperienced subjects.

Results show that heterogeneity of payoff responsiveness can be important in sequential-move games, especially when players with different experience-levels interact. Both the HAQRE and the T-HAQRE models yield significantly better fit to the data compared to the AQRE model (p- values < 0.05). Furthermore, we find that naive belief updating specification HAQRE-BU provides significant improvement in data-fit over the HAQRE (p-value < 0.1). Finally, HAQRE fits the data significantly better than T-HAQRE (p-value < 0.05), which indicates that the publicly announced proportion of experienced/inexperienced subjects prevails over other factors in belief formation. Thus, the most appropriate sequential-game quantal-response model for the experimental data is one where players account for heterogeneity in payoff-responsiveness of their opponent, accounting for both lower and higher payoff-responsiveness, and update belief about their opponents' payoff responsiveness λj on the basis of preceding moves.

KEYWORDS: *Quantal Response, Heterogeneous Agents, Belief Updating, Extensive Form*

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Centre for Behavioral Science

Paper 06

On the Role of Nudges in Reducing Exponential Growth Bias and Increasing Safety Compliance in COVID Times

Ritwik Banerjee, IIM Bangalore
Priyama Majumdar, University of Warwick
Satarupa Mitra, IIM Bangalore

The sessions were very well organized. The set of selected papers was very interesting. They kept the audience engaged and the overall motivation of both the attendees and the presenters was high. This reflects on how well the conference was organized.

**Prof. Akshaya Vijayalakshmi**
Chair, Marketing Track

Exponential growth bias (EGB, henceforth), or the general tendency to linearize an exponential data generating process, is a well-studied phenomenon in psychology. In the context of financial decisions, EGB has been found to have important consequences on savings, borrowings, and other financial decisions. Recently, studies have documented EGB in the prediction of the future number of COVID-19 cases and found it negatively related to compliance with the COVID-19 safety protocols. Lammers et al. (2020) show that informing people about the nature of the disease's growth path and encouraging predictions in shorter steps substantially decrease, but does not eliminate, EGB. In this paper, we study, through an Amazon MTurk based experiment, whether policy relevant behavioral nudges can reduce and eliminate EGB. Further, we examine if eliminating the bias improves compliance with WHO-prescribed safety norms such as observing social distancing, wearing face masks, etc. In the absence of a vaccine, these are the most effective ways to contain the disease. Our results show that providing feedback about the prediction error and offering a forecast range of the future number of cases significantly reduce EGB and, consequently, increase safety compliance attitude. The latter suggests that governments should employ epidemiological models to project the growth path of the disease, which in turn should be made salient through appropriate health communication strategies.

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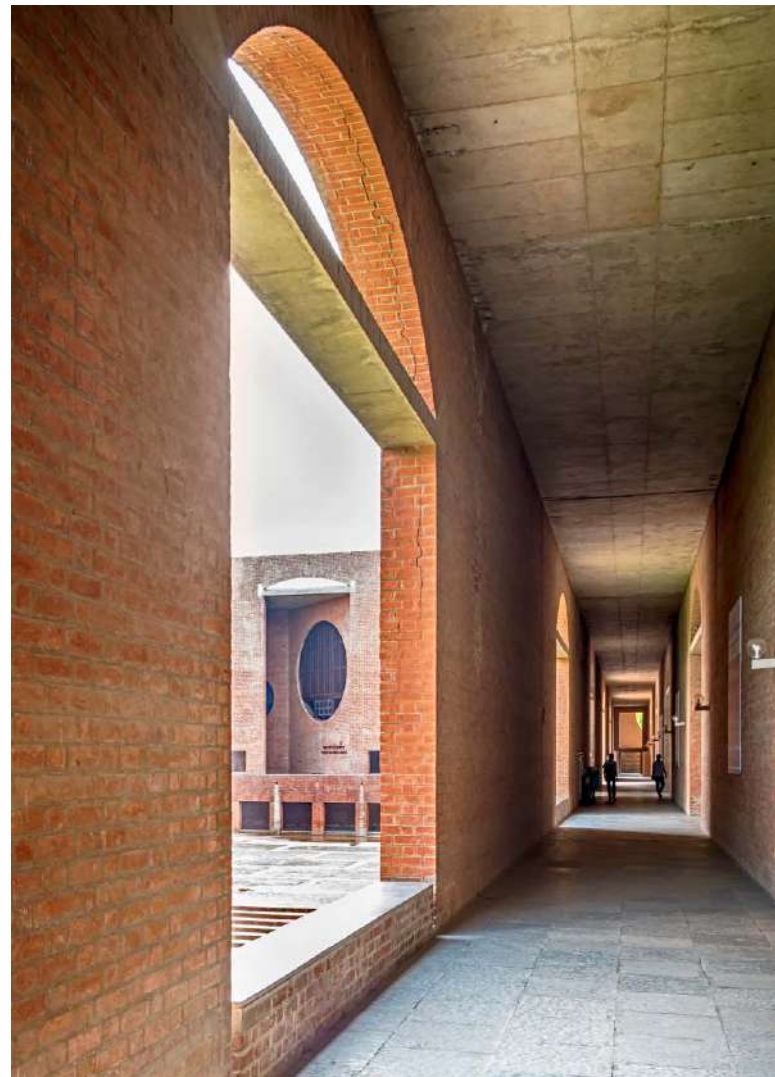
ACADEMIC PRESENTATIONS ORGANIZATIONAL BEHAVIOUR AND HUMAN RESOURCES AREA

Paper 01

Role of Metacognition and Cognitive Need in Explaining Decision-Coping Patterns Of Employees in the Financial Sector: An Empirical Investigation

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Guru Gobind Singh Indraprastha University, New Delhi
Ms. Aarushi Singh, Research Scholar,
University School of Management Studies,
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The growing importance of differences in thinking (cognition) and high-order thinking (metacognition) of individuals have opened new opportunities for research in decision-making literature. However, most of the studies investigating these individual differences have predominantly studied their linkage with decision-making ability. Since, employees in the financial world must deal with complex, dynamic, uncertain, and time-pressured situations while making decisions. They tend to adopt varied decision-coping patterns to deal with novel situations causing stress. Hence, it is essential to examine the linkage of these individual differences with various decision coping patterns among employees. The present study addresses this gap by examining the association of components of metacognition (metacognitive knowledge and regulation) and cognition (high and low cognitive need) on the various decision-coping patterns: vigilance, buck-passing, hypervigilance, and procrastination. Data collected from 103 employees in the financial sector enumerate the essential role of metacognition and cognitive need in explaining decision-coping patterns.

The findings depict that employees who have knowledge of their cognition and have a high need to engage in a cognitive task tend to adopt the most rational coping mechanism i.e. vigilance decision-coping pattern. While an individual's ability to regulate their own thinking was revealed to be positively related to two of the maladaptive patterns; hypervigilance and procrastination. Employees who have

knowledge of their cognition avoid adopting a buck-passing coping pattern. Further, the findings confirm that employees who have a low need to engage in a task learn to adopt the three maladaptive coping patterns; buck-passing, hypervigilance, and procrastination. This study is the first step to developing a better understanding of the inter-workings of metacognition, cognitive need, and decision-coping pattern, a vital but somewhat unexplored domain in the field of organizational behavior and behavioral finance.

KEYWORDS: Metacognition, Cognitive Need, Decision-Coping Patterns, Meta-Reasoning Framework, Conflict Theory, Individual Differences

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Paper 02

Does Happiness Lead to Higher Productivity? An Empirical Study of Salesperson Mood on Sales Performance in Personal Selling Scenario

Girijesh Srivastava, Doctoral Scholar, Organization Behavior,
XLRI Jamshedpur

Salespersons' performance is known to be influenced by personal, organizational, and situational factors. Studies on salesperson mood as a personal attribute have established its impact on the level of customer service delivery by salesperson. Besides, studies have also examined the impact of customers' mood on the outcome of sales conversation during personal selling. Negative psychological states and negative sales behaviors are linked to reduced performance. It's important to examine the influence of salesperson mood and the relationship thereof, on their sales performance. In particular, the study focuses on following research questions:

1. Does the mood of salespeople affect their sales performance?
2. How does the variance in mood states (positive affect vs. negative affect) influence the performance of a salesperson?
3. To what extent does the daily mood of a salesperson impact the sales outcome?

The study quantifies the explanatory power of salespersons' daily mood on daily sales performance. Findings suggest that salesperson mood has generally a complex effect on daily sales. The magnitude and the direction of this effect can vary depending on the geographical location of the salesperson. When salespersons self-report extreme mood states, it adversely impacts their sales performance for the day. Study findings are consistent with the basic premise of Yerkes-Dodson Law. Through these findings, we discuss the relationship between happiness and productivity, and its management implications. As future research direction, we propose the development of a sales forecasting model based on salespersons' mood forecast.

KEYWORDS: *Happiness, Mood, Salesperson, Sales, Performance, Personal Selling*

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Paper 03
Conflict Management Styles and Psycho-Emotional Characteristics

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Judu Ilavarasu, Assistant Professor,
Humanities and Liberal Arts in Management, IIM Kozhikode

Conflict management is an important skill required for managers in any organization. In this research, we attempted to study the conflict management styles of management students who had prior work experience in different industrial sectors. We administered a questionnaire and a behavioral measure for electrodermal activity, to explore the relationship between the perceived measure of conflict management and objective measure of emotional arousal. Twenty-five MBA postgraduate students (seventeen males and eight females) took part in this study. Their average work experience was approximately five years.

The design of the study was descriptive. The 15-item conflict management styles assessment tool was administered to both participants and a reliable peer. This questionnaire provided five styles of conflict management: collaborating, competing, avoiding, accommodating, and compromising. EmotiBit was used to measure physiological responses to the shown video stimuli. In order to behaviorally evaluate the emotional responses, the participants were divided in groups of two and each group was shown two of the four video clips, i.e., four short films selected to act as stimuli.

According to the findings, the most prominent strategies for managing conflict were collaboration and compromise. However, there was a distinct disparity between the self-reported and the peer evaluation of conflict management styles. In our study context, this trend could be interpreted as- those who avoided had higher electrodermal activity due to the considerable psychological turmoil caused by avoidance. Similarly, in a compromising state, inner psychological tension is eased, and that could have lowered the electrodermal activity. Therefore, by using both self-report and behavioral measures, the mechanisms of conflict management styles can be studied and applied to business settings.

KEYWORDS: *Conflict Management, Electrodermal Activity, Wearable Device, Emotion*

Paper 04
Attitude of Job-Seekers Towards Cybervetting: A Comparison Across Social Media Platforms

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Jitendra Kumar Singh, Department of Commerce & Business Administration, University of Allahabad, Prayagraj

With the advancement of information communication technologies, employers are increasingly 'Googling' job applicants and reviewing their social media profiles as a part of their hiring process. The practice also known as 'cybervetting,' has expanded the employers' ability to engage in employee surveillance. This involves screening of candidates on several types of social media profiles. However, job applicants either do not have the knowledge of the same or see it as an invasion of their privacy. This paper, therefore, tries to understand the perception of people's comfort with social media screening. It specifically aims to measure their attitude towards screening of different social media platforms like LinkedIn, Facebook, Twitter and Instagram as these are the most used platforms personally as well professionally. Justice, privacy invasion and face validity were the three variables taken to measure the attitude towards cybervetting.

The data was collected with 14 items using a 5-point Likert scale representing the three variables. The 14-item questionnaire was for one platform, and so a candidate using all the four platforms was required to complete it four times for four different platforms. The final year students of MBA, MCA and B.Tech (IT) were selected for the purpose and data was collected from an online survey. A total of 223 usable questionnaires were collected with candidates using at least one platform and 122 candidates using all the four platforms. The attitude of job-seekers between platforms was performed using two methods. First, a repeated-measures MANOVA was conducted analyzing the 122 candidates who used all the four platforms. The three factors that affect the attitude were taken as dependent variables and the platforms as the grouping variable. Second, another repeated-measures MANOVA was performed with the three variables but using the whole sample.

This study would help employers to understand the perception of job-seekers about their comfort, fairness and effectiveness of the mediums for hiring purposes. This would lead to either less willingness to commit to the organization or willing to engage in impression

management. This would be disadvantageous to the employers as they would get only that information which job-seekers think would impress them. Hence, the employers can rethink their strategies and policies on how to screen candidates and which platforms to use.

KEYWORDS: *Attitude of Job-Seekers, Cybervetting, Impression Management, Linkedin, Social Media Selection*

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Paper 05
Performance Management System and its Influence on the Social Experiences of Employees from a Neuroscience Perspective

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Arti Arun Kumar, Associate Professor
Jain Mathew, Professor
Sridevi Nair, Assistant Professor, School of Business and Management, CHRIST (Deemed to be University), Bengaluru, Karnataka

Contemporary organizational changes brought about by the post-pandemic scenario call for more effective people management strategies. Modern organizations need to adapt to shifting environments and new competitive challenges. A performance management system is a tool used in organizations which enables teams and individuals to perform better, which enhances the organizations' performance. It is the need of the hour to upgrade the theories and techniques of the performance management system. This study assesses how the performance management system influences employees' social experiences from a neuroscience perspective. It is a quantitative study in nature. This study is based on information gathered from 270 employees in various Indian industries. For this study, ten performance management criteria were considered. The social experience components were assessed using the SCARF model, which is based on neuroscience. The findings suggest that some components of the performance appraisal system have a significant influence on the social experiences of the employee. The researchers suggest a performance appraisal model that would foster a brain-friendly

work environment based on their understanding of the relationship and influence of the different factors of the performance appraisal process on the quality of social experience. The finding is particularly significant for managers and organizations because it draws their attention to the important considerations for performance appraisal system planning and implementation in contemporary organizations.

KEYWORDS: *Performance Management System, Social Experiences, SCARF, Neuroscience.*

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Paper 06
Experimental Investigation of Manipulation and Moral Disengagement: The Game of Cheating

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Soumya Kanta Mishra, XLRI Jamshedpur
Anuj Jain, XLRI Jamshedpur

Academic cheating is practiced and reported in frequent manners across the globe. According to previous studies the academic pay-off is perceived as higher by students in management schools (Briggs et al., 2013). In this study, we aim to shed more light on peer manipulation that influences cheating behavior in presence of moral opposition of the participants (Baker & Mechtel, 2019), in a real-effort experiment. In our experiment, we observe that the manipulation effort of the peers plays a role in inducing collaborative cheating behavior for a threshold value of a student's moral belief.

We have adopted a mixed method to investigate our research question. The first study constitutes literature exploration followed by a deep semi-structured interview with (n= 30) business school students to discover the potential factors that influence unethical academic behavior like cheating.

Study 2 consists of a survey method where we collected data from a sample of (n=304) business school students. The items used to collect data are established scales for Academic dishonesty, Moral engagement, and Cheating behavior. Cronbach's alpha values for the three-dimension ranged from 0.7 to 0.9 demonstrating adequate reliability (Hair et al., 2014). In Study 3, an experimental investigation was carried. The experiment was conducted in two different phases namely lab experiment followed by field experiment. The experiment groups included proxy volunteers

present to actively manipulate others into committing the act of cheating. In consistence with previous literature, the results supported a significant impact of peer manipulation on the cheating behavior of participants. We have contributed by proposing a utility-based model in which students may collude in cheating beyond a degree of the moral threshold.

The findings of the current paper provide insight into the academic dishonesty influenced by the presence of manipulating factors of management students. The proposed utility also gives the degree of moral disengagement threshold beyond which the dominant payoff strategy prevails.

KEYWORDS: *Academic dishonesty, Cheating, Manipulation, Moral disengagement*

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Paper 07
A Mental Health Situation-Analysis Using a Deep Neural-Integrated Multi-Model Approach

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Hashmy Hassan, Assistant Professor, Department of Statistics,
Cochin University of Science & Technology, Kerala
Dr. Nimitha Aboobaker, Assistant Professor, School of Management Studies,
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Early detection of individuals, psychological stress and negative emotional reactions can help in resolving their psychological issues through early intervention, thus preventing them from negatively impacting their daily lives. Mental health plays a crucial role in personal and organizational development, and various factors, including social, familial, and professional, can lead to mental illnesses. The COVID-19 pandemic has further complicated this issue,

increasing psychological distress due to sudden changes in work and lifestyle. Therefore, this study aims to create a deep-learning model to identify early signs of mental states in individuals, which can assist stakeholders in developing effective policies and practices for

intervention. The main aim of this research is to analyze the mental states of participants using a Deep Neural Integrated method that combines textual, audio, and visual data to detect any signs of depression or risk. By scoring and categorizing user input, this approach can identify depression in subjects based on their texts, audio, and images. The study focuses on the subject's depression state, suicidal thoughts, severity, emotions, and PHQ-9 responses, utilizing three modules consisting of separate neural networks and a multi-model network to provide a comprehensive understanding of the individual.

