DEGREES OF FREEDOM

Department of Statistics
Lady Shri Ram College for Women

01

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In this Issue

SUKANYA BORAH

A Word from Us

Dear Readers,

2020 hasn't been great to any of us yet we've survived and come out of the tunnel stronger. For that, each one of you deserves a round of applause! But with the advent of a New Year, The Department of Statistics is shining bright with the new teams in place, ready to carry the legacy of the previous batches with equal zeal and enthusiasm. It gives us immense pleasure to release the first edition of our newsletter - Degrees of Freedom for the session 20-21.

As people who love to play with numbers, we've kept the theme for this edition as
"Correlation of Data with the World".

The theme encapsulates the need and relevance of data in probably everything that we think and do daily as will be visible in all the informative articles written by the Correspondents. This edition also gives you a sneak peek into the first Alumna session of the department this semester, with the batch of 1982 under the title 'LSR Aaj Kal'.

A special note to the first years: We know that you're in college but also not "in college" so as an attempt to familiarize you with the 'magic of LSR', we've started a column called "Hiraeth for a Home", written by your seniors with utmost love and empathy.

We dearly hope you like it. Awaiting feedback!

Yours sincerely,
Avni, Tulsi & Disha

DISHA BANERJEE
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CYCLIC NATURE OF DATA & REALITY

BY KHYATI HARI

How does the data we consume affect our understanding of the reality that we live in?

Let us look at reality as a subjective experience. "Entities are a state of mind. No two people agree on what the real worldview is." My reality, the way I view and experience the world is vastly different from the version of reality that the vendor across the street experiences or is even varying from the way my sibling looks at the world. Looking at reality in this light while making it ambiguous and taking it towards an intangible realm also leads to a very important observation.

Over the centuries, this idea of information flowing 'outside in' introduced by John Locke has lost much of its appeal. Years of intensive experimentation have made it clear that perception involves dozens of mechanisms, actively shaping stimuli rather than passively receiving them. In Deviate, neuroscientist Beau Lotto presents a complete reversal stating 'it is the human mind that imposes meaning on our perceptions: the true blank slate is the outside world.' More vexing is the argument that we operate with versions of reality. Through a series of analyses, demonstrations, and reflections, he makes the revelation that perception, broadly taken, is not what our eyes and ears tell us; it is what our brain makes us 'see and hear'. Thus, the world is a blank slate and we color it however we like. Every individual has an individual interaction and version of what, in essence, is 'real'.

The data on which we manifest our impression of reality is derived from that very reality and our subsequent interaction with it. The data in conversation could be our interaction with our peers, the life we've lived, the content we consume in the form of entertainment and education, etc. This data is not influenced by others, but the influence of others comprises a part of the data. All of this is stored in the conscious or subconscious mind, which then shapes our reality. Making data and reality flow sporadically.

Our version of reality varies with time too. It is transient, just like the interactions that we have and the people we come in regular contact with. What we view as acceptable or normal, basically under the radar or common doing and happening mutates with time and with it, alters our interpretation of reality. Again recapitulating the cyclic nature of the two variables. Machine learning, an integral part of artificial intelligence can make close to accurate predictions about future events by meticulously analyzing and establishing patterns from the input data. Everyone's version of reality becomes a part of the input data here. When the data pool is large and the data is gathered over a substantial amount of time, accurate predictions are made. For example, predicting flu outbreaks based on the volume of tweets mentioning flu-related keywords and understanding the patterns of human mobility by analyzing the records of mobile phone calls. What these examples have in common is the concept of quantifying and measuring the activity of individuals at the collective level to understand and model human societies in a computational framework.

Thus, intertwining, further complicating and reiterating the cyclic nature in which data and reality flow.

VS CAVEAT EMPTOR
CAVEAT VENDITOR

BY HRISHIKA DARUKA

Have you ever heard of alien abduction insurance? Sounds pretty bizarre, right? Alien abduction insurance (AAI) is purchased to insure us against getting kidnapped by extraterrestrials. In the United States, more than $10 million has been written in AAI, with higher payouts available for people who are abducted frequently.

Insurance is that annoying necessity that we all pay for to make sure we don't end up in massive amounts of debt if our house burns down or if we crash our car or if something tragic happens. Insurance companies offer a guarantee for a certain risk that may or may not occur. They make money by figuring out how much money they are required to bring in to turn a profit on a given risk with a given probability. This further helps to decide how much insurance premium each customer is going to pay. This is done with the help of highly complex models, models involving vast sets of data. Insurance companies average out the actual risk and form their policies based on that. Averaging may seem like general math, but no, that's not the case here.

To understand the risk they underwrite, over time, insurers have gathered a wealth of data but they have been inefficient in monetizing this valuable asset. This is where machine learning comes in. Data science and machine learning offer insurers a step forward in risk analysis by being able to see risks of the things they insure in much more detail than before. This benefits the consumers as well. Analyzing data enhances consumer targeting and product designing, accurate and detailed risk assessment could increase insurance coverage or make it cheaper, improve claim management, and in general make the concept of insurance more accessible.

But with data comes huge responsibility. Insurers are adapting to neoteric technology like telematics and wearable devices to track the daily habits of consumers and to better their understanding of policyholder's needs. Imagine, a small device tracking your every move, almost like an offender wearing an ankle monitor! This raises the question of who owns the data, the insurer or the client? There is a great deal of ambiguity when it comes to data science and the lack of transparency it involves thereof. You and I cannot tell what goes on behind what they usually refer to as a 'black box'. The intrusiveness that comes with technological advancement is a threat to all mankind. The risk of data being corrupted, lost, or stolen is exceedingly disturbing. It is therefore imperative that the insurer is transparent in their use of data and ensures that policyholders don't lose their trust in them.

Data science and machine learning are rapidly transforming every sector and the insurance industry is no exception. It offers incredible advantages to the insurers, the consumers, and the masses in general. It augments the growth of the insurance sector. Certainly, there are a variety of risks involved and potential privacy threats but the opportunities are limitless and outweigh the threats.