This proposed framework reveals promising results, and its use of multiple datasets and neural network models adds novelty to the research. The methodology presented in this study provides a pathway to offer mental health support services that can help prevent the development of mental disorders in individuals. Additionally, this approach can be applied extensively for self-evaluation, teacher mentoring, and policymakers in various sectors to address the need for mental health treatment and aid individuals in managing psychological difficulties. Given that mental illnesses can be highly dangerous and destructive, regardless of age, this research project makes a valuable contribution to the field of medical diagnosis, understanding wayward behavior and law enforcement as well. The study's findings can also be useful in analyzing employee behavior in diverse organizations, as well as used as a screening technique during recruitment and selection process. Applications of the model can be extended to digital marketing scenarios, by retargeting of online ads, based on real-time emotion detection. Access to real-time data sets would enhance the model's forecasting ability, allowing for improved optimization in terms of time availability and high-performing systems.

KEYWORDS: *Deep Neural Networks, Mental Situation Analysis, Emotion Detection, Integrated Approach*

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" *I've had a wonderful experience so far, especially because you don't find Behavioral Science Conferences very often.* *"*

Anonymous Attendee

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Paper 08
Developing A High-Performance Work System in a Specific Department of an Indian Seaport for Improved Performance

Mitrabarun Ghosh, Ph.D, Assistant Professor, Department of Management, SRM University Sikkim

High Performance Work Systems (HPWS), one of the emerging management practices of modern-day organizations, are designed to enhance organizational performance by improving employee capability, commitment, and productivity. Background studies on HPWS have shown that the organizations adopting HPWS in different stages of their processes and activities tend to have better operational and financial performance compared to the organizations that do not follow. The studies have also demonstrated that innumerable organizations have gained cognizable benefits from the HPWS by adopting it as a quality and process improvement framework. Hence, for the purpose of understanding the applicability and exhaustiveness of HPWS in diverse organizational settings, it is felt that the implementation prospects of the performance improvement system must be studied from the viewpoint of a particular organizational setting. In this paper, an attempt has been made to design a High-Performance Work System for a particular department in a typical Indian seaport involving a large volume of logistic operations. A framework of HPWS implementation is proposed in the form of a scorecard for the marine department of a select Indian seaport where both the existing HR competency and required HR competency is compared with respect to the key performance indicators. The rationale behind selecting the marine department is that the particular department is unique to seaports and the critical judgment and resource involvement is maximum. To find the maximum performance output that can be derived from implementation, a causal model is proposed by making an analogy with Gibbs Free Energy Model of Thermodynamics, a closed reversible process model where the internal disturbance (entropy) is considered as an independent variable. Lastly, after analysis of the causal model, the HR planning and strategies with respect to the KPI priority and Human Capital Readiness are summarized.

KEYWORDS: *High-Performance Work System, Gibbs Free Energy Model, Process Maps, Key Performance Indicators, Human Capital Readiness.*

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> *The conference has been very enriching and insightful. It feels great to meet like-minded people and researchers who are as passionate as I am about my domain. This is the third time that I have attended BSIM but for me, the in-person mode of the conference has been especially very enriching.*

Raveena Gupta
Paper Presenter,
Research Scholar, Delhi University

ACADEMIC PRESENTATIONS POSTERS

Marketing
Sequential Contagion

Abhishek Kumar Jha, Doctoral Scholar, IIM Indore
Sanjeev Tripathi, Professor, IIM Indore

Marketing
Do Clickbait Articles and Non-Clickbait Articles have the Same Price?

Kadari Ruthwik Reddy, Cognitive Science Lab, IIIT Hyderabad
Kavita Vemuri, Cognitive Science Lab, IIIT Hyderabad

Marketing
Effect of Timing Sequence of Brand Promotion in an Online Video: An Eye-Tracking Study

Komal Suryavanshi, Research Scholar
Prasun Gahlot, Research Scholar
Surya Bahadur Thapa, Research Scholar
Dr. Aradhana Gandhi, Professor (Retail and Marketing)
Symbiosis Centre for Behavioural Studies, Symbiosis Institute of Business Management
Dr. Ramakrishnan Raman, Director, Symbiosis Institute of Business Management

Economics
Chronic Stress, Performance Pressure & Strategic Thinking: Lab Experimental Evidences

Dr. Savita Kulkarni, Assistant Professor, Gokhale Institute of Politics and Economics, Maharashtra

Economics
Incentivizing Girl Child: Evidence from a Conditional Cash Transfer Program in India

Soumya Pal, Doctoral Candidate, Public Policy, IIM Bangalore
Gopi Sankar G, Doctoral Candidate, Public Policy, IIM Bangalore

Economics
Quantum-Like Framework (QLF) in Behavioral Economics Neuroscientific Links and Applications

Sudip Patra and **Sivani Yeddanapudi**

Economics
Examining the Role of Behavioral Factors in Promoting Financial Inclusion and Shaping Public Policy

Amit Pandey

Behavioral Science in Management Conference, 2023

Finance

Can Google Trends Data Help Predict Stock Returns in Emerging Markets: Evidence from Cointegration and Quantile Regression Approach

Ritika Chopra, University School of Management Studies, Guru Gobind Singh Indraprastha University

Finance

Policyholders' Beliefs Responsible for Life Insurance Lapse Behavior: A Qualitative Study

Ritika Bhatia, Department of Management, BITS Pilani

Finance

Decoding the Highs and Lows Eye-Tracking Analysis of Graphical Interpretations in the Stock Market

Tanvi Narsapur, Cognitive Science Lab, IIIT Hyderabad
Dr. Kavita Vemuri, Cognitive Science Lab, IIIT Hyderabad

OB/HR

Impact of Emotional Intelligence on Job Performance Through Mediating Effect of Employee Alienation (EA): A Study among HEI Employees in Bangalore

Nisha Francis, Research Scholar, M S Ramaiah University of Applied Sciences, Bengaluru
K.M. Sharath Kumar. Professor, M S Ramaiah University of Applied Sciences, Bengaluru

OB/HR

Ingredients of Insider Frauds: An Empirical Analysis with Investigative Officers in Banks

Mr. Vipin Francis, Research Scholar, IIT Chennai
Dr. Neenet Baby Manjaly, Assistant Professor,
Adi Shankara Business School, Ernakulam, Kerala
Dr. Nimmi P M, Assistant Professor,
SCMS Cochin School of Business, Muttom

OB/HR

I Don't Want your Empathy; I Hope you are Compassionate! Investigating the Neural Roots of Social Entrepreneurship

Rai Siddhant Sinha, Doctoral Scholar, IIM Kozhikode

CHRONIC STRESS, PERFORMANCE PRESSURE & STRATEGIC THINKING : LAB EXPERIMENTAL EVIDENCES

Dr. Savita Kulkarni, Gokhale Institute of Politics and Economics, Maharashtra

Research Question: How does chronic stress with varying performance pressure affect strategic decisions of youth in the economic sphere?

Research method: Lab Experiment: 2*2 factor (unbalanced) double randomization

Chronic Stress: Health Epidemic of 21st Century- WHO

Proposed Model :

Chronic Stress → System I Thinking: higher reliance → Iterative Thinking capacity

Perfor-mance Pressure → Over-burdned cognitive processes → Social Preference

Online experimental sessions: Sept-Oct.2021; (Saturday & Sunday afternoons); Double-blind Anonymity, students of an institution.

Ethical approval and grant: GIPE, Pune.

Registration Phase
Collected Data:
Perceived Stress Scale (PSS)
Big Five Personality Inventory

Group formation based on Chronic Stress
- Median of PSS for the sample = 42
Control group (PSS ≤ 42) ($n_1 = 43$)
Treatment Group (PSS > 42) ($n_2 = 47$)

Experimental tasks related to performance pressure
Stroop Test
Maths quiz Multiplication & division*
Priming of entrance test*
*Manipulated performance pressure -
Low (n= 45%) vs. High (n = 55%)

Experimental decisions and outcome variables
Beauty Contest Game
Ultimatum game (Strategic)
Follow-up questions on each games
Personal information
Self-perceived difficulty levels, congitive processes

Randomization: Mean Equality for PSS score, BIF scores, age, 12th standard marks (t-tests); Proportion equality w.r.t. caste, income, self-perceived math ability, concentration power, except for gender (chi-square tests)
OLS Regression: Total Stress = f(Neuroticism (+), Extraversion(-); sleep, exercise(insignificant))

Truncated regression outputs
M.I<- BCG Median deviation = f(actual & perceived higher pressure (-), Agreeableness (+))
M.II<-: UG Transfer= f (self-reported pressure (-))
M.III: Anova & Tukey's HSD test: Main & Interaction effects (Insign.)

Research Agenda:
1) Multi-modal regression
2) Mediation (manipulated mediator)

Preliminary Findings:
Performance pressure in lab exerted higher level of iterated thinking and selfishness.

Can Google trends data help predict stock returns in emerging markets: Evidence from Cointegration and Quantile Regression approach

Ritika Chopra | ritika.chopra@jimsindia.org| JIMS Rohini Sector-5, New Delhi-110085

Introduction
- Stock market prediction has continued to be an attractive topic among academia and practitioners cite.
- The internet data provides detailed records of decisions that traders have made, as a result of which such records are gathering considerable scientific attention (Moat et al., 2013)
- Notably, in times of high volatility, people tend to use search engines including Google trends (Nguyen & Pham, 2018) more extensively for investment-related information as volatility in the stock market returns stay high (Fang et al., 2020).
- This paper explores the correlation and the possibility of predictability between investor sentiments as measured by Google trends data and stock returns of the Indian stock market.
- The objective of this study is to analyse the impact of google trends data on stock returns in the Indian stock market.

Data and methodology
- Sample: To explore the impact of Google trends data on stock returns in India, the study analyzes the relationship between returns from key market index and search volumes of key terms related to the financial performance (Jiang, 2016), namely Nifty 50 index and top 10 constituents by weightage listed on Nifty 50, as on August 30, 2019 (N.S.E., 2019).
- Time period: 10 years' monthly data of period ranging from April, 2009 to March, 2019
- Analysis method: Fixed effects regression, panel data econometric methodologies including cross-sectional dependence test (through the Breusch-Pagan LM, Pesaran scaled LM and Pesaran CD test), second-generation unit root tests (CIPS and CADF), the Westerlund (2007) statistical analysis of co-integration (to evaluate the number of co-integrating equations between the variables), Dumitrescu & Hurlin (2012) Granger non-causality test and quantile regression technique followed with the mean group and augmented mean group tests.

Table 1. List of variables

S No	Name of the Index/Stock
1.	Nifty 50 index
2.	HDFC Bank Ltd
3.	Reliance Industries Ltd
4.	Housing Development Finance Corporation (HDFC)
5.	Infosys Ltd
6.	ICICI Bank Ltd
7.	Tata Consultancy Services Ltd
8.	ITC Ltd
9.	Kotak Mahindra Bank Ltd
10.	Larsen & Toubro Ltd
11.	Axis Bank Ltd

Table 2. Descriptive statistics

	GT_Index	GT_Stock	Return_Stock	Return_Index	Volume
Mean	82.40164	27.47705	5.766214	8.847973	58101275
Median	72.00000	19.00000	5.935830	8.809907	22462648
Maximum	181.0000	100.0000	7.994099	9.371451	7.19E+08
Minimum	35.00000	2.000000	2.348455	8.013327	1014354.
Std. Dev.	35.28547	21.51109	1.035174	0.297393	77538428

Table 3. Correlation Analysis

	Return_stock	GT_index	GT_stock	Return_index	Volume
Return_stock	1	0.003282	0.329840***	0.495138***	-0.191063***
GT_index		1	0.316389***	0.093594***	0.125015***
GT_stock			1	0.724308***	-0.143716***
Return_index				1	-0.212596***
Volume					1

Table 4. Unit root test

Variables\Statistic	Level		First Difference	
	CIPS	CADF	CIPS	CADF
Return_stock	-4.029***	-3.276***	-6.190***	-6.190***
Return_index	2.610***	2.610	2.610***	2.610
Volume	-6.190***	-5.256***	-6.190***	-6.190***
GT_stock	-4.846***	-4.050***	-6.190***	-6.190***
GT_index	2.610***	2.610	-6.190***	2.610

Table 5. Fixed Effect Regression

Dependent Variable: Return_stock				
Method: Panel Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.971951	0.255778	-3.799974	0.0002
Return_stock(-1)	0.838268	0.015395	54.45031	0.0000
Return_index	1.008102	0.059820	16.85220	0.0000
Return_index(-1)	-0.786671	0.060999	-12.89638	0.0000
Volume	-0.001900	0.006970	-0.272563	0.7852
GT_stock	0.024736	0.008995	2.749938	0.0061
GT_index	-0.020734	0.008615	-2.406814	0.0162
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.990052	Mean dependent var		5.778281
Adjusted R-squared	0.989927	S.D. dependent var		1.026896
S.E. of regression	0.103066	Akaike info criterion		-1.693768
Sum squared resid	12.68327	Schwarz criterion		-1.626352
Log likelihood	1040.730	Hannan-Quinn criter.		-1.668383
F-statistic	7921.707	Durbin-Watson stat		2.489161
Prob(F-statistic)	0.000000			

Figure 1. Quantile Regression Line Graph

Figure 2. Quantile Process estimates

Hypotheses

Hypothesis	Supported/Not supported
H0: Stock return, stock return (at the lag of 1), index return, index return (at the lag of 1), traded volume of the stock on the given day, Google search query for the index, and Google search query for the stock are correlated with each other.	Supported
H1: Stock return (at the lag of 1), index return, index return (at the lag of 1), traded volume of the stock on the given day, Google search query for the index, and Google search query for the stock help predict the stock returns.	
H1a: Stock return (at the lag of 1) helps predict the stock returns.	Supported
H1b: Index return helps predict the stock returns.	Supported
H1c: Index return (at the lag of 1) helps predict the stock returns.	Supported
H1d: Traded volume of the stock on the given day helps predict the stock returns.	Not supported
H1e: Google search query for the index helps predict the stock returns, and	Supported
H1f: Google search query for the stock helps predict the stock returns	Supported
H2a: There exists no long-run relationship between stock return, index return, traded volume of the stock on the given day, Google search query for the index, and Google search query for the stock.	Not supported
H2b: There exists a long-run direct relationship between stock return, index return, traded volume of the stock on the given day, Google search query for the index, and Google search query for the stock.	Supported
H2c: There exists a long-run indirect relationship between stock return, index return, traded volume of the stock on the given day, Google search query for the index, and Google search query for the stock.	Supported

Result
- Our findings indicate that the variables under reference are correlated with each other.
- We establish a predictive relationship of all independent variables (except traded volume of the stock) with the stock returns.
- Our results also indicate a long-run direct relationship of stock return with index returns, traded volume of the stock, and Google trends data of the stock, and long-run indirect relationship of stock return with Google trends data of the index.
- The results shall enable financial institutions and policy makers to formulate more informed decisions and timely monitor the Google trends data in order to predict the stock returns

Examining the role of Behavioural factors in promoting financial inclusion and shaping public policy

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1. Introduction

❖ In the last few decades, a new approach to economics called "behavioural economics" has been getting more and more attention.

❖ In fact, many of the founders of economics knew that Psychological and Behavioural factors play an important role in how people make financial decisions (Katona 1980).

❖ The motivation is derived from the realisation that, despite progress in financial infrastructure and advancement in technology still significant portions of the population and the small business sector remain excluded from financial services.

❖ The underlying reason behind this study is that since there is a lack of consensus regarding financial inclusion's impact on economic growth in the research field, this study tries to contribute by examining whether behavioural factors (BF) mediate between financial inclusion and economic development and how they can help in changing public policy.

2. Methodology

2.1 Design of research

❖ This study targeted academics, banking and non-banking participants of major cities in north India.

❖ Data for this study were collected from customers of public and private banks. The collection of data was done through a structured questionnaire using a 5-point scale.

❖ The authors have selected different regions of north India, viz. Punjab, Haryana, Chandigarh, Uttarakhand and Himachal Pradesh.

❖ The study used the Partial Least Squares (PLS) approach

3. Result and analysis

3.1 Measurement Model

❖ The measurement model's output, as shown in Table 1, evaluates the fit between the research model and the data.

❖ For the measurement model analysis, three key criteria were used: factor loadings, convergent and discriminant validity.