Data and Diasporas

BY TARANGINI BHALLA

To a 13-year-old me, 'A House for Mr. Biswas' in the school library sounded more like a story of a middle-aged man in Kolkata, seeking his childhood memories in an old and dilapidated mansion; or perhaps of a young artist in bustling Mumbai, trying to find a humble space that he could call his own. Alas, as it turned out, my guesses were way off. The book talked about a Mr. Mohun Biswas, who although a Brahmin Hindu, was born in a place called Trinidad and Tobago! A quick search of the Atlas took me to the Caribbean Islands, and a Google search informed me that the author V.S. Naipaul, and hence the character, Mr. Biswas, was an Indo-Caribbean, i.e., a grandchild of members of the diaspora of Indian indentured laborers to the Caribbean islands. I had recourse to the dictionary next, which told me that a 'diaspora' consists of members of a common ethnicity who have left their homeland and are now spread out in other geographical areas, but maintain an association with it, and possibly the culture, language and religion.

This brought to mind reminiscences of my grandparents' lives in what is now another country. Even though they cannot be called diaspora, but mere refugees of a partition, my mother told me of an important aspect of their migration. The Indian government counted most refugees and the database obtained was used to provide them with accommodation in places like Kingsway Camp and Lajpat Nagar, ration cards, and wherever possible, appropriate opportunities to rebegin their lives, following the education and skills listed. Hence, while nothing could have possibly eased the pain of the partition and being torn away from their mitti, they were provided with the ease of proper infrastructure, which had been possible through the availability of data. Since then, the world has become increasingly integrated; people of all nationalities have been emigrating to other countries for work, studies, or as refugees. Think of how today, every other resident Indian has a 'U.S. waali cousin', and it wouldn't surprise you to know that while in 1990, 150 million people were living in a country other than their homeland, the figure now lies at 240 million.

Expats are valued assets for any homeland country. Sure, they're valuable to you because they remember to get home that particular variety of Cadbury that you love so much, but can't find in India. For the government, however, the primary benefit lies in the green stuff. Emigrants remit large amounts of money, so much so that for Tajikistan, foreign remittances make up half of its GDP. In India too, these transfers form a substantial portion of the economy of some states. Moreover, diasporas exercise soft power in their destination countries, impact trade and diplomatic relations with the homeland, and even influence local politics. Mexican Americans, for instance, vocally opposed the tightening of immigration controls in the United States. The influence and positions of power that the Indian Diaspora holds in places like the UK, Ireland and Fiji also come to mind. Countries of origin also look for the return of emigrants to enhance the local skill pool.

It has therefore become necessary for both the home and destination countries to map the diaspora and formulate policies to keep them engaged. This is done on several bases like age, educational qualifications, cause of migration, and location. It is pertinent to note that while the global system of passports and visas provides an easy way to prepare the statistics, the accuracy of the information so collected often suffers from the dynamics of clandestine migrations, incomplete coverage, and conflicting political interests. These may also often be inaccessible to third parties, like that khakrawale uncle who's wondering if the export of his famous achar khakras to Zambia would prove a lucrative avenue.

In contemporary times, these gaps can be filled by the use of the potent combination of the internet, big data, and artificial intelligence. Sometime last year, the United Nations Development Project posted an article, asking its readers, 'Can Google search queries help countries map their diasporas?'. It indicated the importance of social media and the internet in this exercise by making useful assumptions, identifying the right queries and keywords, and observing the languages people use on the Internet, along with their respective locations. For instance, Shalini-from-Stockholm's search for 'brown mundes in Stockholm my amma will approve of' on a dating app could put her on India's diaspora radar. In similar ways, entire diasporas can be located and assessed. This will enable the countries of their origin to connect with them and tap the potential that lies in their education, experiences, and most importantly, networks.

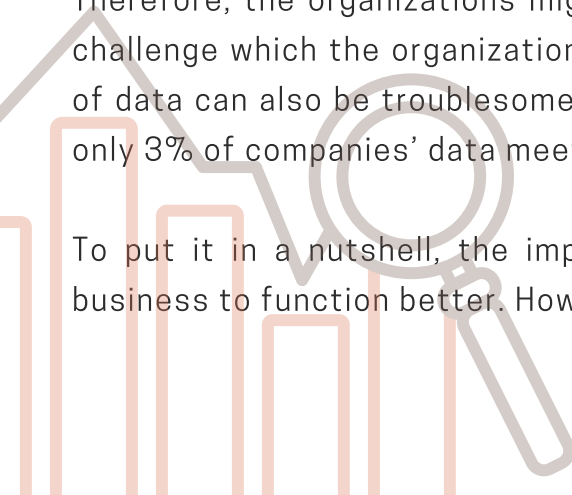# DATA & BUSINESS

BY SHIVANGI THAPA

The above quote rightly sums up the present scenario. If we talk about business in today's world, data has become the backbone. For a good business, you need to have good data. A lot of businesses use data for a lot of purposes. From mapping the company's performance to improving customer experience, data helps businesses in analyzing aspects better and gives them an edge in solving problems. According to a report published in Forbes' 2018 Global State of Enterprise Analytics Report, 51% of enterprises rely on data and analytics to gain better insights on how current products and services are used, 50% use it for risk management and 49% use it to attain customer growth and retention. Among the five surveyed nations, Japan is on the top in the use of data and analytics to drive process and cost efficiencies.

Good data can be of great help to companies in making smarter business decisions. In this regard, a survey by Deloitte found that analytics aided 49 % of respondents in making better decisions. 16% of respondents found it better in enabling key strategic initiatives, and 10% found it helpful in improving relationships with customers as well as business partners. In times of crisis also, data-driven companies are found to perform better as compared to non-data-driven companies. A study was conducted by Tableau Software and YouGov on understanding how organizations in the Asia Pacific and Japan (APJ) region have used data during Covid-19. It was reported that 83% of data-driven companies in India gained critical business advantages during the pandemic. In comparison to about 37% of non-data-driven companies, 76% of data-driven Indian companies were found to be optimistic about the future of their business in the upcoming six months. This shows that data helps in improving the business process. It can also lead to a reduction in the wastage of money and resources as better data will help businesses in analyzing the problem more accurately and quickly. Thus, data and business go hand-in-hand. But it does have some challenges. With data on businesses being available, it can be subject to cyber hacking or other such hazards. Therefore, the organizations might have to spend a little more on cybersecurity. One other challenge which the organizations might face can be of finding credible data as poor quality of data can also be troublesome. A study conducted by Harvard Business Review found that only 3% of companies' data meets basic quality standards.