Table 1: Factor loadings and quality criteria (AVE, composite reliability, and Cronbach alpha)

| Variable	Items	Loadings	R^2	α	CR	AVE
Behavioural Factors (BF)	COGNITIVE_BEHAVIOUR	0.737	0.654	0.875	0.902	0.535
	CULTURE	0.795				
	HERD_MENTALITY	0.765				
	PSYCHOLOGICAL	0.749				
	RISK_ATTITUDE	0.766				
	SELF_EFFICACY	0.630				
	SOCIAL	0.720				
	FINANCIAL_KNOWLEDGE	0.678				
Economic Development (ED)	ECOD.1	0.798	0.702	0.891	0.914	0.573
	ECOD.10	0.636				
	ECOD.08	0.606				
	ECOD.2	0.838				
	ECOD.3	0.763				
	ECOD.4	0.793				
	ECOD.5	0.789				
	ECOD.6	0.798				
Financial inclusion (FI)	FINANCIAL_ACCESSIBILITY	0.788		0.807	0.874	0.636
	FINANCIAL_AFFORDABILITY	0.861				
	FINANCIAL_AVAILABILITY	0.830				
	FINANCIAL_SCHEMES	0.701				

Source: Self Calculated

4. Conclusion and Discussion

❖ Recently, the government of India has taken several initiatives to increase the level of FI in an economy (Chakravarty & Pal 2013).

❖ FI aims to increase public access to various products and services to eliminate economic and social inequalities (Kulkarni & Ghosh, 2021). However, as per Huggins *et. Al,* (2018) the high financial knowledge, herd mentality and self-efficacy in society enhance impact of financial inclusion on economic growth.

❖ This study supports that the mediation of Behavioural factors has enhanced the impact of Financial inclusion on Economic growth. The direct effect of Financial Inclusion -> Economic Development, (B:0.234) is lower than indirect effect through behavioural factors (.809*.637= .515).

❖ Thus the understanding of behavioural factors is important to have greater impact of financial inclusion on economic growth.

3.2 Structural model

❖ After the proposed model was framed, the structural modeling was established through PLS-SEM to confirm the relationships of the proposed model between FI and economic development through behavioral factors (BF).

Figure1: VB-SEM Model shows relationship between variables.
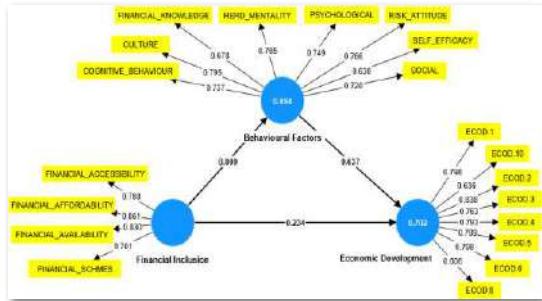
Source: Self compilation through Smart PLS-SEM 4.0

Table 2: Structural model analysis

Testing of Hypotheses	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Values	P Values	Evaluation
H1: Behavioural Factors-> Economic Development	0.637	0.643	0.094	6.790	0.000***	Empirically Supported
H2: Financial Inclusion -> Behavioural Factors	0.809	0.809	0.046	17.437	0.000***	Empirically Supported
H3: Financial Inclusion -> Economic Development	0.234	0.226	0.110	2.128	0.033**	Empirically Supported

*Source: Self Calculated [***p≤.001; **p≤.01; *≤.05]*

❖ In the last phase of data analysis, the structural model is evaluated by analysing path significance, the influence of each hypothesised relation, and the research model's explanatory ability.

❖ It is important to examine whether the usage, digitisation, technology and gender perspective are important drivers of FI.

3.3 Importance-Performance Map Analysis (IPMA)

❖ Figure 2 shows the results of the construct level IPMA on the model for the endogenous construct ED.

Figure 2: IPMA matrix for economic development and BF Model.

Source: Self compilation through Smart PLS-SEM 4.0

Effect of Timing Sequence of Brand Promotion in an Online Video-an Eye-Tracking Study

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INTRODUCTION

- Online videos are becoming a hub for advertisements, overtaking traditional media like television broadcasts and print
- Embedded marketing showcases products or brands in between the created content, projecting brands in their natural process of narration in online videos
- Brand managers worldwide use embedded marketing as an important marketing tool to convince viewers subtly to buy the endorsed products
- Impact of the timing sequence of brand promotion as embedded marketing in online videos on viewers' attention and brand awareness remains uninvestigated and represents a knowledge gap

LITERATURE REVIEW

Author	Summary of Paper
Simmonds et al., 2020	Advertisers focus on video marketing stimuli to help customers remember their brands and increase their purchase intent
Bigne et al., 2021	Viewer's visual attention is positively impacted by the interactions between social media content and advertising content in social media online advertising
Belanche et al., 2020	Impact on viewer recall due to different timing sequences of the brand name shown in YouTube videos advertisement
Mandler, 1984	Viewers' association with the ad content when brand is introduced at the beginning of a video
Teixeira et al., 2010	Brand names introduced at the end of the video helps in persuasion
Sharma et al., 2022	Product placement is a marketing strategy used by businesses to advertise their goods and services
Tan et al., 2021	Advertising on social media has become an important medium for alluring and retaining customers
Frade et al., 2021	The increased internet penetration is an essential factor in boosting online advertisement
Chan et al., 2016	Product placement is considered a subtle sales strategy and is sometimes thought to be more effective than conventional advertising due to its less distracting nature

METHODS

- Convenience sampling method
- Eye-tracking experiment using Tobii tracker to assess visual attention by measuring:-
  - FD (Fixation Duration)
  - FC (Fixation Count)
- Stimuli was the Youtube video where Product placements were at the:-
  - Beginning of the video (Start to 1/3rd)
  - Middle of the video (1/3rd to 2/3rd)
  - Towards the end of the video (2/3rd to End)
- Analysis using SPSS version 25
- Areas of Interest (AoI) to generate visualisation data (heat maps), placed on the:-
  - Brand name
  - Product name
- In Heat maps, the fixation zones are colored in the red-yellow-green color spectrum:-
  - Red: longer FD
  - Yellow: medium FD
  - Green: shorter FD
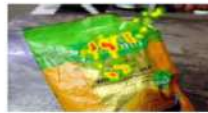
RESULTS

- Kruskal Wallis H test was used to address the impact due to sequencing of the product placement in the video
- FD on the brand name was not significantly impacted due to the sequencing of the product placement in the video
- FC on the brand name was significantly impacted due to sequencing of the product placement in the video
- There was a significant difference in FC on the brand name between the product placement at
  - the beginning and middle of the video ($p = 0.000$),
  - in the middle and end of the video ($p = 0.008$) and
  - the beginning and end of the video ($p = 0.008$)
- The FC on brand name for product placement at the
  - beginning of the video (M = 2889.85, SD = 482.69)
  - middle of the video (M = 138.71, SD = 81.03);
  - end of the video (M = 1701.42, SD = 359.96),
  thus, showing that the highest attention on the brand name was at the beginning of the video, followed by at the end of the video and in the middle of the video respectively
- FD on product name was not significantly impacted due to sequencing of the product placement in the online video
- There was a significant difference in FC on product name between the product placement in the
  - beginning and the middle of the video ($p = 0.000$),
  - middle and at the end of the video ($p = 0.011$)
  - beginning and at the end of the video ($p = 0.006$)
- Heat maps showed that there are differences in visual attention (FD and FC) due to different sequences of product placement in the online video
- Effect of visual attention on Brand Awareness was tested using Linear Regression Analysis, which showed FD and FC are not significant predictors of brand awareness

CONCLUSIONS

- Findings suggest that product placement at the beginning of the video drew attention to the brand name and product name more frequently than the other two sequences of middle and end of the video
- Frequency of attention was highest on product placement at the beginning of the video, followed by at the end of the video and in the middle of the video respectively, in line with the dynamic attention theory
- The different sequences of product placement in the video do not change the brand awareness of the viewers
- This study offers practical implications that will help content developers to increase the viewer's engagement focus on areas where they can include embedded marketing in the video
- Placing the product/brand at the beginning or the end of the video offers a higher possibility of getting noticed, thus providing a better opportunity for the marketer and content creator to influence the mass audiences

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Impact of Emotional Intelligence on Job Performance Through Mediating Effect of Employee Alienation: A Study among HEI Employees in Bengaluru

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K M Sharath Kumar, Professor, FMC, Ramaiah University of Applied Sciences, Bengaluru

Introduction

"When dealing with people, remember you are not dealing with creatures of logic, but with creatures of emotion"- Dale Carnegie

Emotional Intelligence (EI) is a multi-dimensional concept that connects emotion and cognition to enhance human interactions.

In contrast, **Employee Alienation (EA)** is a negative work situation where employees get detached from their work resulting in undesirable outcomes.

Need for the Study

In today's world, HEIs are challenged to confront the impact of global accreditation and rankings as well as policy changes posed by the Government in parallel. These additional challenges apart from the academic stress can result in EA and low JP among HEI employees.

Objectives

EI and EA are deemed as critical components in employee JP. The Objectives of the Study are displayed below:

Based on theories of **EI, EA, Affective Events Theory, Emotion Contagion Theory and Work Adjustment Theory**

Methods and Methodologies

Two strata (Employment Type): (Sample Size; 532 Teaching-368, Non-Teaching-164)

Scales: Emotional Competency Inventory (ECI 2.0) (Boyatiz, 2000), Mottaz's (1981) EA scale and Individual Work Performance Scale (Villagrasa et al., 2019).

5-point Likert scale to rank responses

The Methodologies Used in the Study

Results

15% variation in EA based on EI Level

05% variation in EI and 12% variation in EA among teaching and non-teaching staff

Exploring the Casual Relationships-EI-JP, EI-EA and EA-JP

The study established an empirical substantiation of a positive relationship between EI and JP (β: + 0.41)

Further, negative association between EI-EA and EA-JP in Indian HEIs were derived

EI accounts for **43% of negative variation in EA in HEIs**

EA negatively influence JP in HEIs by 32%

EI-EA-JP Model with Mediation and Moderation Analysis

Mediation Analysis: EA found partially mediating the EI-JP relationship with significant direct (β: -0.39) and indirect (β: -0.11) effect

Moderation Analysis: Employment type–Teaching & Non-teaching moderates only EI-EA relationship

Relationships	Critical Ratio of Difference	Threshold
EI-JP	+.38	±1.98
EI-EA	-2.23	

K-Fold Cross Validation

Dimensions	Q² Predict
SE	0.06
ML	0.05
PL	0.08
JP1	0.12
JP2	0.07
JP3	0.03

Model validated with 100% accuracy in predicting EI-EA-JP relationship in HEIs

Discussion and Conclusion

- Impact of EI on JP is moderate and more or less same among both teaching and non-teaching staff in HEIs
- However, Employment Type moderates EI-EA relationship in HEIs with a 10% variation
- HEIs can see EI as a critical success factor in reducing EA and improving employee JP
- Established relationships help the leadership in HEIs to investigate and control the work contexts that ignite negative emotions in employees.
- In addition, the findings help to focus on training and other educational activities to improve EI of HEI employees to mitigate EA and improve JP
- Study aid in prioritizing the critical EI dimensions and training employees with a focus on Employment type.

Way Forward

- Study findings have multi-fold implications for the senior management in terms of nurturing an emotionally intelligent workforce for the success of Indian HEIs
- Longitudinal study with Mixed method approach can bring better clarity and generalisability
- Organisational Culture as an influencing factor in EI-EA-JP relationship can give new dimensions
- By considering HEIs of other states of India, can expand the model to other Indian HEIs

References

Ingredients of Insider Frauds; An Empirical Analysis with Fraud Preventive Officers in Banks

Authors
1) Mr. Vipin Francis
2) Dr. Neenet Baby Manjaly , PhD
3) Dr. Nimmi P M, PhD

Affiliations:
1) Research scholar – IIT Madras,
2) Asst. Professor, Adi Shankara Institute of Engineering and Technology, Cochin
3) Asst. Professor, Amrita School of Business, Coimbatore.

INTRODUCTION

Financial crime has received increased attention in recent years. Professional ethics is extremely important in the banking sector since the impact of any possible harm is not limited with the customer at focus, but also has the potential to get systemic by spreading to a large number of professionals and harm society as a whole (Herzog, 2019; Tseng, 2019).

This paper aims to conduct in-depth research in commercial banks to access, recognise and curtail the behavioural characteristics involved in occupational frauds/ insider frauds. Thereby diminishing the likelihood of its occurrence.

The study reviews the existing theoretical framework regarding the reasons why employees commit fraud and to build on the theory to develop a model to better enhance our understanding behind the major factors which lead to the perpetration of fraud.

THEORETICAL SUPPORT

Fraud theory argues that three conditions leading to frauds
(1) Incentives/pressures. Management or other employees have incentives or pressures to commit fraud.
(2) Opportunities. Circumstances provide opportunities for management or employees to commit fraud.
(3) Attitudes/rationalization. An attitude, character, or set of ethical values exists that allows management or employees to intentionally commit a dishonest act, or they are in an environment that imposes pressure sufficient to cause them to rationalize committing a dishonest act.

The three conditions present when fraud happens

Opportunity is the condition of fraud where management can have the most impact by establishing proper controls and procedures

FINDINGS

Opportunity, pressure and rationalisation are important factors which leads to insider frauds in banking industry.

Among these factors Perceived Opportunity shows the highest impact (B= .55; P<0.01) on employee fraud followed by financial/ work related pressure (B= 0.46; P<0.01). Rationalisation is showing the least impact on employee fraud (B= 0.37; P<0.01).

CONCLUSION

The major drivers, which plays a crucial role in compelling people to commit fraud was identified. The perceived opportunity is identified as the key factor which attributes for employee frauds.

The financial/ work related pressure also is a significant factor which leads to employee fraud. The rationalization is yet another significant factor which leads to employee fraud. This paper may support policymakers of the Indian banking system to create a more robust environment within the banking system to reduce the likelihood of insider frauds.

SIGNIFICANCE OF THE STUDY

In banking sector, the credit related frauds are witnessing a declining trend during the couple of years whereas card/internet related and insider frauds are on the rise. The study is highly significant to determine the key components that are attributing to insider fraud.

OBJECTIVES OF THE STUDY

- To recognize the major antecedents of internal fraud in banks.
- To curtail the constituents of internal fraud thereby reducing the likelihood of its occurrence.
- Enforce better fraud management in the organization.
- To determine the significant internal fraud indicators in the banking sector, thereby enabling the banks to curtail the internal frauds and reducing the likelihood of its occurrence which eventually paves the way for better fraud management in the organization.

METHODOLOGY

Purposive sampling technique is used for collecting data. Sample size is 80 datasets. Population includes all fraud preventive / HR/ER/vigilance officers in banking sector across country. Samples include vigilance officers working in public sector banks.

Data collected with standardised scale using online structured questionnaires.

ANALYSIS

The correlation and regression analysis of the datasets was carried out using Warp PLS 7.0. The structural equation modelling was used to bring out the relationship between the endogenous and exogenous variables.

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INAUGURAL CEREMONY

Dr. Bharat Bhasker is the Director, Indian Institute of Management, Ahmedabad. An alumnus of IIT Roorkee, Dr. Bhasker obtained a Ph.D. and Master's Degree in Computer Science from the Virginia Polytechnic Institute and State University, USA. Previously, amongst several other capacities, Prof. Bhasker served as a Professor of Information Technology and Systems at IIM Lucknow. Prof. Bhasker was honoured with the, 'Best Director of Business Schools' award for transforming IIM Raipur to a great place to work and its exponential growth. Mohal Lalbhai is the founder of Motor Matter Works and a University of Sheffield alumni with a degree in Materials Science. Lalbhai is building 'Matter' that is set to drive sustainable change aided by technology. In November 2022, Matter unveiled India's first geared EV motorbike which is set to revolutionize the future of mobility in India. Prof. Arvind Sahay is a Professor of Marketing & International Business and the Chairperson of the NSE Centre for Behavioral Science at IIMA. Prof. Sahay is also the author of, 'Brands & the Brain' published by Penguin Random House in 2022.

The first in-person conference by the NSE Centre for Behavioral Science (NSE CBS) was declared open on April 04, 2023 by Prof. Bharat Bhasker, Director of the Indian Institute of Management, Ahmedabad. Accompanying him were Chief Guest and Keynote Speaker, Mohal Lalbhai, Founder of Matter Motor Works and Prof. Arvind Sahay, Professor of Marketing & International Business and Chairperson, NSE CBS at IIMA. The inaugural ceremony witnessed over 130 attendees from multidisciplinary backgrounds including academia and industries.

Prof. Sahay began by elucidating the centre's vision to the audience. He explained the concept of Behavioral Science and highlighted the importance of its applications to real-world problems. Prof. Sahay further elaborated on how the NSE CBS helps achieve this by acting as a mediator between literature and real-world applications.