To put it in a nutshell, the importance of data in business cannot be neglected for the business to function better. However, finding reliable data remains a challenge.

THE WORLD OF CRYPTOCURRENCY

BY ANTRA KASHYAP

Have you ever been mystified by the theme of virtual currency? I suppose the answer is a big yes. We all would have been, some or the other time, confronted with the dilemma of whether we should look into it or not. So here's an article to give you just a quick sneak into it.

Cryptocurrency is a digital currency in which code based on cryptography controls the generation of units of currency and verification of transactions for the transfer of funds. Factually as well as legally, it is not backed by a government or a central bank of any country. The account keeping is done in a distributed manner. Think of it as a distributed ledger one in which you can't alter the order of transactions. In short, you can call it people's money. Money is created by the masses, for the masses, and controlled by the masses. Such money has various advantages compared to FIAT currency (currency issued and authorized by the central bank of any country). That is the whole reason, many banks and governments are opposing the adoption of cryptocurrencies. They are generally feared as they are suspected to deregulate the central currency. Cryptocurrencies take the power out of centralized power centers, whether they are governments or central banks.

Surprisingly cryptocurrencies are best handled with big - data and lead to their various advantages over other currencies. Now, the question arises how does Big- Data help cryptocurrency?

Big data has become one of the most valued and used tools by businesses. With the capacity to comprehend large data sets, trends can be unearthed that would have gone unnoticed. These trends are then influential to business processes and decisions, ultimately ending in more sales and increased profit. Cryptocurrency is on the same pedestal in current times, so it was only a matter of time before these two got around a dinner table and became acquainted.

Big data is helping crypto improve its security, predict trends – and these feed into more appealing crypto startups. But still, there's a great amount of incredulity towards investing in it. Young generations are finding it fascinating whereas elderly people are quite apprehensive for the same. One of the hurdles that prevent people from joining the crypto movement is security. People are entitled to be fearful of crypto when it is largely unregulated. However, owning a Luno Bitcoin wallet and frequenting the top exchanges is being made safer thanks to big data.

Big data is not just about spotting trends to increase engagement or spot trends for more profit. It can also be used in the fight against cybercrime. Analyzing large quantities of data may allow specialists to identify trends in hacking and predict future breaches of security. This info could be used by exchanges and wallet providers to keep all users and their crypto safe.

Big data is now becoming responsible for preventing hacks and improving security and it also helps in spot volatility. To be frank, crypto is very much volatile, the best example we have seen was in 2017 for Bitcoin (one of the volatile coins). One day hitting the highs of December 2017 and the next year sinking significantly – and then revving up again. Still, the investors would certainly sleep easier if they could somehow predict markets and their cryptos' predicted value.

Although big data would be limited in doing this, it could also offer some insights when crypto values have soared and dipped when combined with other data from politics and society. A bigger picture may be exactly what is needed to know more about crypto volatility.
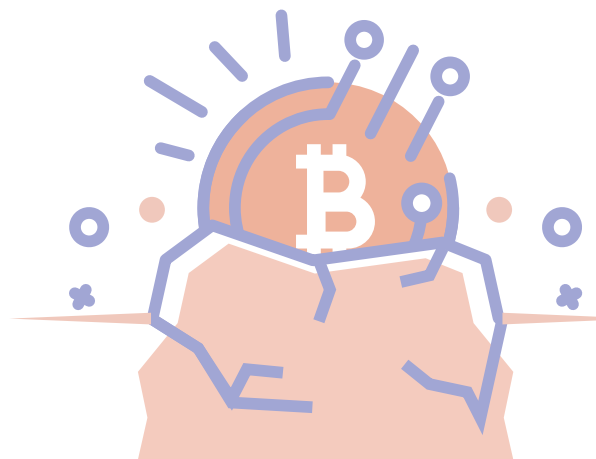
The two previous benefits of big data and crypto joining forces, namely more security and spotting volatility, will help make crypto become a more appealing investment.

For startups who are jostling for positions and also seeking investment against other startups, the adoption of crypto can make investors feel easier if they know big data is providing the two aforementioned benefits. Investors look for safer investments and ones that can have solid predictions.

Crypto startups or startups basing their services on the blockchain can now tick these boxes, thanks to big data. Thus big data is making the world of cryptocurrencies more secure and reliable to invest in.

Although there's a lot of upheaval for legalizing it in many countries including India, still the development for integrating big data with crypto helps us to understand crypto better and help promote it to all.
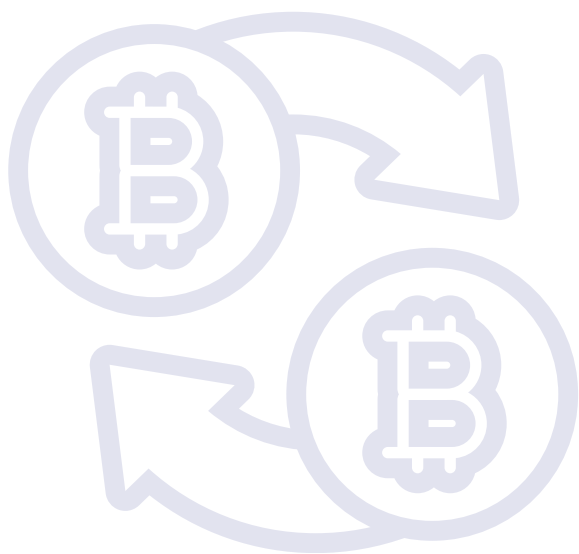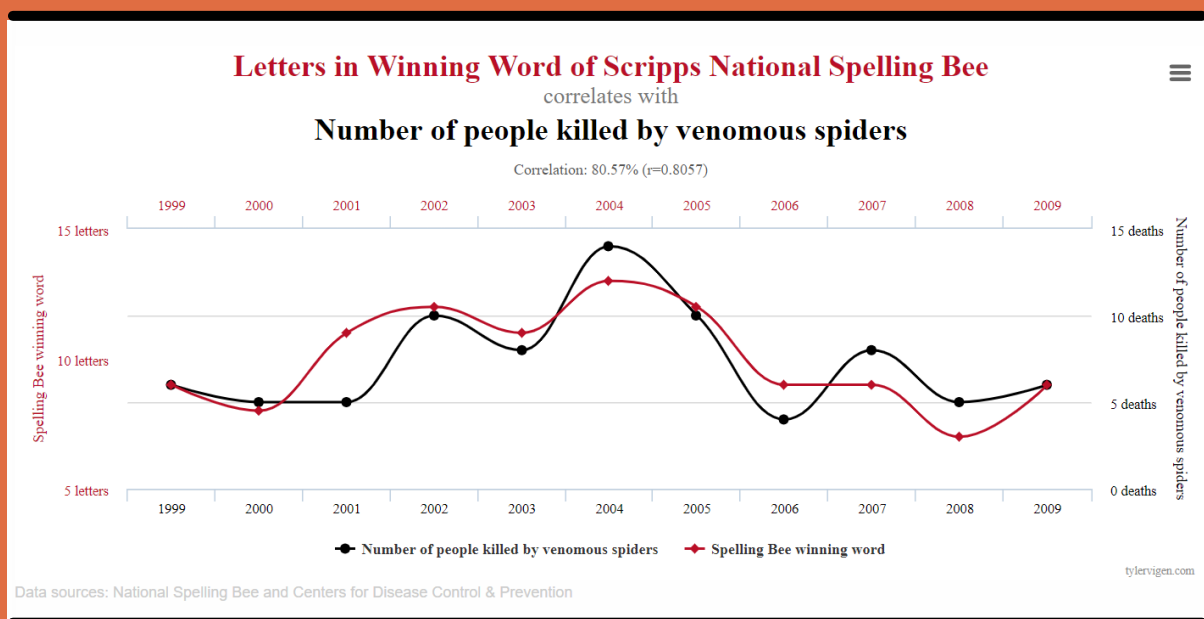
THE CURIOUS CA(U)SE OF CORRELATION

BY RHEA MALL

"One of the first things taught in introductory statistics textbooks is that correlation is not causation. It is also one of the first things forgotten."
*- Thomas Sowell*

Correlation is any statistical relationship that tells us how strongly a pair of variables are linearly related. Causation, on the other hand, indicates a relationship in which one variable is affected by another. For example, numerous studies provide evidence that smoking causes lung cancer. Correlation may imply causation, but this isn't necessarily true. E.g., take a look at this graph, which shows an 80.57% correlation between two completely unrelated variables!

Letters in Winning Word of Scripps National Spelling Bee
correlates with
Number of people killed by venomous spiders

Correlation: 80.57% (r=0.8057)

Legend: Number of people killed by venomous spiders — Spelling Bee winning word

Data sources: National Spelling Bee and Centers for Disease Control & Prevention

tylervigen.com

Sometimes unrelated variables are correlated just by chance. They're called spurious correlations.

Therefore, although it's tempting to label correlations as 'cause and effect', doing so without statistical evidence can lead to false positives where a causal relationship seems to exist but isn't there. To determine causal relationships, we need to rule out lurking/mediator variables. Lurking variables are those that are not included in the independent or dependent variables, but can affect the relationship between the two.

E.g., there is data to show that an increase in ice-cream sales has a positive correlation with an increase in forest fires. Ostensibly, it seems to be a spurious correlation. However, taking into account the lurking variable 'temperature', this correlation makes sense! In summer there's an increase in both ice cream sales and forest fires; hence a positive correlation exists.
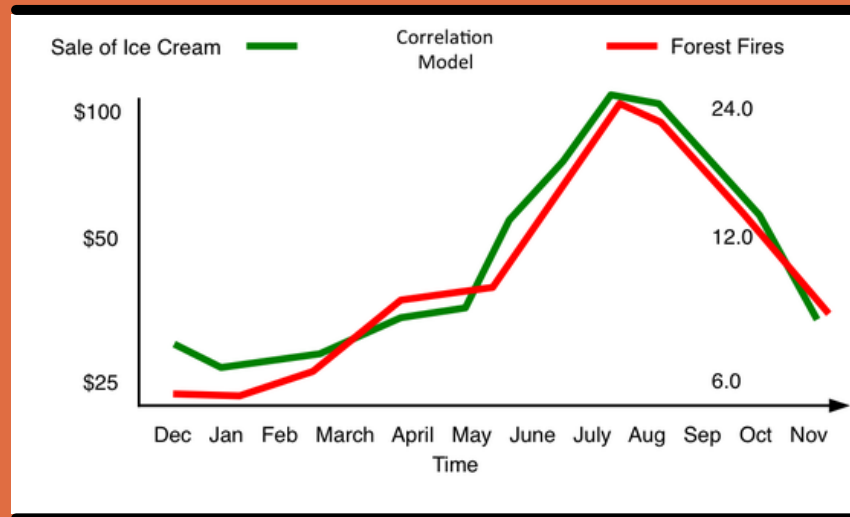
Here are some more misconceptions about causation. A sports coach noticed that additional practice after games caused players to love the sport more. But perhaps those players loved the sport already, and that could have caused them to practice more. It seems to be a causal loop. This is ambiguous temporal precedence i.e., inability to identify which variable is the cause and which is the effect. Another example is that a company claimed that its pre-workout drink caused better workouts because data suggested that people who drank it before their workout did approximately 2 more reps per exercise. This is a post hoc fallacy i.e., an action is taken before another action doesn't mean it directly caused the next action.

Thus, finding additional factors is essential. Hypothesis testing is one way to identify whether a causal relationship exists or not, e.g.:

H0: There's no relationship between joining an in-app community and user retention.
H1: If a user joins a community, they'll remain a customer for more than one year.

If we can reject the null hypothesis H0 with statistical significance (while adjusting for confounding variables), then we could conclude that there is some causal relationship between communities and user retention. In conclusion, correlation does not imply causation. If there is a correlation between variables X and Y, it can be because:
X causes Y or Y causes X or A third variable Z causes both X and YX and Y form a causal loop or there is no relationship at all – just coincidence!