> *The purpose of this conference is to provide the space for emerging researchers to come and meet at least once a year but hopefully more, to build collaborations, and to scale the eco-system to create more impact. Our country needs more such applications of behavioural science.*
>
> **Prof. Arvind Sahay**

> *Conferences like BSIM are a good opportunity for academia and industry to come together and explore possibilities and learn from the latest research. The level of research in this niche area is unparallel in India and with presentations from institutions in India and abroad, we would want this to be the event on the calendar of all the senior researchers in the area of behavioural science.*
>
> **Prof. Bharat Bhasker**

Prof. Bharat Bhasker emphasized the BSIM Conference as being a platform for, 'free exchange of ideas' where industry and academia collaborate to learn from each other's novel ideas. In addition to explaining the future scope of Behavioral Science (BeSci), Prof. Bhasker also touched upon the necessity of applying behavioral science to all fields, across all levels and functional disciplines. He stressed that the behavioural science approach to management provides a more nuanced view of management as it impacts different dimensions of management such as group dynamics, motivation, communication, pricing, branding, customer decision making, political science, voter behaviour and leadership.

Centre for
Behavioral Science

Mohal Lalbhai spoke on the journey of his enterprise, Matter Motor Works, including the motivation behind the start-up, its vision, and its rough yet adaptive journey through the pandemic.

> " *The vision has to be larger than a single individual, it has to be larger than a single organization.* "
>
> **Mohal Lalbhai**

Lalbhai also touched upon the stigma and the general attitude towards the word, 'startup' and that one can help eradicate such perspectives by focusing on the consumers and being more consumer-centric. Lalbhai believes that being consumer-centric is the main deal for any enterprise and that all values revolve around it.

Behavioral Science in Management Conference, 2023

Retail Investor Behavior Evolution During and After the Pandemic: Implications for Financial Markets in India

Dr. Tirthankar Patnaik is the Chief Economist at the National Stock Exchange of India with over two decades of experience in the Indian capital markets, academic research, credit research in macro and sector strategy, quantitative finance, and consumer banking. Prof. Joshy Jacob is an Associate Professor in the Finance and Accounting Area at IIMA while Prof. Arvind Sahay is a Professor of Marketing & International Business and the Chairperson of the NSE Centre for Behavioral Science at IIMA. Prof. Sahay is also the author of, 'Brands & the Brain' published by Penguin Random House in 2022.

The panellists presented their views to the audience at the BSIM 2023 Conference on April 04, 2023. The panel discussion began with Dr. Patnaik sharing with the audience some interesting research and findings that the NSE had undertaken to study the participation of Indian stock markets and investor behavior in the past three and a half years despite the uncertainties. A few highlighted conclusions from their research included interesting findings. Indian equities outshined their peers in global markets by a margin with a year-to-date gain of 5.7% in 2022 with increasing participation from retail investors in comparison to both foreign and domestic institutional investors, owing to a greater pace of digitization such as easy trading online platforms, and changing financial conditions over the last three years. This period also experienced significant growth in new investor registrations which augmented net investments in the equity markets. Despite the recent dip in retail turnover, the number of retail investors trading in the cash market and derivatives markets remained well above the pre-pandemic levels and their research expects a significant amount of this participation to remain persistent in the coming years.

" *Indian markets have done well last year despite the big drop in global markets and a lot of macro background was the reason what could be attributed to why retail investors came into the markets.* "

Dr. Tirthankar Patnaik

Prof. Joshy built on these findings using evidence from recent studies in the literature to investigate the kind of investments that were taken up by the retail investors especially Robinhood investors (US market) where one can trade commission-free—whether it helped the market at all, and whether or not it portrayed them as outrightly, 'stupid' or wise investors of providing liquidity and stabilizing the market. The number of marketable limit orders placed by 'Robinhood' investors particularly jumped from 320 billion in January 2020 to more than 800 billion between the end of March, 2020 and the first week of April, 2020. This suggested aggressive trading among 'Robinhood' investors and gave rise to the question of whether these stocks were worse compared to those less-populated by them. Surprisingly, the 'Robinhood' investor stocks had done relatively well and earned an alpha (after adjusting for factors such as profitability, investment factor, momentum, etc.). Prof. Jacob further added that all supporting literature from the pandemic era suggests that their behavior was a stabilizing force for the market by providing liquidity and the alpha further seemed to be remarkable depicting that the wisdom of the crowd helped stabilize the market through their powerful coordination mechanism which made them stand out.

Prof. Sahay questioned why the 'stupid' behavior of the retail investor turned out to be wise in retrospect using theories of behavioral biases i.e., a) overconfidence bias and b) bias of averaging which ultimately welcomes herding behavior. In 2020 it was capital flowing out of foreign and domestic institutions that were back in the game by the third quarter of the year. Retail investors observed the markets go up by 50% from the drop which strengthened the demonstration effect in behavioral finance i.e., investors were interested in markets where higher actions were going on thus giving rise to the increased participation of retail investors in 2021. Prof. Joshy argued that this may be a short-term phenomenon of characteristic market rise and that the behavior of such investors may not look that remarkable in the future.

> " *The wisdom of the Robinhood investors seemed to be helping to stabilize the market. I am usually someone who takes a behavioural view and stupid view about the retail investors, but I have argued the reverse today.* "

Prof. Joshy Jacob

Centre for Behavioral Science

BSIM 2023
April 4 - 5, 2023

Organised by
The Centre for Behavioral Science in Finance, Economics, and Marketing at the Indian Institute of Management Ahmedabad in association with the NSE Ltd.

▶ Panel Discussion 01

Retail Investor Behavior Evolution During and After the Pandemic: Implications for Financial Markets in India

Tuesday | April 04, 2023 | 04:00 PM to 05:30 PM

Panellists

Dr. Tirthankar Patnaik
Chief Economist,
National Stock
Exchange of India

Prof. Joshy Jacob
Associate Professor,
Finance and Accounting Area,
IIM Ahmedabad

Moderator

Prof. Arvind Sahay
Chair, NSE-CBS & Professor,
Marketing & International Business,
IIM Ahmedabad

Behavioral Science in Management Conference, 2023

PANEL DISCUSSION 02

Consumer Emotions & Decision Making: Implications for Customer Centricity

Adrian Terron is the Head of Corporate Brand and Marketing Strategy at the Tata Group. Terron has authored several papers on consumer insight, shopper and retail dynamics, and innovation. Prof. Krishna Prasad Miyapuram is an Associate Professor of Cognitive Science and Computer Science at the Indian Institute of Technology, Gandhinagar and one of the founding members of the Centre for Cognitive and Brain Sciences. S. Subramanyeswar is the Group CEO at MullenLowe Lintas Group and Chief Strategy Officer of Asia Pacific & Head of the Global Planning Council of MullenLowe Group. Prof. Arvind Sahay is a Professor of Marketing & International Business and the Chairperson of the NSE Centre for Behavioral Science at IIMA. Prof. Sahay is also the author of, 'Brands & the Brain' published by Penguin Random House in 2022. The panellists presented their views to the audience at the BSIM 2023 Conference on April 05, 2023.

MR. ADRIAN TERRON   PROF. ARVIND SAHAY   PROF. KRISHNA PRASAD MIYAPURAM

Customer centricity by definition is the ability of people in an organization to understand customers' situations, perceptions, and expectations. According to Adrian Terron, every company wants to achieve customer-centricity, but there happens to be tension between the resources that the company or organization has and the priorities of the customers. He added that, "Customers want to be pampered, while organizations want to be profitable". Customers think they know what they want but it often becomes difficult for them to articulate it. He suggests that for a company to be customer-centric, they need to understand what the customer wants even before they know they want it, and most importantly even before their competitors know about it. Studying these trends, and decoding its requirements with their CMOs is what has helped Tata Sons achieve customer centricity, he added.

> " *There is a fundamental tension between the resources and priorities a company and organization have and the asks and priorities of customers. Customers want to be pampered, and companies want profitability.* "
>
> **Adrian Terron**

Prof. Miyapuram added a few cognitive elements to these 'trends' or rather customer emotions and suggests that it is important to create a sense of value from the product design which resonates with every customer. He gave an example of aromas of food being added to laundry detergent powders to stimulate the human brain as they seem more familiar than floral fragrant. When companies are aware that there is a change in trends and needs and adapt to the same, that is when they can achieve customer centricity, according to Prof. Miyapuram. He also added that products need to build an emotional connection with their customers and focus on increasing the customer experience to have them glued to the brand even during an upgrade.

In value proposition, from a cognitive perspective, there was this idea about a common currency or valuation, and the idea is that the consumer is going to evaluate. Now, how do I gain this value from the emotional aspect of the design of a product?

Prof. Krishna Prasad Miyapuram

Mr. Subramanyeswar supported these thoughts further by introducing the idea of 'behavioral change' among customers using behavioral change interventions. He took the very popular example of the Tata Tea Jaago Re campaign which enforced that tea should not just wake you up, but should awaken you. An influential campaign, this gave rise to what Subramanyeswar calls 'ethnic pride,' thus inducing a behavioral change. He added that when you overlay behavioral change interventions on top of these trends and the behavior of people, then one ends up doing something that is customer-centric that resonates with them and caused behavioral changes. Consumer insights is another salient factor in achieving customer centricity. A mutually agreeable perspective was that only if a company utilizes the first mover advantage to its capacity in decoding and understanding trends and applying appropriate behavior change interventions one can be successful. Acting on the above, without a market lead may not always help achieve expected results.

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BSIM 2023

April 4 - 5, 2023

Organised by
The Centre for Behavioral Science in Finance, Economics, and Marketing at the Indian Institute of Management Ahmedabad in association with the NSE Ltd.

▶ Panel Discussion 02

Consumer Emotions & Decision Making: Implications for Customer Centricity

Wednesday | April 05, 2023 | 09:15 AM to 10:30 AM

Panellists

Mr. Adrian Terron
Head, Corporate Brand & Marketing Strategy, Tata Sons

Mr. S. Subramanyeswar
Group CEO, MullenLowe Lintas Group

Prof. Krishna Prasad Miyapuram
Associate Professor, IIT-Gandhinagar

Moderator

Prof. Arvind Sahay
Chair, NSE-CBS & Professor, Marketing & International Business, IIM Ahmedabad

SPEAKER TALKS

Brain Machine Interface Systems: Interpreting and Translating Thoughts into Actions

With over 21 years of academic experience and over 05 years of experience within the industry, **Dr. Vinod A. Prasad** *presently works as a Professor & Director of Research in the InfoComm Technology Department at the Singapore Institute of Technology (SIT). Dr. Prasad presented an interesting talk on April 04, 2023 at the BSIM 2023 Conference.*

Brain-Machine Interfaces (BMI) are systems that translate the user's intention coded by brain activity measures into a communication and control signal without using the activity of any muscles or peripheral nerves. The decoded neural patterns can potentially be employed to substitute motor capabilities (e.g., brain-controlled prosthetics for amputees or patients with spinal cord injuries, brain-controlled wheelchairs); improve motor and cognitive (attention, memory, emotion, etc.) using neurofeedback training. BMI has emerging applications in other domains that include (but are not limited to) autonomous vehicles, advanced driver assistance systems, biometric identification, brain fingerprinting, neuromarketing, neuroergonomics (evaluation of cognitive workload, stress, vigilance, and fatigue), training of personnel who are required to perform zero-error-tolerance operations (aircraft pilots, air traffic controllers, soldiers), performance error-based reinforcement learning, etc.

Prof. Vinod Prasad's talk commenced with an overview of BMI and its applications. The talk further delved into the methods for brain signal acquisition and their comparison, basics of Electroencephalogram (EEG), analysis of EEG signal features that encode neural signatures of various mental tasks, EEG signal processing & machine learning tools, and design considerations for BMI. Further, the talk covered some selected non-invasive BMI research work from one group (with video demonstrations), which includes decoding of movement kinematics from EEG, EEG-based neuroimaging, brainwave-controlled computer games for improving cognitive skills, biometric identification, emotion detection, image and audio familiarity detection, etc. The talk also covered the application of BMI in neuromarketing and neuroergonomics.

Brain-computer interface (BCI) requires expertise from a number of areas including but not limited to sensor technology, machine learning AI, embedded systems, neuroscience, behavioural science, robotics, game design, virtual reality etc. It is interdisciplinary in nature.

> *If it took a pace-maker 50 years to transition from a bulky equipment to a tiny piece implanted in the chest, with the current advancement of technology, I am sure it won't take 50 years for BCI to come into reality with a lot more research done*

Prof. Vinod A. Prasad

Behavioral Science in Management Conference, 2023

AR/VR/MR: How Does it Matter? Comparing XR technologies with Respect to Human Factors

Prof. Pradipta Biswas is an Associate Professor at the Indian Institute of Science (IISc) in Bengaluru. Biswas is also the Co-Chairman at Study Group 9 of the International Telecommunication Union (ITU), the Telecom Branch of the United Nations Organization (UNO). Prof. Biswas presented an interesting talk at the BSIM 2023 Conference on April 05, 2023.

The Covid-19 pandemic and the subsequent work-from-home culture emphasized the importance and significance of immersive media. Major industries have used various terms like Metaverse (Facebook), Mesh (Microsoft), Nth Floor (Accenture) and so on to invest in and commercialize upon immersive media related products. Traditionally, immersive media has been described through a continuum between reality and virtual reality along with intermediate systems or Augmented and Mixed Reality systems. In the middle of commercialization efforts and advertisements from software giants, end-users are often confused about the best solution for their needs. Few studies analyze end users' feedback across the continuum of immersive media.

Prof. Biswas's talk presented a comparative study on XR Technologies with respect to ocular, EEG and hand movement parameters of users. Prof. Biswas presented a comparison of cognitive load for a virtual flight simulator and between VR and MR interface for a welding task and an Advance Driver Assistance System.

Touchscreen based video see-through interfaces are being preferred over 3D systems. He also added that inference should be made with respect to the sensing technology used as it may vary in accuracy. It can either be attributed towards the physiological factors but it can also be due to the difference in the sensing technology. Therefore, researchers must ensure to use a particular technology consistently throughout the study to avoid technological differences and instead attribute these differences to the human factors.

● ● ●

" *AR, VR, and MR have a lot of scope and applications but its main challenge remains to be user acceptance.* "

Prof. Pradipta Biswas

WORKSHOPS

EEG Analysis on Brain Vision Analyzer Software

As part of BSIM 2023, the CBS Laboratory held the first-of-its-kind EEG Analysis workshop in terms of scale on April 04, 2023. The workshop was moderated by Dr. Rohit Tyagi, a Technical & Scientific Consultant at Aerobe.

The primary objective of the workshop was to give insights into EEG-ERP measurements with a pre-recorded dataset (auditory oddball experiment) using the Brain Vision Analyzer software. It was primarily focused on the analysis of an odd-ball paradigm experiment in the Brain Vision Analyzer software.

The oddball paradigm is a commonly used task for cognitive and attention measurement in ERP studies. P300 is primarily evaluated using an unconventional paradigm in either the auditory or visual sensory modality. A common experimental procedure involves subjects responding physically or mentally to an infrequent stimulus known as the 'target', which is randomly embedded in a background of 'standard' stimuli. Target stimuli elicit a large positive-going potential with a maximum latency of 300-400 ms, and its magnitude increases from medial frontal to parietal electrode sites.

The three-stimulus oddball is a common task used to assess these subcomponents in which subjects respond solely to infrequent target tones embedded in a stimulus train that also includes standard tones and infrequent novel 'distractor' stimuli. ERP responses to targets in this task reflect P3b, whereas ERP responses to distractors reflect P3a.

Steps include familiarizing oneself with the BVA software, setting up the workspace, importing the demo data (Auditory Oddball P300), Data Filtering, Artifact rejection, Independent Component Analysis, Re-referencing, Segmentation, Averaging, FFT, and Data Export.

Hands-on Interactive Eye-Tracker Workshop

As part of BSIM 2023, the CBS organised an interactive eye-tracker workshop for its participants on April 05, 2023. The workshop was moderated by Parag Amodkar, Owner, Tiden Technologies; Abhijeet Purandare, Director, Sanki Machine Tools Ltd. and Rohit Pendse, Manager, Sanki Machine Tools Ltd.

Mr. Parag Amodkar and his team stressed on the use of eye-tracker technology in the consumer industry that is especially used to understand Consumer Experience Technology (CXT) in a commercial setup. There is always a 'see-say' gap where you see something but say something else without being able to express the true emotional value or utility from the product. The idea is to reduce this by identifying the gap, and help marketers or product developers solve this. Eye-tracking is instrumental in enabling an understanding of an attention and interest point. During the workshop, the moderators also exhibited some interesting real-life experiments that had been undertaken for certain product developments with successful results in the market.

Fixations and gaze points are the basic output measures of interest and often the most used terms with respect to eye-tracking. Gaze points show what the eyes are looking at. If a series of gaze points is very close—in time and/or space—this gaze cluster constitutes a fixation, denoting a period where the eyes are locked toward an object. Fixations are excellent measures of visual attention, and research in this field has been continually growing.
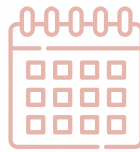
EEG ANALYSIS
ON BRAIN VISION ANALYZER

Aerobe in association with NSE Centre for Behavioral Science organizing a workshop @ **BSIM 2023** Indian Institute of Management, Ahmedabad

on

4 APRIL 2023

Workshop Moderator

DR. ROHIT TYAGI

MBBS; MMST (IIT Kharagpur);
PhD (Nat'l Univ of Singapore)

WORKSHOP DETAILS

❯ Insights into EEG-ERP calculations with a pre-recorded dataset with brain vision analyzer software.
❯ Included but not limited to setting up the workspace, importing the data, Data Filtering, Artifact rejection, Re-referencing, Segmentation, Averaging, FFT, and Data Export.

For Registration

About the centre

Tobii AB provides eye tracking technology and software to ensure priceless insights into human behavior. Our technology is used to improve processes, enhance training, and increase productivity and safety. We're trusted by the world's leading companies as well as 99 of the world's top 100 universities.

Date: April 5th 2023

HANDS-ON INTERACTIVE WORKSHOP
- Tobii Screen Based Eyetracker
- Tobii Wearable Eyetracker

Fields of Research

- Behavioral economics
- Cognitive psychology
- Social psychology
- Behavioral psychology
- Developmental psychology
- Psycholinguistic
- Clinical psychology

- Neurodegenerative disorders
- Neuropsychiatric disorders
- Neurological conditions
- Ophthalmology
- Nonhuman primate
- Consumer/ Market research
- Human machine/computer interaction

Sanki Machine Tools India Pvt. Ltd.   Email: sales@sankimachinetools.com   Website: eyetracking.co.in   Mb: +91 9820640752

APPLICATION AREAS

SCIENTIFIC RESEARCH

Psychology and Neuroscience
Eye tracking is used in different fields of psychology and neuroscience to understand how and why eye movements are made and how we gather information with our eyes.

Infant and Child Research
Infant and child researchers use eye tracking to study perceptual, cognitive, and social-emotional development from birth through early adulthood.

Clinical Research
Researchers are seeking to find meaningful analysis of eye movement information to accurately identify and treat ocular disease and disorders such as autism, ADHD, Parkinson's disease and more.

Marketing and Consumer Research
Eye tracking is a unique method to objectively measure consumers' attention and spontaneous responses to marketing messages. These insights help marketers to effectively design communication to catch the shopper's eye.

Human Factors and Engineering Research
Measuring human intuition, interaction, and improvements in design is key to understanding the human element when using and developing systems. Eye tracking helps us to see how the human is engaging with each system, machine and process.

Education
Eye tracking is used in studies to examine education and learning processes. In addition, classrooms and labs are being equipped with this technology in order to teach tomorrow's workforce how to employ eye tracking in different fields.

INDUSTRY AND HUMAN PERFORMANCE

Human Performance
Every individual has a unique approach to completing a task, and these variations can produce different outcomes. By understanding how a task is completed, you can identify methods of best practice and effectively communicate them to others. Visual attention is strongly linked to cognitive function, and by harnessing this insight through eye tracking, you can improve the way your team operates.

Productivity and Quality
Consistency and efficiency are essential when it comes to productivity and quality assurance. Eye tracking allows you to see another layer of detail in the way your business operates, which helps you pinpoint ways that processes can be improved, errors reduced, and waste identified and removed. This information can also be used to create more effective onboarding material and improve quality and consistency across workplace operations.

Safety and Risk Assessment
A lack of situational awareness and lapses in concentration are major drivers of workplace accidents. Eye tracking allows you to tap into workers' visual attention and identify why these things occur. This information can help you fix elements of a workspace that hinder safe operations and train staff to be more aware of their surrounds and potential hazards.

Sports Performance and Research
Eye tracking is used to better understand an athlete's individual performance by identifying links between their attentional focus, trajectory estimations, visual search strategies, hand-eye coordination and the individual's actions during a game.

MARKETING AND USER RESEARCH

Shopper and Ethnography Research
Understand what influences shopper behaviour both online and in-store. Eye tracking reveals deep insights into what captures attention and drives decision making in the purchase process. Use these insights to tailor your path to purchase and increase conversions in a more effective way.

Packaging Research
See how you can optimize existing or new designs to perform better at the shelf. Eye tracking helps you evaluate the impact of your branding and design choices and compare them to your competitors'. This insight allows you to attract attention and entice buyers to select your product over another.

UX Research
Design products and services that customers want to use. Eye tracking lets you see how users engage with your website, interface, or product in more detail than any other method can. This gives you the knowledge you need to optimize design features and functionality.
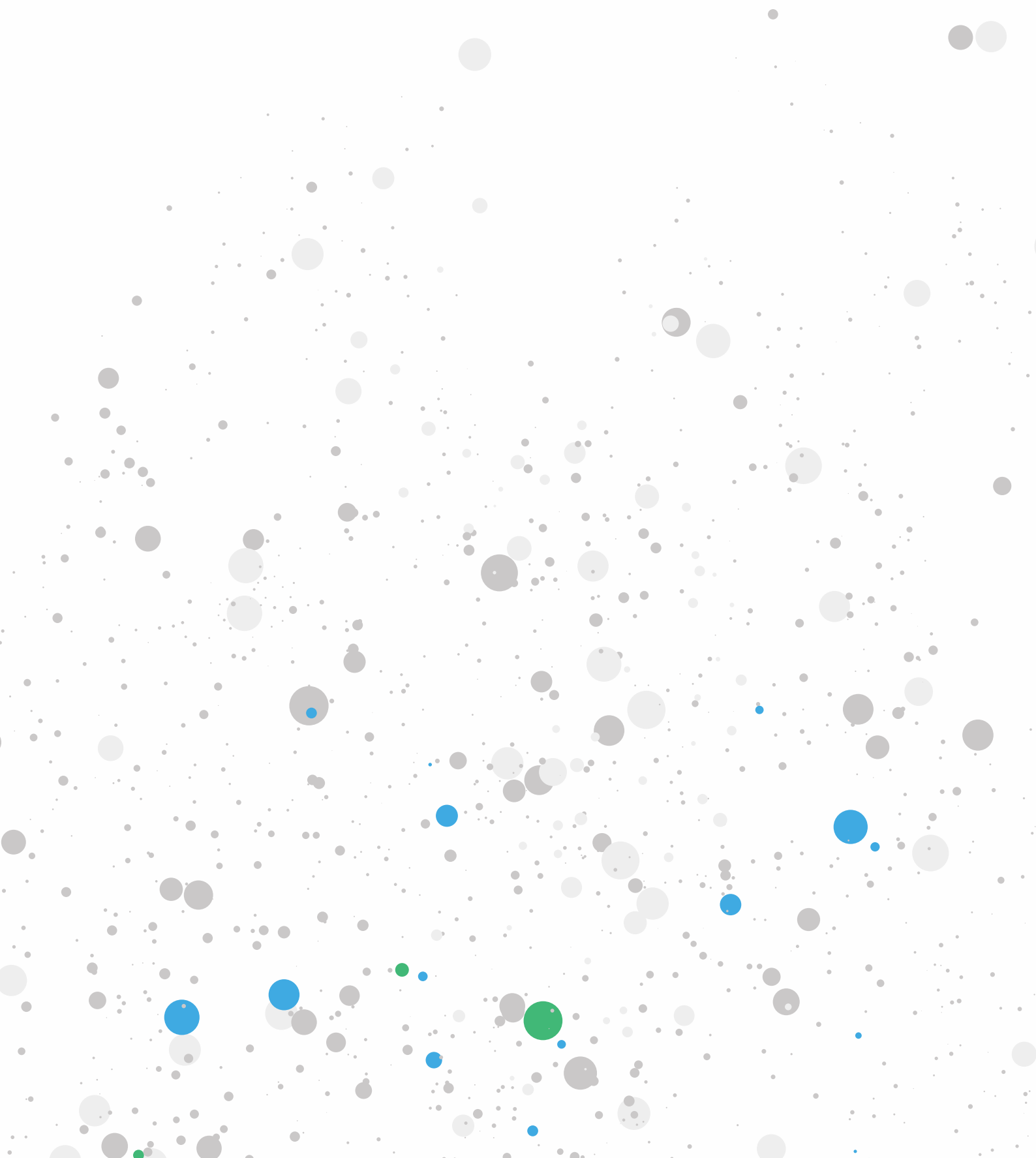
Advertising Research
Make your advertising more influential by understanding if it captures attention and creates engagement. Eye tracking reveals the true performance of your advertising material by showing you exactly how consumers view it and what elements are most effective in achieving the desired outcome.

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NSE CBS EXECUTIVE COUNCIL RESEARCH

Centre for Behavioral Science

Policy Uncertainty and Behavior of Foreign Firms in Emerging Economies

Amit Karna, Shamim Mondal, Viswanath Pingali | *PUBLISHED*

The authors of the paper look at how foreign firms and domestic firms react differently to policy uncertainty, in an emerging economy context. Further, the authors investigate how older foreign firms adapt to policy uncertainty better than the newer entrants. The study uses data from pharmaceutical sales in cardiovascular segment in India from January 2011 to May 2016. We use fixed effects panel data regression to measure market reaction of foreign firms and domestic firms when faced with policy uncertainty. While domestic and foreign firms react similarly when faced with anticipated policy changes, foreign firms react more adversely when faced with policy uncertainty. Foreign firms, which are earlier entrants respond less adversely than the newer entrants. The paper adds to the literature on firm response to policy uncertainty. It provides insights to the managers on facing policy uncertainty, and lessons to the policy makers on the impact of policy uncertainty.

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Choosing Beyond Compliance Over Dormancy: Corporate Response to India's Mandatory CSR Expenditure Law

Shalini Jain, Naman Desai, Arindam Tripathy, Viswanath Pingali | *PUBLISHED*

The authors of the paper examine whether firms engaged in high-levels of voluntary CSR alter their strategic choices in response to a detrimental public policy – specifically India's Companies Act (2013) that mandates qualifying firms to spend 2 percent of their 3-year average net profits on CSR. Drawing on the concept of organizational dormancy, the authors argue that firm capabilities, political awareness, exposure to political pluralism, and ownership identity, may explain choice heterogeneity among these firms. The key and non-intuitive finding is that even in the absence of discretionary choice in determining optimal CSR expenditure, firms are less likely to choose dormancy and instead embrace and even surpass the stipulations of the law in their CSR contributions. Also, politically aware firms are more likely to opt for dormancy over compliance. Managerial and policy implications are also discussed.

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Cyclically Adjusted PE ratio (CAPE) and Stock Market Characteristics in India

Joshy Jacob, Pradeep K.P. | *PUBLISHED*

The authors estimate the Cyclically Adjusted PE ratio (CAPE) for equity indices in the Indian market. They find the average CAPE ratio of the Indian market is lower than that of the US. Judging the market valuation level based on a long-term moving average of CAPE, the authors find that the CAPE has remained above the average since 2014. Prominent episodes where CAPE exceeds its average include the period before the 2008 Global Financial Crisis and the post-COVID-19 period. The authors find that a higher CAPE is associated with lower future returns for holding periods varying from one year to ten years, indicating the negative association between expected returns and CAPE. They also find that a higher CAPE is associated with a greater demand for IPOs by investors and more optimistic earnings forecasts by analysts. Net fundraising through equity significantly increases during periods of high CAPE suggesting rational market timing by firms.

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The Neural Correlates and the Underlying Processes of Weak Brand Choices

Ankur Kapoor, Arvind Sahay, Nandini C. Singh, V.S. Chandrasekhar Pammi, Prantosh Banerjee | *PUBLISHED*

The Limited Foresight Equilibrium (LFE) for this model. An LFE specifies how limited-foresight players' strategies and beliefs about opponents' foresight evolve as they move through the stages of the game. I show the existence of LFE and describe its other properties. I show that in LFE limited-foresight players follow simple heuristics for beliefs and actions. As applications, LFE is shown to rationalize experimental findings on Sequential Bargaining and the Centipede game.

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Impact of Operational Fragility on Stock Returns: Lessons from COVID-19 Crisis

Avijit Bansal, Balagopal Gopalakrishnan, Joshy Jacob, Pranjal Srivastava | *PUBLISHED*

The authors examine how the market valuation of firms varies on account of their operational fragility that makes them vulnerable to the COVID-19 pandemic. Using the data on plant location that uniquely identifies the vulnerability of firms to operational disruptions, the authors find that firms with plants located in zones susceptible to higher infections earn significantly lower returns. For firms with high operational fragility, the marginal value of financial flexibility and operating flexibility is higher. The adverse impact of the operational fragility is lower for firms affiliated with the larger business groups. The paper identifies unique channels associated with the pandemic that impact firm value.

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Impact of Price Path on Disposition Bias

Avijit Bansal, Joshy Jacob | PUBLISHED

Recent experimental studies illustrate the influence of price path, particularly the 'non-straight' price path, on several aspects of investor decision-making. The paper employs an empirical proxy for price path based on convexity and demonstrates that price convexity significantly impacts the selling decisions with transaction-level data. The authors find that a price path that is likely to signal a favourable (unfavourable) price movement in the future lowers (heightens) the selling propensity of traders in stocks. The findings suggest that likely expectations about future price movement, as could be inferred from the experienced price path, significantly influence the trading decisions of retail traders.

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COVID-19 Pandemic and Debt Financing by Firms: Unravelling the Channels

Balagopal Gopalakrishnan, Joshy Jacob,
Sanket Mohapatra | PUBLISHED

The COVID-19-induced disruptions and the consequent government responses stretched the financial resources of firms. Recent studies document an increase in debt financing by firms during the pandemic. Using firm-level data from 61 countries, the authors deepen the understanding of the impact of the pandemic by examining the variation in loan and bond financing attributable to COVID-19-specific factors. Indicative of heightened precautionary needs, firms with higher pandemic exposure and those located in countries with stringent lockdowns have a higher propensity to raise debt. Furthermore, firms in industries less amenable to remote working also have a higher propensity to raise debt, but face higher financing costs compared to their peers. Reflective of opportunistic investment motives, firms that hold a relatively positive outlook have a greater likelihood of raising loan financing. The findings draw attention to the role of real-side factors and managerial motives that drive debt financing during a distress episode.

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Prospect Theory Preferences and Global Mutual Fund Flows

Nilesh Gupta, Anil V Mishra, Joshy Jacob | PUBLISHED

The authors examine the influence of Cumulative Prospect Theory (CPT) characteristics of fund returns on investment flows with a cross-country data of equity mutual funds. The authors find that a larger CPT value of the style-adjusted past returns is associated with higher fund flows in the subsequent quarter. The impact is greater for retail-oriented funds, relatively younger funds, and those with higher active share. While funds that score high on the CPT value attract incremental fund flows, they earn a lower alpha than their peers in the following year. The sensitivity of fund flows to the CPT characteristics is higher in countries with greater individualism and short-term orientation. The results are robust to several additional tests and hold across various subsamples of our data. The findings imply that investors have misplaced expectations about the future performance of funds that show higher CPT values and the fund managers cater to these investor preferences.

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Mutual Fund Asset Allocation During COVID-19: Evidence from an Emerging Market

Joshy Jacob, Nilesh Gupta, Balagopal Gopalakrishnan | PUBLISHED

The paper examines the investment decisions of Indian equity mutual funds during various stages of the COVID-19 pandemic with monthly portfolio holdings. The authors find that funds favoured firms with lower risk, higher financial flexibility, and larger size during the early months of the pandemic. The preference for relatively low-risk firms, which reverses later, suggests a reallocation towards safer assets. Funds also preferred growth firms to value firms as the latter with greater invested capital are more vulnerable to the shock. Institutional investors also favoured group-affiliated firms throughout, reflecting their lower crisis vulnerability. The authors find that the stocks preferred by funds during the pandemic outperform others in the long run. The paper brings out key firm characteristics that impact mutual fund asset allocation during extreme uncertainty.