Fresher's Party
You Are What You Eat
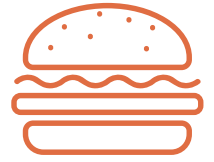
BY DISHA BANERJEE

Freshers' 2021 was different yet not so different!

On 24th of February, all the lovely freshers of the Department of Statistics decked up as the theme "You are what you Eat" and sat in front of their respective cameras to bond and unite with the seniors in order to celebrate being part of the college. The event started with the first years introducing themselves and describing their attire. This was followed by the first event of the day - Treat in a Desert. It filled the online forum with giggles as the freshers chose their favourite 3 items to be stranded with, in a desert, from a "not so appealing" food menu card.The faculty members joined in the event soon after this and added to the fun and enthusiasm of the party. There were 2 more games organized by the seniors - Decode the Delicious Song and everyone's favourite Taboo. Needless to say, the freshers enjoyed themselves, removing the shield of hesitation that might have existed till now. From guessing food items to exploring the beautiful LSR campus that they had not visited yet, it was commendable to see the entire department gel amongst themselves despite being physically separate. To conclude, there was an award ceremony where Shravni Indurkar was announced as Ms. Fresher and Hrishika Daruka as Best Dressed. All in all, we might have been away from each other and could only interact via a digital platform but the warmth and love that emancipated from each of us could be felt through the screens too.