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Performance of Quality Factor in Indian Equity Market

Joshy Jacob, K P Pradeep, Jayanth Rama Varma | PUBLISHED

The authors study the characteristics of Quality factor (QMJ) in India, which is the second largest emerging market. Dimensions of quality factor are impacted by the weaker enforcement of corporate governance norms in emerging markets. Diversion of revenues by promoters would result in poor profitability, while tunneling of profits would result in lower payout and lower growth. Therefore, investors are likely to attach greater significance to the quality dimensions in stock pricing. Consistent with this hypothesis, the Quality factor is even more important for asset pricing in India than in developed markets. The QMJ factor earns a four factor alpha of 0.92% per month, significantly outperforming the other widely employed factors, market, size, value and momentum factors. A long-only Quality factor earns an alpha of 0.69% per month. The alpha of quality factors is highly significant, judged by the thresholds recommended by Harvey, Liu, and Zhu (2016). The key drivers of the alpha are profitability and payout, which are both consistent with the tunnelling hypothesis. Besides the alpha, the low portfolio churn, lower risk, shorter drawdowns, and viability of long-only strategies restricted to large capitalization stocks suggest that portfolios tilted towards high-quality stocks are highly attractive to institutional and retail investors.

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Attitude towards caste-based reservation and study group formation: Evidence from a business school in India

Jeevant Rampal, Saif Ali Khan | WORKING PAPER

Can social-desirability concerns cause measurement errors in anonymous surveys studying caste issues? We study this question in the context of caste considerations in endogenous study-group formation by students of an Indian business school. Study groups can affect grades, which can affect salaries. We find that more than 40 percent respondents believe that reservation is not justified and that reserved-caste category students have inferior academic ability. We focus on comparing anonymous survey responses with and without an additional 'veil' to reduce social desirability concerns in responses. We find that with the additional 'veil', the self-report of the tendency to exclude reserved-caste category students from one's study group increases from 5 percent to 22 percent, and the tendency to exclude an inferior-academic-ability student increases from 21 percent to 64 percent. These findings raise fundamental questions of measuring and analysing attitudes related to caste-related issues using anonymous surveys.

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Contests Within and Between Groups: Theory and Experiment

Puja Bhattacharya, Jeevant Rampal | WORKING PAPER

Many sequential contests are characterized by opponents from a prior stage becoming allies at a later stage. In this paper the authors examine behaviour (theoretically and experimentally) in a two-stage group contest where the first stage comprises of intra-group contests, followed by an intergroup 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. For an example of this setting, consider the behaviour of partisans in the US presidential election. In the primaries, interest groups lobby for their preferred candidate within their preferred political party to determine the presidential nominee. However, in the general election, which is the inter-group stage, interest groups supporting candidates who lost the primary often transfer their support to the nominee from their party to unite against a common rival.

The aim of this paper is to characterize optimal individual effort in such two-stage contests. The authors' analysis also encompasses contests that are biased, where one group has an exogenous advantage, e.g. an incumbency effect for a party in a political contest. We consider bias in the second stage (inter-group contest), asking how such asymmetry affects effort in both stages.

The unique equilibrium exhibits the following key features. Individual effort in the intergroup contest depends on the outcome in the prior intra-group stage. Individuals belonging to the winning faction from the intra-group stage exert more effort than those who belong to factions that lost. However, the higher effort is associated with higher costs and, consequently, the payoff from a prior win may not always be greater than from a loss. The authors' analysis highlights that incentives for participation may be absent in the initial stage, even when individuals prefer different alternatives within a group. The authors' analysis also shows that in the intragroup stage, individuals in advantaged groups exert more effort as compared to disadvantaged groups. Hence, the intra-group contest, if measured by the amount of costly effort exerted, is more intense within the advantaged group.

The authors follow up their theoretical results with an experiment. The experiment includes two treatments - Symmetric and Asymmetric - that vary whether or not the contest is biased. The authors find participants within advantaged groups internalize their group's second stage advantage in their first stage choices and indeed the intra-group contest in advantaged groups is more intense. The authors also find individuals easily respond to the reward incentives as individuals belonging to winning factions from the intra-group stage exert significantly higher effort in the intergroup contest

than those in losing factions. However, the share of group contribution borne by intra-group winners is lower than theoretical predictions. This suggests that the behavioural response to a prior win versus a prior loss may not be fully accounted for by strategic considerations. The theory we develop is very general and has many applications like faculty recruiting, partisan support in US elections, R&D project competition in firms.

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Heterogeneous Agent Quantal Response Equilibrium

Jeevant Rampal, Fernando Stragliotto | *WORKING PAPER*

In this paper we study a setting where players of a sequential-move game may have heterogeneous skill. Skill is captured by payoff responsiveness in quantal response models. Mckelvey and Palfrey (1998) provide the Quantal Response Equilibrium for extensive-form games (AQRE) where all players are assumed to have homogeneous skill. In this paper we extend the AQRE by modeling heterogeneous skill and uncertainty and belief-updating (BU) about opponents' skills. First, we provide an equilibrium model incorporating skill-heterogeneity and uncertainty but not BU—this is called Heterogeneous AQRE (or HAQRE). Next, we incorporate naive disequilibrium belief-updating (BU) to define the HAQRE-BU. We show that these concepts exist, and in the context of finite perfect information games, they are unique, and they yield simple data applicability without fixed-point calculations. We use experimental data from a sequential-move game where players with different experience-levels interacted (Rampal (2020)) to show that modeling heterogeneity and belief updating about skills can each yield better data-fit in such settings.

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Fishing in Muddy Waters: Mergers and Acquisitions during Uncertainty

Balagopal Gopalakrishnan, Joshy Jacob,
Jagriti Srivastava | *WORKING PAPER*

Using the COVID-19 pandemic as an exogenous shock, the authors examine whether firms engage in opportunistic mergers and acquisitions during uncertainty. Particularly, the authors analyze the inorganic growth strategies of acquiring firms faced with disproportionate pandemic-induced opportunities using a cross-country deal-level data. The authors find a significant increase in the deal completion propensity and deal size, and a decrease in the deal completion time for acquirers that are more amenable to remote working. The effect is more pronounced when both the acquirer and the target are amenable to remote working. The authors' findings indicate that amenable firms, which were initially reluctant to engage in opportunistic acquisitions, engaged aggressively in the subsequent quarters with an abatement in pandemic-induced uncertainty. The study provides novel insights into the behaviour of acquisitive firms during the pandemic.

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Arbitrage Constraints and Behaviour of Volatility Components: Evidence from a Natural Experiment

Pranjal Srivastava, Joshy Jacob | *WORKING PAPER*

Short-selling constraints are known to impede information flow into the financial markets, particularly that of negative information. The authors employ "Regulation SHO" as a natural experiment to examine how the lowering of short sale constraints impacts the information flow. Specifically, the authors investigate whether large and small volatility jumps significantly change around the regulatory change, for the treated (Pilot) and control-group (non-Pilot) stocks. The authors find that large (small) jumps significantly decline (rise) as an outcome of the relaxation of short sale constraints, despite an increase in the variance of the Pilot stocks. The decline in the intensity of large jumps and the simultaneous increase in the intensity of small jumps suggest more efficient information flow into the market. Furthermore, the decline is larger for firms facing greater short-sale constraints, indicating that the impact of short-sale constraints are more pronounced for them. Implying that the change in the jump components is brought about by the easing of the short sale constraints, the authors also find that the decline in the large jump intensity is higher for firms with lower conservatism in information disclosure.

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Risk Information - Normal Markets and the COVID-19 Pandemic Period

Pranjal Srivastava, Joshy Jacob | *WORKING PAPER*

The paper investigates how the market infers changes in the firm-level discount rate (risk information) in normal and turbulent times. The study focuses on two key sources of risk information, earnings announcements of firms and changes in the market risk premium. The authors employ a recently proposed measure that limits the impact of event risk while estimating the forward-looking risk information from option prices. The authors find that both earnings announcements and the changes in market risk impact firm-level discount rates, but both sources exhibit a significant time variation. The impact of market risk changes is lower in favorable conditions and higher during crisis periods. Using COVID19 as an exogenous shock, the authors show that the influence of earnings announcements becomes insignificant during a crisis. The results suggest lower attention to firmspecific risk factors in times of a systemic crisis, in contrast to normal times.

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On Brain Plasticity

Aditya Moses | RESEARCH PROPOSAL

Although the brain was once seen as a rather static organ, it is now clear that the organization of brain circuitry is constantly changing as a function of experience. These changes are referred to as brain plasticity, and they are associated with functional changes that include phenomena such as memory, addiction, and recovery of function (Kolb, Gibb, & Robinson, 2003).Research suggests that brain plasticity can help improve performance of individuals within any workplace (Merzenich, 2017); resilience; adaptability and cognitive functioning (Ballesteros, Voelcker-Rehage, & Bherer, 2018). Given, the competitive work environment that organizations face and uncertainty associated with changing environmental conditions. It would help if the organization can help positively influence the brain plasticity of its managers.

Research in the field of plasticity has provided multiple drivers that impact brain plasticity. However, two drivers stand out namely mental training (Singer & Engert, 2019) and physical activity (Chodzko-Zajko, Kramer, & Poon, 2009). Both these drivers can be provided by organizations to their managers at little to no cost. However, the benefits that organizations can derive from them could be immense. However, research has also suggested that different types of training may have differential impacts on brain plasticity (Trautwein, Kanske, Böckler, & Singer, 2020). Therefore, in this study the author proposes to study the impact on these interventions on performance of employees.

The Effects of Celebrity Endorsements in Financial Services on Neural Mechanisms in the Consumers' Minds

Subhadip Roy | RESEARCH PROPOSAL

A celebrity endorser is "any individual who enjoys public recognition and who uses the recognition on behalf of a consumer good by appearing with it in an advertisement" (McCracken, 1989, p.310). Overall, celebrity endorsement strategy has been found effective in enhancing consumers' attention (Erdogan, Baker and Tagg, 2001); increasing brand recognition and recall (Misra and Beatty, 1990; Premeaux, 2009); increasing brand familiarity (Felix and Borges, 2014); and enhancing favourable brand evaluations (Keel and Natrajan, 2012; Fleck et al., 2012, Carrilat et al., 2013; Arsena et al., 2014; Felix and Borges, 2014).

Celebrities have been endorsing product brands for over hundred years (Erdogan, 1999) and a celebrity can play a number of roles (McCracken, 1989) in the endorsement process such as an expert, an actor or a testimonial provider, where the celebrity's involvement with the brand/product acts as a differentiating factor across the modes of endorsements. In recent past, (Keel and Natrajan, 2012). In spite of this increase in celebrity endorsements in practice, research is still inconclusive on the exact effect of endorsement on the consumer. One of the reasons behind this may be the way responses to celebrity endorsements are recorded, that are majorly self-reported.

In this context, neuroscientists have found that hormones such as dopamine and phenylethylamine flood our brains when we see a familiar face, i.e. a celebrity. These hormones trigger positive emotional states that may encourage positive affect towards the promotional message brought to us by those faces (Mucha, 2005). From a researcher's view, there is a need to determine which celebrity endorser would perform best and this need could be fulfilled if one can empirically test the secretion level of hormones associated with exposure to various celebrities (Fugate, 2007). It should be noted that a search of neuro and celebrity results in only one empirical study that investigates the celebrity endorsement phenomenon using neural imaging techniques. Based on the results of P300 event-related brain potentials, eye-tracking experiments and questionnaire research, the authors concluded that a famous female spokesperson would have a significant effect on the consumers in the case of FMCG advertising (Pileliene and Grigaliunaite, 2017). However, in the same study the authors pointed out several directions of future research such as, investigating the effectiveness of celebrity endorsers at the overall level and including different aspects of the celebrity characteristics.

The financial services sector had restrained from using celebrity endorsements till recent times. However, of late, globally there has been a trend of having celebrity endorsers in financial services such as banks, insurance and mutual funds. Notable celebrities such as Floyd Mayweathers and Paris Hilton in the western context and Sachin Tendulkar and Mahendra Singh Dhoni in India.

Given the premise, the present study aims to explore various aspects of the celebrity characteristics and the celebrity brand pairing to find out the effect of various situations where a celebrity is/may be used by financial services marketers on the brain activity of the consumer. At the present level, the six major questions that the study is aiming to address are:

1. What would be the relative effect of a celebrity vis a vis a generic advertisement for a high-risk product
(e.g. mutual fund) for consumers?

2. How would this effect be moderated by the congruent/incongruent celebrity-product combination?

3. Would physical attractiveness of the celebrity overrule the negative effect celebrity-product incongruency?

4. Would celebrity expertise overrule the negative effect celebrity-product incongruence?

5. Would primacy/recency of the endorser moderate this effect?

6. What would be the moderating effect of consumer characteristics in this process (if any)?

The objective of the current research is to study the effectiveness of celebrity endorsements in financial services marketing (for example celebrity congruency with the product brand; celebrity attractiveness; celebrity expertise) and their effect on the consumer's mind. However, the study would focus on consumers who take their investment decisions on their own or without the help of any other human help (such as peers or advisors). There is ample research that explores the effects of similar factors on consumer's self-reported measures. However, the present study aims to go beyond self-reported measures and examine the exact neural mechanisms (possibly P300) that may/may not influence the consumer.

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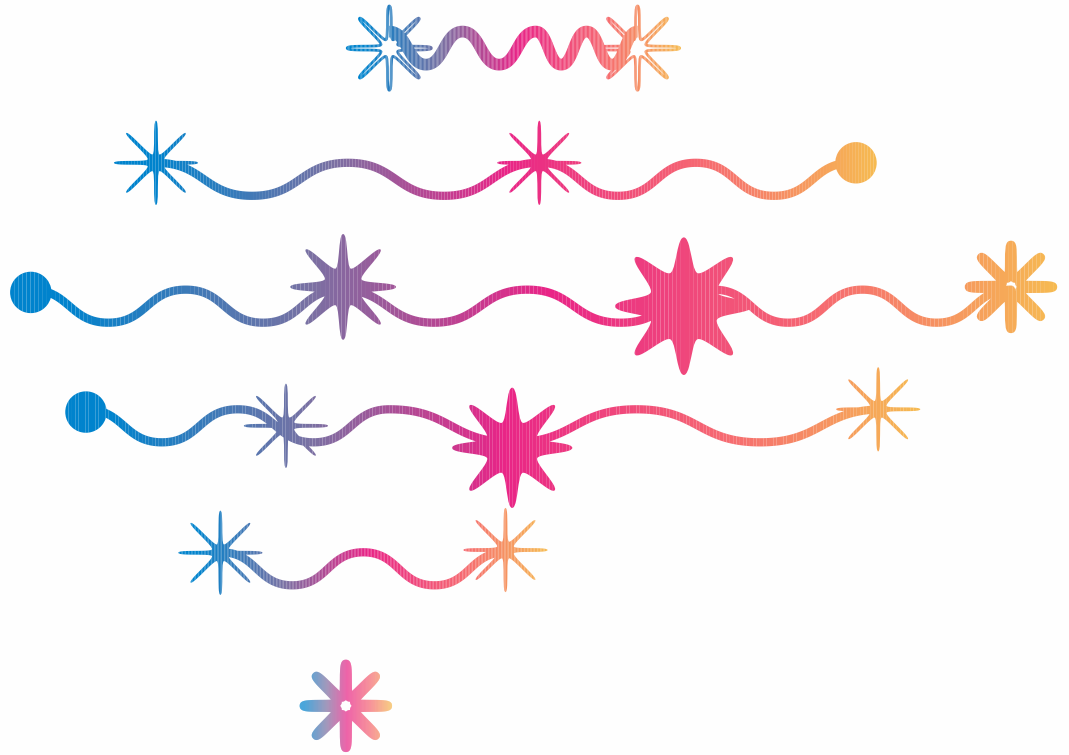
RESEARCH AT NSE CBS

Neuroscience and Consumer Behavior (NCB) Course: Studies Conducted by Student Groups at the CBS Laboratory

Study 01
Using EEG to Predict Responses to Movie Trailers Across Genres—Thriller, Romance, Action & Comedy, for Differing Personality Types & Demographics

Akanksha Priyaraj, Ashna Patil, Kumar Ishaan, Neha Borse, Swaha Swayamsiddha

Problem Statement: Movie trailers have always been the first touchpoint for viewers of the movie. Most big production houses have grand trailer launches that are screened for media, influencers, review boards, etc. The extra emphasis on trailers is done because that decides viewers' perception of the film, affects their decision to watch the movie, and factors into the eventual success at the box office. Trailers are two-to-three-minute movie clips that would intrigue the viewers to know more. We would like to analyze the brain waves to understand the engagement level for a particular genre. To study the problem statement, EEG (Electroencephalogram) features viz. AW Index, PSD, etc. were used to feed into the Neural Network model. The paradigm/experiment was designed using E-Prime.

Results: For performing supervised learning, the verdict is set as a target, and features for time & trailer names are dropped. The model was trained using 39 features. Since our target is non-binary (ranges between 0 to 4, 0 indicating the least & 4 highest preference for watching the movie), dummies are created from the target variable.

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The prepared dataset is split into an 80-20 ratio for training and testing. Training is done using a Deep Neural Network(DNN) model with a ReLU activation function. For faster convergence 'Adam' optimizer is enabled for gradient descent and loss is computed using binary cross entropy.

EEG Based Clusters Vis-À-Vis Responses
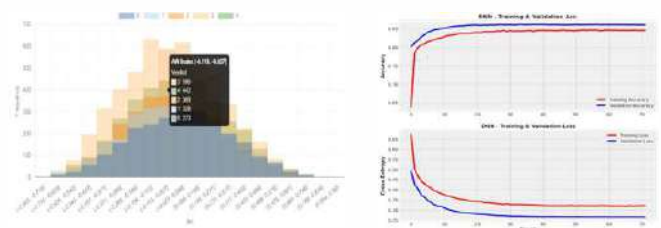
Training & Validation accuracy converge around 85% with validation accuracy being slightly higher than training. This might arise due to fundamental differences in personality or demographics between training and test sets. A score of 84% from epoch 20 onwards conveys that the model is not over-fitting. The resemblance in the scores for 7 out of 12 trailers indicated the relevance of familiarity in influencing these verdicts. However, this gives us reasonable confidence in the power of EEG with personality features in making a more accurate prediction.

Study 02
Variations in Engagement Levels vis-à-vis Marketing Media and Advertisement Type

Ayush Yadav, Darpan Choudhary, Mohan Nanda Kumar,
*Sejal Sahni, Yadav Ankita Patiraj*

Problem Statement: Consider a scenario where consumers are exposed to two different marketing media with the same content – some may prefer watching a video advertisement with jingles while others would prefer a print advertisement more. One reason for this divergent outcome could be the affinity with the medium or brand but empirical evidence and existing literature explain this consumer preference using neuroscience methods. Considering the above statement in mind, is there a difference in the engagement level based on the medium of the advertisement? And does the type/category of the advertisement also influence engagement?

Hypothesis 01: The Print/Creative (Image) advertisements would induce a higher level of engagement compared to any other medium.

Hypothesis 02: The contrast and emotionally categorized advertisements would correspond to a higher level of engagement compared to other categories.

To study the above hypothesis an experimental design has been formulated. The schematic representation is as follows:
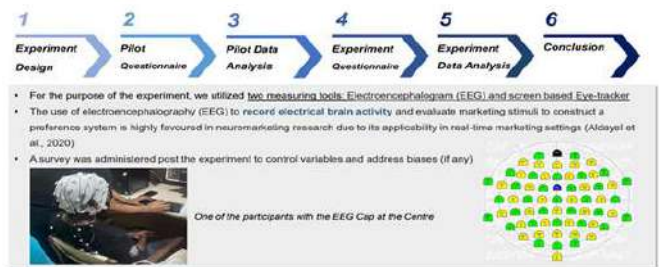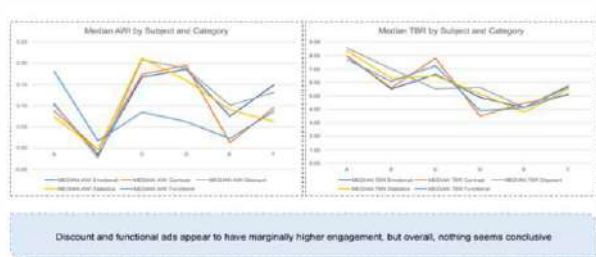

Further, the advertisements were also segregated on the basis of categories to address any biases that may arise due to the type of content:
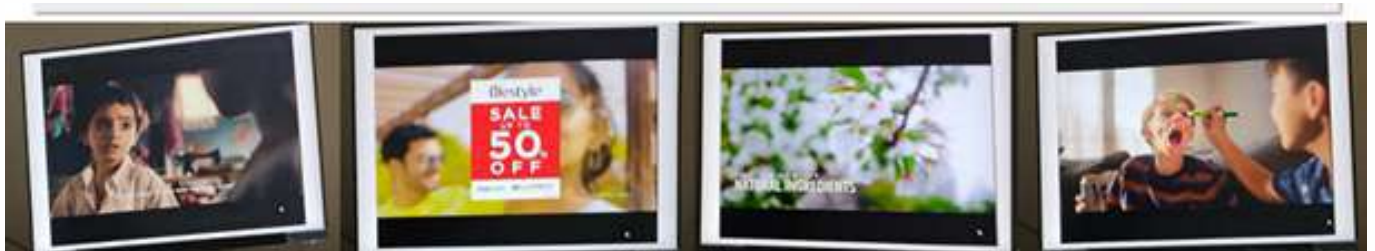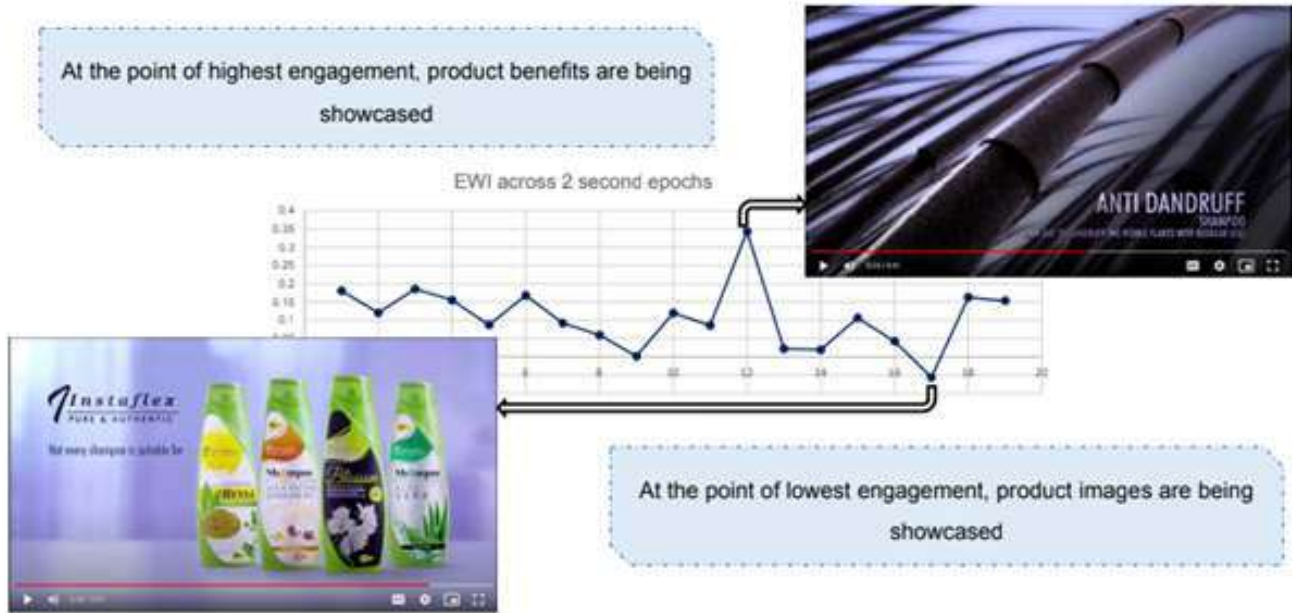

Results
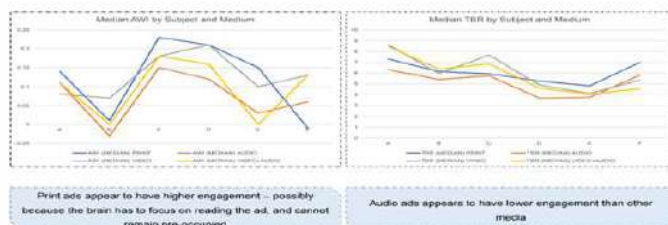
Effect of Medium

Effect of Category

At the point of highest engagement, product benefits are being showcased

EWI across 2 second epochs

At the point of lowest engagement, product images are being showcased

*Subject 2. Video + Audio Ad (Instaflex): Overall AWI = 1.21

Marketing Implications
· Brands need to consider the amount of spending allocated to each medium.
· Media and brand assets can be created at lower costs.
· Images are more engaging than other media, so marketers should use print and social media to maximize ROI.
· Product features are more engaging than product packaging, leading to more engaging videos. Hence, becoming more feature centric when showcasing products can lead to a more engaging video advertisement.

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Study 03
Understanding the Variation in Engagement Levels in Cause Based Marketing Campaigns with Respect to Different Types of Advertisements

Md Ramiz Raja, Mohan Nanda Kumar

Problem Statement: Companies do CRM (cause related marketing) in many forms, such as sharing a cause-focused message using business resources. For instance- a campaign that promotes behavior modification (such as not judging people based on the shape, size, or appearance of their body) (agoodcause.com). Digital marketing has a 55% share of marketing campaigns, and between 2021 and 2026, the compound annual growth rate for digital marketing is anticipated to be 17.6% (wordstream.com). Further, a larger portion of many marketers' spending will go toward video. According to HubSpot, 91% of markets want to expand or retain their YouTube investment in 2023. Many independent and dependent variables (DVs) have been assessed in empirical studies in an effort to comprehend the social, psychological, and behavioral processes at play and what makes This technique effective. Most of these variables relate to the brand, the cause, or the customer. However, there is a lack of research on the elements of the ad itself, video Ads in particular. Understanding the elements of the ad, particularly the logo positioning, will help the firms better design their ads. This study focuses on where the brand logo in a Video Ad should be placed to capture the viewer's attention better.

Conceptual Framework: Cause-Related Marketing is marketing done by a for-profit business that seeks to both increase profits and to better society in accordance with corporate social responsibility, such as by including activist messages in advertising.

The message-focused campaigns (ads) can be broadly classified into three types:
1. Advertisements with logo displayed before the advertisements
2. Advertisements with logo is displayed throughout the advertisements
3. Advertisements with logo displayed after the advertisements
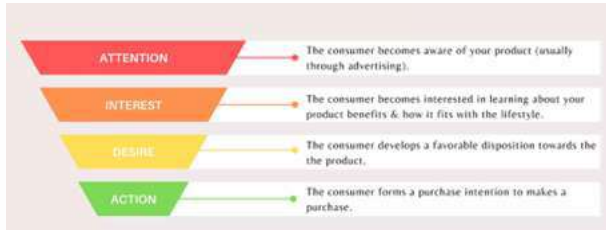
ADIA Model
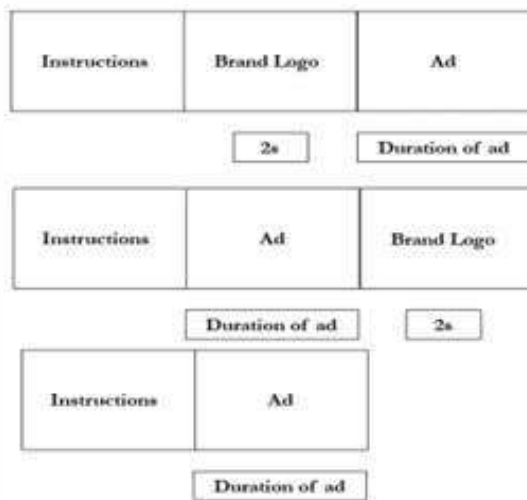
Experimental Design: 22 Participants

Results: Total duration of fixation and the number of fixations is much lower for during compared to before and after and in some cases, the participants did not even notice the brand.

	Overall	Before	During	After	Std. Dev
Openness	74%	76%	69%	78%	11%
Conscientiousness	60%	51%	61%	69%	18%
Extraversion	50%	45%	49%	55%	19%
Agreeableness	67%	71%	63%	64%	14%
Neuroticism	54%	64%	49%	44%	16%

As denoted in the table below, a great disparity exists between the situations when the brand was shown in the background of the advertisement compared to the other two cases when the brand was displayed explicitly. When the brand was displayed during the ad, only 29% of participants fixated on the brand at least once. On the other hand, when the brand was displayed separately, either before or after the advertisement, all 100% of participants fixated on the brand, even multiple times.

	% people fixated
Before (Total of 1.12s)	100%
During (Throughout the ad)	29%
After (Total of 1.02s)	100%

Duration of fixation and the number of fixations – Brand – Higher number of fixations for before, but the higher total duration of fixation for after. The total duration of fixation is much higher-when the brand is displayed at the final part of the ad compared to when it is displayed at the beginning.

	Average Pupil diameter during fixation (On brand)
Before (Total of 1.12s)	2.71
During (Throughout the ad)	3.49
After (Total of 1.02s)	3.31

	% people fixated	Total duration of Fixation (millisecond)	Number of Fixations	Average duration of fixation (millisecond)
Before (Total of 1.12s)	100%	648.6	3.1	206.4
During (Throughout the ad)	29%	126.3	0.4	294.7
After (Total of 1.02s)	100%	790.6	3.0	263.5

#	Duration of Fixation (milliseconds)	Number of Fixations
1	0	0
2	317	1
3	0	0
4	0	0
5	567	2
6	0	0
7	0	0

Managerial Implications: Promoting the brand is the most important aspect of the advertisement. In Cause Related Marketing campaign ads where the brand is not overtly promoted, putting the Brand Logo in one of the corners of the screen would mean that the brand logo will completely skip the attention of the viewer. So, putting the brand of the logo at the beginning or end of the ad should be preferred over putting it during the ad (in one of the corners of the screen).

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Study 04
Priming Effect on Advertising Effectiveness of Evs

Ishita Panwar, Preeti, Sai Pavan S N, Shirin Kumar, T Soumya

Problem Statement: Electric vehicles have been increasing in popularity in recent times with changes in consumer attitudes and beliefs. Advertising for electric vehicles can involve many types of messaging as it highlights product features, focuses on sustainability, appeals to the emotional side of consumers, and more. What kind of messaging will have an influence on the purchase intent and decision of the consumer could also be influenced by certain factors, such as the context that consumers view it. Thus, this paper analyzes the impact of priming on the advertising effectiveness of electric vehicles. EEG and a questionnaire were utilized as methods for this research. After a pilot EEG test with two subjects, half of the remaining subjects were primed positively and half negatively before viewing 4 EV ads and answering a questionnaire indicating their purchase decision. Findings from the EEG pilot included activity in the occipital lobe region which indicates higher attention paid during the positive priming experiment. Findings from the questionnaire design included better results being obtained from the ads portraying product features more prominently. The study concludes that while EV ads with emotional appeals or those based on sustainability in negatively primed conditions were unable to show effectiveness, EV ads for which consumers were primed positively showed results that allow us to consider them more impactful among the three.

Hypothesis: Utilizing EEG as a methodology and learnings from the previous literature reviewed, the research questions and methodology were developed to test the following hypotheses:

H1: Advertisements for EVs are more impactful when they have an emotional appeal
H2: Advertisements for EVs are impactful in the presence of positive priming
H3: Advertisements for EVs based on sustainability are more impactful in the presence of negative Priming.

Methodology and Experimental Design

1. Stimulus (EV Vehicle Advertisement Videos)
Priming Type: Positive and Negative
Priming Content: Images of pollution(negative), happy people (positive)
Message Appeal: Performance based, Emotional (with and w/o direct reference to sustainability)
Priming content followed by an ad and a verdict for purchase intention of the car

2. Procedure
Participants were primed (positive or negative) and were shown multiple ads of EV across multiple message appeals
This data was then used to identify the choice index, level of attention and emotional arousal across various ads.