HRISHIKA DARUKA

MUNAZZA

SANYA

SHRAVNI INDURKAR
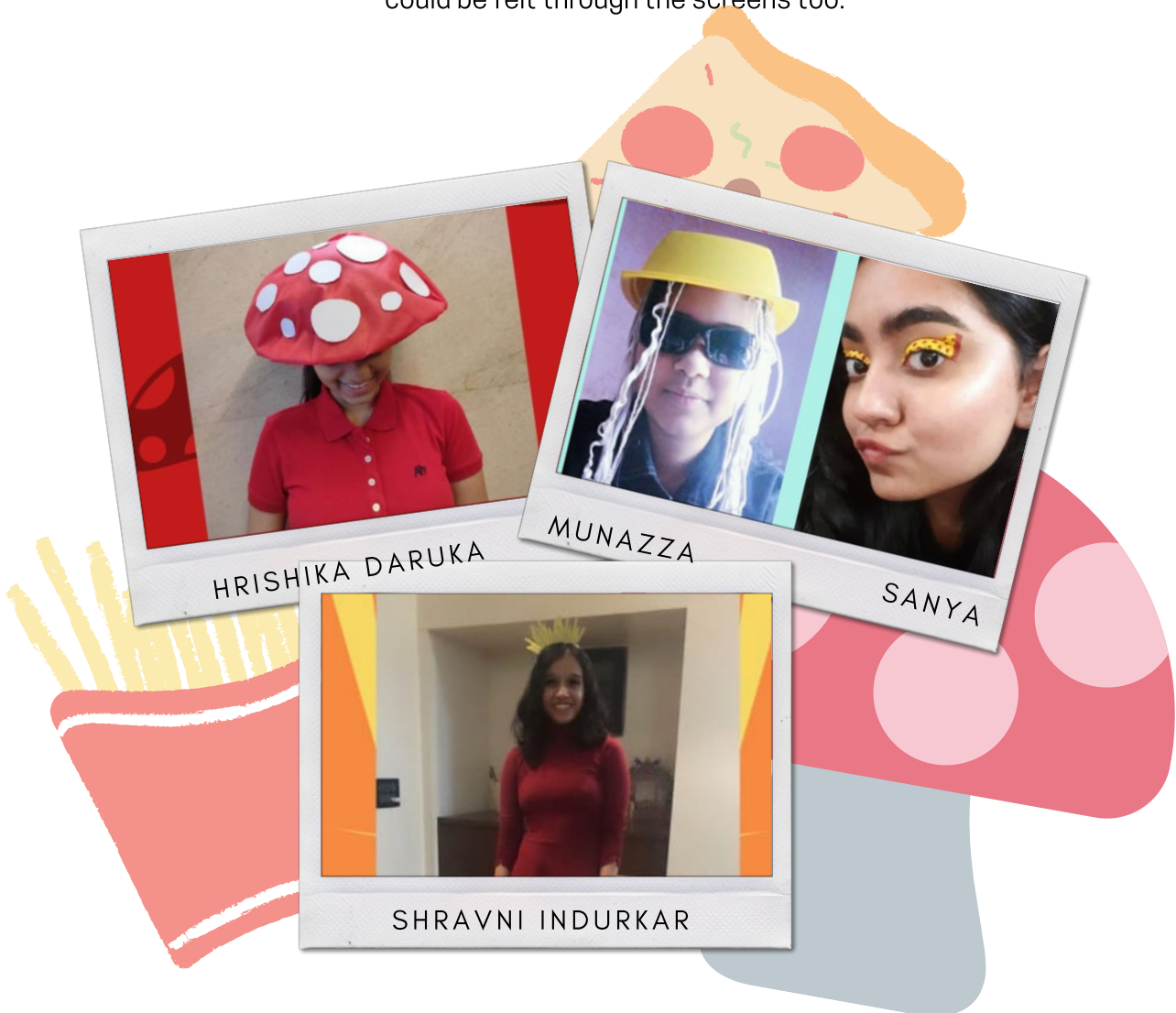
Excel Workshop

WITH
MR SOHAN DEY

BY TULSI AGRAWAL
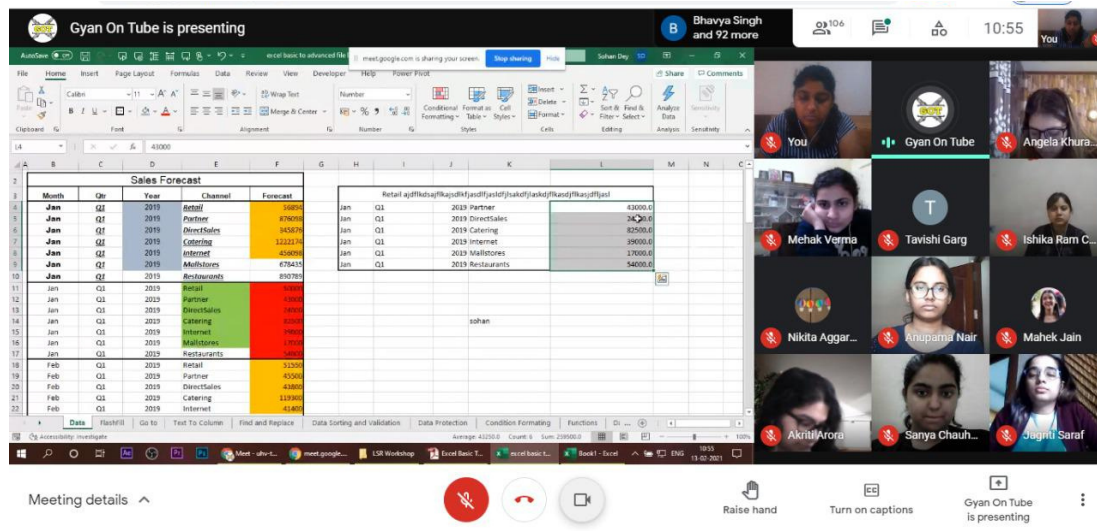
The Department of Statistics, Lady Shri Ram College for Women organized a two-day free workshop on Microsoft Excel on 13th & 14th February 2021. The workshop was hosted by Mr. Sohan Dey, an Associate Manager at EY with over 12 years of experience in Microsoft Office. Mr. Dey runs a YouTube channel called "GyaanOnTube" which has over 9000 subscribers. Mr Sohan Dey is a commerce graduate from the University of Delhi and has over 12 years of experience in Microsoft Office, VBA, Coding, Power BI visualization, Data Analysis and Data Visualization.

With over 100 participants in the workshop from all Departments of the college, the workshop provided the students an informative and interactive learning experience, harnessing the power of the most widely used tool across all industries - MS Excel. Known for his innovative teaching methods, Mr Dey made the workshop interesting and fun for all students. He started from the very basics of Excel on the first day and built upon it by taking various important tools the next day. The two day workshop proved to be a great learning experience for the students.
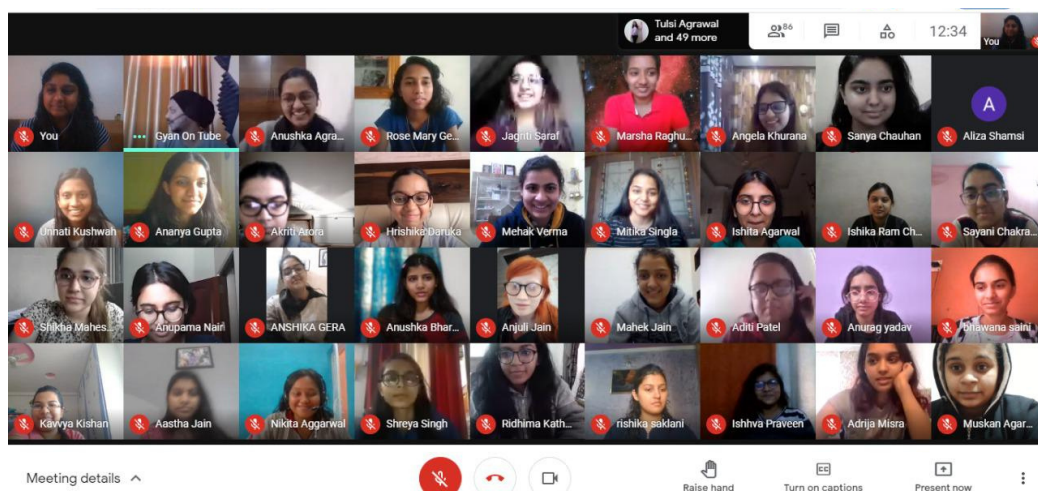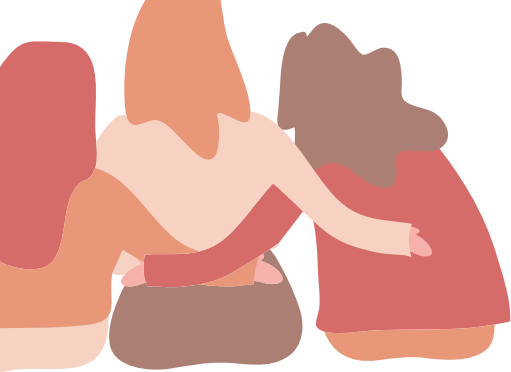
LSR Aaj Kal

A WALK DOWN THE MEMORY LANE WITH THE BATCH OF 1982
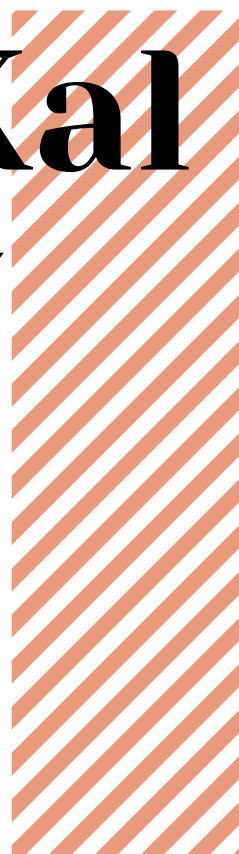
On 21 February 2021, the Department of Statistics organised the first Alumni Talk Session 'LSR Aaj-Kal' with the Batch of 1982, the first-ever batch of Statistics (then, Mathematical Statistics) to ever graduate through the red walls. The talk was graced by Ms. Parool Trehan, President of the Lady Shri Ram Alumni Association, Dr. Swati Shastri, Ph. D. (Mathematics), Purdue University, and Ms. Shormila Gupta Jhunak, Vice President, BioActives Group, Europe GmbH.

Held on Google Meet, the event was open to all departments, and saw the attendance of the Vice-Principal, Professors, and numerous students alike; all eager to travel back in time through the reminiscences of our distinguished alumni. As our speakers took us through their journeys at LSR and beyond, they highlighted moments of success, as well as the trials and tribulations they had to overcome in their careers and personal lives. These brought forth several life lessons for the listeners to learn from. The prevailing message was that we must embrace life for what it is, take things in stride; our circumstances only make us stronger and bring out the best in us. In our strife with the world and the tremendous expectations that it imposes on us, we must not lose our grit, and ourselves.