**Results:** A Multicollinearity Test was conducted. Given below are the insights:

High collinearity (> 0.3) was observed among some of the variables – message appeal and cues, product features, and creativity	The prod parameter (Product Information in the advertisement) also correlated to d1 (Presence of Product Features heavily in the advertisement) – considering the design of the advertisement
The study found that the presence of celebrities, and the nature of advertisement are significantly affecting the purchase intention of the participant with negative coefficients.	The advertisement portraying the product features has more impact on the participant (increased purchase intent) compared to an advertisement portraying the message of sustainability and related emotions.
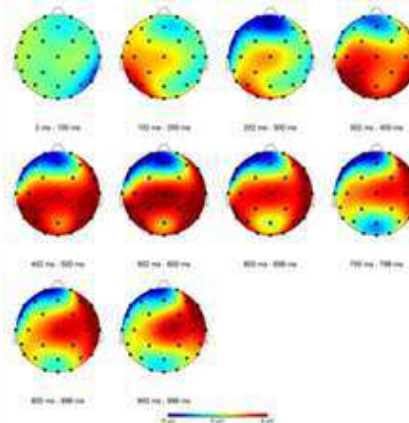
Positively primed brain
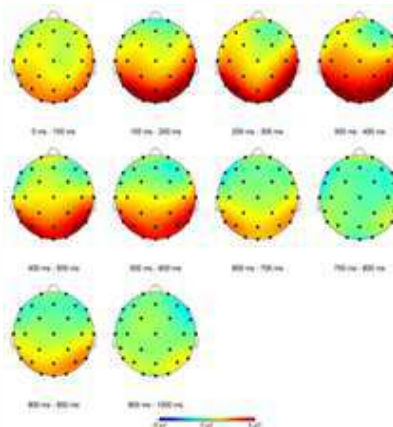
Negatively primed brain
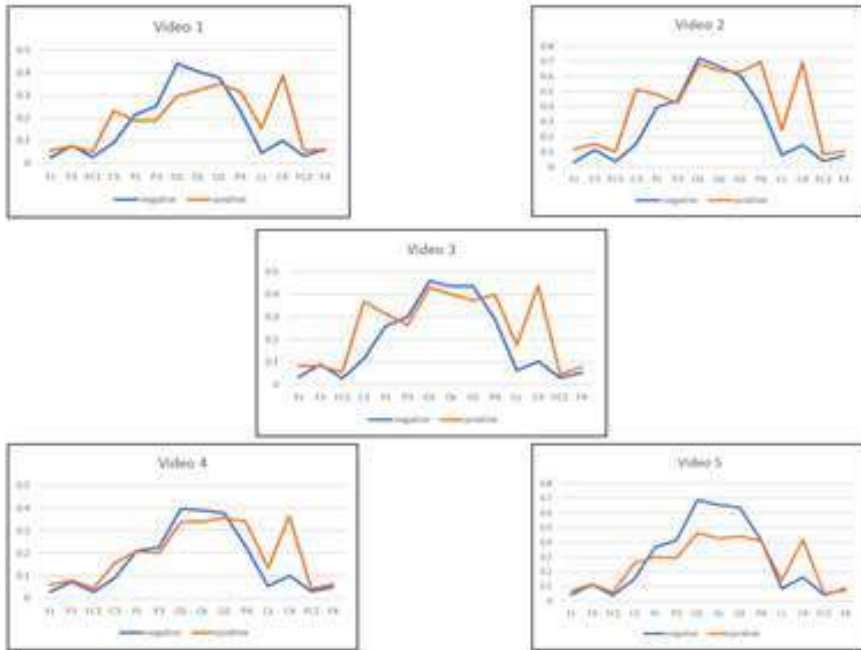
- What is the Alpha metric?

- High Alpha value & high Frontal value results in high emotional arousal

- Significantly high occipital values were observed for video 1 and video 5

- Negative priming improved engagement compared to other ads, where positive priming was the reason for engagement

Implications

SUMMARY | POSITIVELY PRIMED PARTICIPANTS EXHIBIT GREATER TENDENCIES TOWARDS EV PURCHASE

Hypotheses Tested	Result	Business Implications
Ads for EVs are more impactful when they have an emotional appeal	Fail	Ad slots after positive stimulating content like game shows, sports, comedy
Ads for EVs are impactful in the presence of positive priming	Pass	Positive priming environment in car showrooms
		Advertisement design implications for EV brands
Ads for EVs based on sustainability are impactful in the presence of negative priming	Fail	Choice of spokesperson for promotion of brands
		Higher focus on product features with sustainability messaging for EV cars for effective advertisements

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Effect of Mood Induction on the Disposition Effect using EEG

Kunal Apastamb, Yash Chakarvarty, Prof. Arvind Sahay

The disposition effect, identified by Shefrin & Statman (1984) is a robustly studied bias in behavioral finance. It states that the individuals hold the losing stocks for a long time and they sell the winning stocks early. According to the standard economic theories – like the expected value model, the rational investor will maximize the gains by selling off the losers and holding the gainers. But investors do not trade so optimally. A robust conclusion about the effect was found when Odean (1998) studied the trading pattern of 10,000 traders. The author calculates the Propensity of Gains Realized and the Propensity of Losses Realized to understand the pattern. It is compared with paper losses and paper gains. It clearly established the disposition effect.

There have been studies to explain the reasons behind the bias. The mean reversal hypothesis, prospect theory, and the realization utility hypothesis are some of the main reasons cited. Moving ahead in the individual differences causing the disposition effect, the study by Thornton (2021) discusses the effect of weather on mood and that mediates the disposition effect. Apart from the weather, other exogenous variables like air pollution, which are not technically related to trading also affect investment decisions. Li et al. (2021) find that air pollution increases the disposition effect. It significantly caused trading inefficiency.

This study extends an interesting observation in the literature. The disposition effect reverses while a person is in a negative mood. This is studied at a macro level by Thornton (2021). This study proposes an EEG experiment for robust conclusions and argues that there would be only a partial reversal of the disposition effect.

Research Question: Does a negative utility burst reverse the disposition effect only partially?

Industry Project: Study the Effectiveness of Outdoor Advertising

Yash Chakarvarty, Prof. Arvind Sahay

Advertising that reaches consumers outside of their homes is referred to as out-of-home (OOH) advertising, sometimes referred to as outdoor advertising. These ads are a part of an above-the-line marketing plan that is mostly untargeted and has a broad audience. Traditionally, this covers every type of signage, such as bus shelters, seats, and billboards. The majority of advertisements that you encounter outside of your home (that aren't on your mobile device!) are OOH ads. Some of the categories that fall under the umbrella of out-of-home advertising are billboards, transit, steel furniture, and place-based. Due to the fact that cognitive load is lower in the morning and higher in the evening, this study employs electroencephalography (EEG) to determine whether or not increased mental effort affects billboard visibility in the evening. We all spend time outside, and with the proliferation of digital advertising, it can be challenging to make sure that your message is conveyed effectively at times.

Out-of-home advertising (OOH) provides a solution to this problem, and it is now merging with digital improvements to become an extremely effective tool for advertisers and marketers. Being a part of the out-of-home advertising arena right now is unquestionably one of the most exciting times ever. Over the course of the past years, there has been a consistent level of demand for OOH advertisements. Even still, as we go into a new decade, the advertising industry is justifiably thrilled about what the next few years have in store for traditional forms of marketing. Because of the convergence of technological developments with the time-honored advantages of conventional forms of advertising, the world of out-of-home (OOH) advertising has become virtually indispensable to the majority of marketing and advertising professionals. To understand whether the outdoor media content consumption (actual retention) is need-based. Therefore, what are the distinct needs one has during the day, which result in various levels of attention?

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Industry Project: Understanding Organization Behavior/Employee Retention from the Neuro Perspective

Dhruvisha Dave, Yash Chakarvarty, Prof. Arvind Sahay

In any organization, there is a decrease in the workforce which happens not due to hiring replacements for people who leave the organization. Every day, employees make choices and perform actions that have an impact on your team and organization. The way any employee is treated and their interaction with one another can have a positive impact on their behavior or can put the organization at risk. Therefore, it is essential for businesses to comprehend why some employees leave and others stay in an increasingly competitive and fast-moving labor market in order to increase profitability and retain top talent. A fundamental component of corporate human resources is the study of organizational behavior, which encompasses fields of inquiry devoted to enhancing job happiness, job performance, and creativity. Employee engagement refers to an individual's sense of emotional commitment to the employer and their place of employment. The success of the organization may be significantly impacted by larger levels of engagement, according to some studies.

The study aims to understand what employees value and the motivators which influence employees' perception. To envisage the key moderators which play a significant role in employee retention we have used a 32-channel EEG system. An electroencephalography or EEG looks for changes in the brain's electrical activity or brain waves. The scalp will be covered in electrodes, which are tiny metal discs with thin wires, during the process. The brain's activity generates minute electrical charges that are detected by the electrodes. Several factors, including productivity, income, performance and even employee retention are impacted by employee engagement. High levels of engagement enhance organizational performance and stakeholder value while encouraging talent retention, fostering customer loyalty, and improving customer satisfaction.

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Does Interaction Design on the "Add To Cart" Page Increase Conversion Rates by Creating an Endowment Effect?

Rohan Chaudhary, Muskan Jindal, Kunal Apastamb

Online e-commerce websites have a more significant influx of consumers than physical stores. Yet we abstain from analyzing the buying behavior on these web-based applications and do not implement strategies to help consumers and sellers make better decisions. Retailers opt for various measures to influence consumer behavior in physical stores, but not so much in their online stores. Through analysis of several psychological works of literature, we can find areas to add nudges in web applications that would induce specific responses and enhance the overall user experience, thus converting it into user retention and brand loyalty and improving conversion rates. Interactions can also help users navigate different parts of the website, providing nudges for the user journey. According to Thoughts on Interaction design by Jon Kolko, Interaction design is a form of communication that can be thought identical to language.

Research question: Does interaction design on the "add to cart" page increase conversion rates by creating an endowment effect?

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Feeling Awe, Choosing Right: Awe Leads to Mindful Consumer Choices

*Dr. Atul Kumar (Ahmedabad University),
Dr. Amogh Kumbargeri (IIMU), Dr. Sukriti Sekhri (SPJIMR),
Yash Chakarvarty (IIMA), Prof. Arvind Sahay (IIMA)*

Awe is a common self-transcendent emotion experienced in response to information-rich, complex, and novel stimuli such as waterfalls, powerful individuals, religious experiences, and art (Keltner & Haidt, 2003). A growing body of research has examined its effects on information processing (Griskevicius et al., 2010), thinking (Chirico et al., 2018), perceptions (Rudd et al., 2012), beliefs (Valdesolo & Graham, 2014), and behavior (Piff et al., 2015). However, no previous research has shown the effect of awe on the nature of consciousness. Our research expands the theoretical understanding of awe by showing that awe leads to a mindful consciousness, which in turn leads to the choice of healthy food items.

Mindfulness is a state of consciousness emphasizing a) non-elaborative present-centered awareness and b) openness towards and acceptance of all experiences in the present environment (Bishop et al., 2004). Prior research finds that awe leads to a focus on the present moment (Rudd et al., 2012), and a diminishment of self. Further, as awe leads to a greater need for accommodation, it enables the processing of information without using existing knowledge structures, thereby enhancing the openness to new knowledge (Shiota et al., 2007). Taken together, we argue that awe leads to a state of mindfulness as it leads to present-centered awareness and openness to all experiences. Further, as awe leads to a mindful state, we expect consumers to make mindful consumption choices. In the present research has two-fold goals. First, we aim to provide physiological evidence in support of the hypothesized effect of awe on mindfulness. Second, we aim to test the downstream consequences of awe on consumption choices.

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Industry Project: Understanding Brand Empathy

Prof. Arvind Sahay (IIMA), Prof. Sudipta Mandal (IIM Indore), Prof. Aditya Deshbandhu (University of Exeter), Veda Poduval (IIMA)

This research project is exploratory in nature, suggests the existence of brand empathy as a concept, and suggests its meaning, scope, and role, in both the domains of marketing and broader society. The researchers deploy a multipronged mix-methods design that begins by exploring the existence of the concept using qualitative data and then relies on quantitative and empirical data for validating the idea and checking it for reliability and replicability. When the study is concluded, the researchers should be able to both identify the concept, and the role it plays in consumer decision-making and help provide evidence-backed reimagining of marketing concepts like brand loyalty.

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Value Creation between Clients and Firms Considering Different Modes of Interaction

Muskan Jindal, Prof. Arvind Sahay

This project aims to analyze the proportion of value coming from the product and how much of it is coming from the relationship between a client and the BDM, or engagement manager. Previous research has hardly investigated the medium of engagement between client and Business Development managers/Personnel and has, thus not, uncovered the interaction of both the parties (Hadjikhani. A & Bengtson. A, 2004) across digital and non-digital media. Especially when it comes to online or digital interaction, this knowledge gap indicates a need for research-based studies generating knowledge pertinent to understanding the interaction between the two using appropriate behavioral and analytical tools. One essential aspect of the relationship approach is an understanding of the characteristics and behaviors of both clients and firms. Relationship marketing studies have noted the lack of an integrative approach that considers the amalgamation of different ways of interaction, i.e., online vs. offline. Hence, there is an urgent need to understand what changes when the clients and Business Development Managers (BDM) interact through an online medium (as compared to offline) and the changes in the outcomes when the proportion of engagement on one medium changes relative to the other in the engagement process. Based on the objectives defined, we propose to:

a. Estimate the relative contributions of different modes of engagement with the client to the relationship and business outcomes
b. Propose a working model of the company Engagement Process with clients.

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The Impact of Vague versus Precise Temporal Framing on Behavioral and Purchase Intentions of Products and Experiences: An Event-Related Potential Study

Sukriti Sekhri, Prof. Arvind Sahay, Richa Nigam, Yash Chakarvarty

Introduction and Research Objectives

Imagine Tejas, who is browsing on an e-retail platform and comes across an advertisement for a new phone model. The advertisement has a picture of the phone, the brand name, and the words "Coming Soon!" in big, bold letters. Consider Seema, who is in a similar situation when she sees an ad for a sleek set of headphones, where the ad promises, "Coming this Week!". Which of the two individuals would be more likely to pre-book the product or have higher purchase intentions?

We often see the use of such temporal framing (vague versus precise) in pre-launch communication about products and experiences. Would varying the temporal framing alter behaviorally and purchase intentions towards the product or experience? Specifically, how would these findings differ across product categories (utilitarian versus hedonic) and experience valences (positive, neutral, negative)? In this research project, we thus examine two broad research questions. First, whether a vague versus a precise date framing (precise near future versus precise-distant future) affects purchase intention differently for hedonic versus utilitarian products. Second, whether varying the date framing leads to different behavioral intentions towards experiences that are positive, negative, or neutral.

Temporal Distances - Vague versus Precise Framing

Extant research has examined the role of defined near versus far temporal distances, but not vague versus precise temporal distances in differing contexts. For instance, in a neurological study, it was found that when participants were asked to imagine adjectives for their near future selves (1 month from now) and adjectives for negative traits elicited more positive event-related potentials (ERPs) deflections than positive traits in the 500-800 ms interval (LPP) (Luo et al., 2013). In the distant future selves (3 years from now) condition, there were no significant differences between positive and negative traits in the same interval (Luo et al., 2013). Another recent study involved giving participants moral dilemmas based in the near versus distant future and asking them to choose between a self-interest serving an immoral choice versus a moral one. The researchers found that "human brains discount the decision utility of the moral outcomes that will occur in the distant future" (Yun et al., 2019).

Like the examples above, current research has compared objectively near versus objectively distant situations, but we will examine how psychological distance, i.e., the perceived distance, plays a role. Our study focuses on evaluating products and experiences based on vague versus precise time frames.

Hedonic versus Utilitarian Products

Hedonic products are considered fun, exciting, and enjoyable, while utilitarian products are functional, necessary, and practical (Dhar & Wertenbroch, 2000). For instance, a mineral water bottle is more likely to be considered utilitarian, while a chocolate bar is hedonic. Recent research suggests that hedonism is linked with a higher construal level (abstract mindset) while utilitarianism to a lower construal level (concrete mindset) (Scarpi, 2021). Our behavioral experiments suggest that a vague date is more likely to be perceived as farther off than a precise date, as its inherent uncertainty increases the psychological distance and construal level. Thus, we expect to find that a vague date (higher construal level) will have a better "fit" with hedonic products, while a precise date (lower construal level) will align better with utilitarian or functional products. This fit should exhibit in terms of greater interest and purchase intentions towards the products.

There are two schools of thought on the neurological impact of both product categories. On the one hand, a recent event-related potentials (ERPs) study has found that utilitarian products lead to a relatively larger N2 component which suggests greater attention in the initial cognitive stage (Shang et al., 2020). Utilitarian products also give rise to a relatively smaller LPC component than hedonic products, implying a smaller negative affective reaction at a later stage (Shang et al., 2020). On the other hand, there is contradictory evidence that suggests that both hedonic and utilitarian products elicit emotions, but in the case of utilitarian products, these are unconsciously generated without the individual being aware of them (Bettiga et al., 2020). In the case of hedonic products, however, consumers are aware of these feelings and thus are able to express them in self-reported measures. We will examine ERP measures to examine if there are differences in the impact of both product categories, specifically in affective reactions when the date framing is varied.

Products versus Experiences

There is evidence that our reactions towards products versus experiences may be different; thus, it is worth investigating whether temporal framing impacts intentions towards experiences differently. People may exhibit more risk aversion towards negative

experiences but greater risk-seeking behavior towards positive ones (Martin et al., 2016). We will thus examine our research question for everyday experiences, which differ in their degree of pleasantness (determined by a pre-test) and their emotional loading (valence: positive, neutral, negative). Specifically, the objective is to uncover whether lack of certain information (vague temporal framing) or precise information (precise temporal framing) alters reactions to and preferences for such experiences.

NSE MARKET PULSE: INSIGHTS

Every month, the CBS Team contributes summaries of the latest research in Behavioral Finance & Economics under the 'Insights' section of NSE Market Pulse—a monthly review of Indian economy and markets published by the National Stock Exchange of India. The team also touches upon research done using neuroscience tools. In the past year, the CBS Team has summarized 37 research papers. The word cloud depicts the broad areas which have been covered across the summaries.

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