Glimpses into their life at LSR reflected those of our own, with students being able to relate to stories of strong, undying female friendships and the distinctively conducive environment that a women's college offers. It was also no surprise when the speakers described their experience as the first-ever batch as a smooth ride, as the curriculum was well-defined since the course inception, and the professors, ever supportive.

The eagerness wasn't one-sided, though. The guests too had questions for the current student body, about how their erstwhile second home had changed, our courses and professors, and most importantly, our favourite haunts to eat and shop at.

As for the question on all our minds, no! The 'cafe' was a simple 'canteen' back then!

THE FIRST BATCH OF MATHEMATICAL STATISTICS
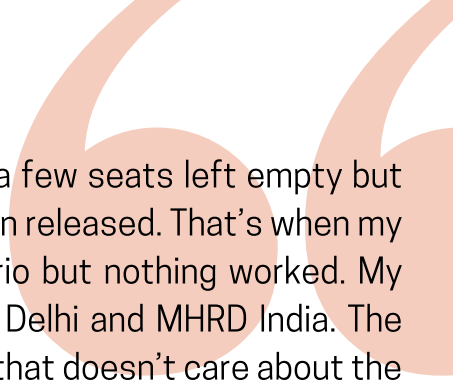(CLASS OF 1982)

BY TARANGINI BHALLA

SUMALI BAJAJ

The Editorial Team, Department of Statistics had the finest opportunity of interviewing Mrs. Sumali Bajaj on the 28th of February. She is an alumna of Lady Shri Ram College, Statistics (H), batch of 2013. Having done her Masters in Biostatistics from Harvard T.H. Chan School of Public Health, she is a current PhD student in the field of Infectious Disease Modelling from University of Oxford. Her unique career path and inclination towards the field of statistics and public health is what drew us to interact with her and we thank the Network & Engagement Team of the Department for helping us get in touch with her.

Interviewer: We had the opportunity to go through your LinkedIn profile and we were amazed and delighted to see the academic and career milestones that you've achieved. We would love it if you could walk us through the journey of being a student at LSR to where you are now.

Sumali: I'd joined Ramjas first because I didn't make the cutoff but I made it into LSR through my sports trial. I was a month late to LSR and I remember talking to the Vice Principal back then because I wasn't getting Statistics as it was already full. But I wanted to study Stats because my aunt was a Maths teacher and she just told me that this is a field which will be applied a lot in future and you'll be able to use it in many ways. I was a very fickle-minded student so I didn't know what to do and felt that Stats would be fine. When I was in Ramjas, Minakshi Pahuja ma'am called me up to inform me that she fought really hard for me and so that I could study Statistics at LSR. I remember on my first day that all the faculty members were sitting in the teacher's room behind Room 9 and they told me to study hard and well because someone had made efforts into getting me in.

Throughout my 3 years at LSR, there was a constant tiff between my Sports and academic teachers because one of them wanted to keep playing and the other wanted me to study. I was a part of many things, from being the badminton team captain to being a part of the dance team as well as the society that worked for the differently-abled. I was the Secretary as well of the Department. During the summer vacations, I knew that a lot of students did fancy internships whereas I pestered professors from various colleges in Delhi for an internship. We did a lot of things that weren't so normal because we enjoyed the subject. While I was in my 3rd year, I prepared for my Masters in Statistics and secured the 50th rank IIT JAM. I sat for placements only because everyone around was doing the same although I was sure I didn't want to. So I looked forward to my Masters.

There was an issue with my Masters which was that the IITs had quite a few seats left empty but they weren't admitting any more students because a list had already been released. That's when my father and I sent emails and faxes informing IIT Delhi about the scenario but nothing worked. My father passed away just around that time and I filed a case against IIT Delhi and MHRD India. The entire fiasco made me realize that I didn't want to study in an institution that doesn't care about the students and their education. Only because it was Statistics, didn't matter. It would have been a national issue if it was Engineering.

So I took a drop and worked in a boutique consulting firm for 6 months. But I wrote for a resignation soon because I loved studying statistics and I wasn't happy doing a job. It was around then that a professor from the Biostatistics Department of AIIMS took me in for an internship for 5 months. He also recommended that I work with the Public Health Foundation of India if I had an interest in Biostatistics.

By then, it was clear that I wanted to do my master's in Biostatistics because I was interested in the application of Statistics in Public Health. It makes me happy to think that some part of my work is helping people in some way.

I started looking for opportunities abroad and got help from a couple of LSR alumni who'd chosen a similar career abroad. I hadn't expected it but I was very happy the day I got my scholarship letter from Harvard because I knew I wouldn't have been able to afford it in any other way. I studied there for 2 years while also thinking of a specific field in Biostatistics for the future. To solve the question, I did 3-4 Research Assistantships in various Departments and diseases like stunting, refugees' mental health, etc. I still hadn't convinced myself for a Ph.D. and so continued with the research work. That's when I joined Imperial College, London as a Research Assistant and worked there for almost 3 years. I studied HIV for 1 year and Alzheimer's for 2 years and realized that I'm interested in infectious diseases more than non-communicable diseases.

I knew I wanted to live in the city and enjoy campus life. I met 2 people and talking to them helped me decide on applying for a Ph.D. at the University of Oxford. I got that too under full scholarship. That was the whole journey but I knew that throughout all of it, I was doing something that I genuinely liked. LSR was the only place where I did something for a CV but never after that. Looking good on the CV is important too but I never enjoyed it. I have only memories of the activities from college that I genuinely liked. For example, I remember dancing and playing badminton and so I still talk about it but nothing much apart from it.

Interviewer: The main quality that attracted us to talk to you was that nobody in our peer group has spoken or probably even thought about pursuing Biostatistics in Masters as well as further. What advice would you give to students who want to study Biostatistics?

Sumali: Firstly, one should understand "Why Biostatistics?"

It was just the name of another subject for me too. There were papers like Survival Analysis, etc but even I didn't have any idea or interest in Biostatistics. When I was in AIIMS, someone told me that if you're interested in applying Statistics, there are chunks or large groups of subjects like Finance, Marketing Analysis, etc. There's one big chunk where Statistics is applied and that's Health. Every hospital will have a data analyst and any study that comes out like "Red meat is not good for health", it's done by a biostatistician. Generally, whenever you think about health, there will be someone doing statistics. I was mainly aware of the three chunks that I mentioned and I realized that I didn't enjoy the other 2 so much. I understand that they are fields that might teach you many skills and you may earn a lot of money but they don't make me happy. At the end of the day, I won't feel like I've helped someone. It's cool that you're helping someone with what you've studied.

I was still trying to understand my level of interest in this field because the data can vary from the cellular level right up to the human population level. It's easier abroad because people are more aware of Biostatistics and the majority of health data has been technologized. There are 2 major categories when we talk about statistics applied to health - communicable diseases & non-communicable diseases. Since the UK is related to the Commonwealth countries, they focus on infectious diseases which I found more relatable. I was working on dengue, zika, chikungunya and now I'd work with COVID so the entire study seems very applicable. If you're interested in theoretical knowledge and you enjoy working with 'pen and paper', you can go for a Masters in Statistics but if you enjoy the methods that you use and like applying them or tweaking them to give better results, Biostatistics can be considered a good option. For advice, I would say you should go for Biostatistics if you think you're interested. When I was in Harvard, the department never focused on specific career options for Statistics students and research was never an option in general so I would suggest that never shy away from reaching out to people outside of India because that gives you a lot of good access. It's very unfortunate that there's a lot of data non-availability and data shielding in India and therefore not very great applied research comes out of it. It's very costly to even submit a research paper for a journal in India whereas it's easier abroad mainly because more people are aware of it. They aren't smarter, they just have more access to the correct resources. If you have a substantial number of people, you can organize seminars where you ask experts to talk about their research and request them to discuss their methods more than the results. Talking to such people will make you realize that these resources are much more accessible and approachable than you think. You should have interdepartmental talks to understand the application of Statistics in the various fields of study.

Sumali: If you're talking about why people abroad get more publications in higher impact journals, is basically because of the accessibility of these journals which isn't anybody's fault but how the journal system is set up which helps people who are well-off from famous universities, so that gap is definitely there. But talking about the educational system, I certainly think that there's definitely a gap from the Delhi University, in particular. In India, studying in Delhi University, the disconnect between getting in research for applied statistics is that people just don't know it exists and so they are unable to bridge that gap essentially. Also, they tend to be uninterested perhaps because the central Delhi University concept is that even if you want to make changes, it is not very feasible. But it's important to bridge that gap between what you're studying and how you can use it in research fundamentally by having various workshops and sessions on different tools and concepts, which will definitely lead to so many people getting inclined towards research and would end up taking research.

RAPID FIRE

FAVOURITE MEMORY FROM LSR

Using the coupons that I used to get after the sports practice and going and getting breakfast as soon as possible

WHAT IS THE BEST WAY TO WIND DOWN AFTER A LONG DAY AT WORK?

I never feel tired by my work because I honestly love what I am doing! But in general, playing some sports or just a good run winds down my day perfectly!

YOUR STRATEGY IN A CRISIS

BREATHE! Breathing really helps. Take a few sips of water and then think about it. You just have one life, so do what you like and ENJOY!

WHAT WAS THE LAST BOOK YOU READ?

The last book I read was Half of a Yellow Sun by Chimamanda Ngozi Adichie and I am currently reading Things Fall Apart by Chinua Achebe.

Hiraeth for a Home

URVASHI DINKAR

I remember running late for my first lecture everyday. Struggling in the crowded metro, catching up on the shows & asking my friends to save a seat. Hurriedly running through the main gate without having the patience to show my ID card (still, had to!)

Walking into the class, seeing my friends all happy, catching up on the gossip, planning where to go, when we'll get a break & obviously thinking about those photoshoots in the lawns to catch that "golden hour."
Making the best of the mini breaks we used to get, catching up with various meetings, events, waiting for the food at the Café,sipping coffee/icedtea at Nescafe and sleeping in the lawns.

SHREYA GUPTA BATCH OF 2022

DESCRIBE YOUR COLLEGE LIFE WITH ONE PICTURE

I still remember when relatives called my parents to ask which college did I take admission in, my parents would proudly say "Lady Shri Ram College (LSR)" and the only response they heard was "LSR? Kya baat hai".

Pursuing Statistics was never my dream but thanks to the teacher who checked my Economics board exam, I landed up in this course instead of Economics.

First few days at LSR were very intimidating, being of my extremely introvert nature, I wasn't able to talk to many people but my mom often told me "don't worry, you will soon find your group of weirdos".

And then slowly and gradually, I met these weirdos who felt like home. I miss sitting on the floor in the ref sec in summers, I miss the masala maggi and ice tea from nescafe that helped us get through the lectures.

I miss photoshoots in the front lawn, I miss dancing at any random spot in the college, I miss the discount that stationary bhaiya gave and how he told every other student "ye discount sirf aapko de raha hoon", I miss sitting in the exhi watching dancesoc practices, I miss eating dahi from Mother Dairy, I miss running to the class for 8:45 lectures,
I miss LSR and my weirdos ❤.

DESCRIBE YOUR COLLEGE LIFE WITH ONE PICTURE

**MAHEK JAIN
BATCH OF 2022**

WHAT WAS YOUR FAVOURITE SPOT TO HANG OUT AT LSR?

**ALIZA SHAMSI
BATCH OF 2022**

Bitterly, one of the most underrated spots in LSR, is its Sports Complex.
But this makeshift badminton court, truly ensnares the essence of passion, brawn, sweat and spirit.
The thumping of the volleyball, the tennis rackets whooshing the air, the ping-pong balls clinking and clunking all this
while, and the audacity and unison of NCC cadets. The 7:30 a.m. ambience is just an inexplicable.
Please note! 7:30 a.m.! Early morning!
Yes, it's difficult ; difficult to not snooze the alarm ; difficult to suit up ;
Then pushing myself to the grounds, Before 7:30
Cafe Coupon Rebounds,
Warming up and jogging in rounds,
Then dragging myself to the gym that surrounds.
Letting my vigor and verve Resound,
But leave not, until attendance is crowned