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SPECIAL EDITION

NATIONAL WEBINAR

"NAVIGATING TURBULENT TIMES - ECONOMIC REVIVAL STRATEGIES POST COVID 19"

Mount Carmel College Autonomous
No. 58, Palace Road, Bengaluru - 560052

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"Navigating Turbulent Times - Economic Revival Strategies Post Covid 19"

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No.58, Palace Road, Bengaluru 560 052.

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58, Palace Road, Vasanthanagar, Bengaluru - 560 052



PG DEPARTMENT OF MANAGEMENT STUDIES

ONE DAY NATIONAL WEBINAR

on

NAVIGATING TURBULENT TIMES- Economic Revival Strategies Post COVID 19

20th January, 2021

PREFACE

The world of business is ever changing and the recent pandemic has changed human life, business, economy and the like, which is unprecedented. This has changed the realities of business, paving way for revival and development, which calls for innovative strategies. It is towards the same that the One day National Webinar on 'Navigating Turbulent Times – Economic Revival Strategies Post Covid 19' held on 20th January, 2021 was organised by the PG Department of Management Studies, Mount Carmel College Autonomous, Bengaluru. The main objective was to provide a platform for faculty, scholars, students, people from industry to reflect, analyse and suggest measures that are required to revive the economy and business during this difficult time.

The changing scenario calls for new and appropriate strategies in the national and international spheres to cope with the unique challenges thrown open to individuals and sectors due to the pandemic and the imposed lockdown and stagnation that the economies had to face. This book is a compilation of 6 full length research papers, 60 abstracts covering fields of biotechnology, commerce, economics, marketing, finance, education, services sector, banking, industry etc. It highlights the economic scenario and its impact on various sectors, thereby suggesting policy prescriptions.

ACKNOWLEDGEMENTS

Many people have contributed towards making this webinar and this special edition of the Carmelight Journal a successful initiative. We personally thank each one of them for their constant support and encouragement.

First and foremost, we would like to express our gratitude to our Journal Patron, Dr. Sr. Arpana, Principal, Mount Carmel College Autonomous, Bengaluru for her constant encouragement for the special edition. We would also like to thank our Vice Principal, Dr. Charmaine Jerome for her guidance.

Our sincere gratitude to Dr. S Ramesh, Dean of International Programmes and Partnerships, MCC for constantly initiating seminars and workshops for the benefit of the faculty and students, Prof. V N Raghu, Dean, Faculty of Commerce and Management, MCC and the Advisory cum Organising Committee of the webinar who have been instrumental in coming up with a relevant theme, which has been the foundation for this special edition of the Journal.

Special thanks to Ms. Rajani Korah, Coordinator, PG Department of Management Studies, who coordinated the webinar and communicated with the Journal Committee - for taking the initiative for this edition. Thanks to Dr. Rohini R, member of Organising Committee for the support extended with the research papers and abstracts along with Dr. Dharmendra H and research scholars Ashwini T S and Sahana Prasad.

Our heartfelt thanks to all the authors and contributors in terms of their research papers and articles, without whose cooperation this edition would not have been possible.

We would like to place on record our heartfelt thanks to Dr. Kavitha G Singh, Research Director and Prof. Cletus D' Souza, Research Advisor for their valuable guidance and support for the publication. We also thank all the members on the Editorial Board of the Journal for their inputs, time and effort.

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MESSAGE

Dr. S Ramesh
Dean, International Programs & Partnerships
Mount Carmel College Autonomous.

The Covid-19 Pandemic has repercussions for everyone around the world. After the report of first case in late January, 2020 in India, we have witnessed rigorous changes in every field. There were a quick succession of events leading to suspension of all travel in and out of the country followed by most of the economic activities having a major fall. The pandemic has significantly changed the way the Economies of the world work irrespective of the level of their development. It has affected how we live, work and behave as individuals, Institutions and Nations. Companies have gone about rapidly deploying digital and automation technologies, dramatically accelerating different trends such as remote work place, shopping, entertainment, and even medicine going online, and businesses everywhere scrambled to deploy digital systems to accommodate the shift. This has changed the realities of business paving way for revival and development which calls for innovative strategies. It is towards fulfilling this felt need that the PG Department of Management Studies, MCC is organizing a National Webinar on " Navigating Turbulent Times - Economic Revival Strategies Post Covid 19" with an objective to provide a platform for Faculty, professionals from Industry, Research Scholars, Undergraduate and Post Graduate Students to reflect, analyze and suggest measures that are required to Revive business and economy during these turbulent times- Post COVID-19. I am sure that the deliberations of the National webinar will be useful to both policy makers and researchers. Would like to thank the speakers of the Webinar – Mr. Suresh Raghavendra, Dr.Rejimon Thomas, Mr. Anil Bharadwaj, Dr.Thyagarajan and Dr.Muralidharan. I would like to profusely thank everyone involved in the webinar and it's publication.

INAUGURAL ADDRESS

Prof V Raghu
Dean, Commerce and Management
Mount Carmel College, Autonomous

Prof Raghu briefed about the webinar by affirming the following that this webinar has been curated with an objective to provide a platform for all to ponder over the effects of the pandemic on the economy and to discuss on the possible revival strategies. Further appended the issues, challenges and strategies raised in the economy due to COVID 19 such as Unemployment, health crisis, migration of labour, social unrest, less tax collection, break in supply chain etc. Plenty of strategies can be discussed during the webinar that are fruitful for the revival of the economy in order to collectively face this crisis.

KEY NOTE ADDRESS

Mr. Wilson Thomas
Managing Director, Carl Zeiss India.

In the keynote session Mr. Wilson Thomas spoke about the challenges the corporate world faced during the covid-19 pandemic. How they tackled the situation and adopted a new normal operation in his company. He also pointed out that Zeiss operated with four major work stream to counter the effects of the coronavirus. The four major work streams are: SAFETY to protect the employees, CONTINUITY to support the customers, STABILITY to manage financial impact and RECOVERY to prepare for acceleration.

He addressed on the current situation and its economic impact and how Zeiss responded for it. Health and safety plans a major role during this pandemic. He said that reduction in active cases gives us a positive picture for the future where markets will pick up. Pre-covid level recovery could take a few quarters post the arrival of vaccine.

Revenue and profitability significantly impacted, requiring to preserve each on priority. Zeiss will continue to prioritize their employee's protection.

The focus areas for Zeiss will be on productivity, price realization and cost conscious mindset. Resilience momentum to be sustained, newer avenues for saving, accelerating digitalization and flexibility working hours will be the prime focus for Zeiss. He also spoke about the external and internal challenges faced by Zeiss and solutions to tackle them.

Mr. Thomas spoke how certain business rose during the covid period and how few business fell during the covid period. He listed few examples like how PVR cinema theaters had no revenue and how Netflix gained popularity in the lockdown period, how retail stores saw few sales and big basket was one of the businesses to gain sales revenue. He spoke about how everyone shifted and adopted to digitalization. He also told that not now during covid period but there will be a continuous growth in the digital companies.

FULL LENGTH PAPERS

UNDERSTANDING THE INVESTMENT PREFERENCE OF RETAIL INVESTORS TOWARDS MUTUAL FUNDS THROUGH DIFFERENT ONLINE PLATFORMS IN THE POST COVID-19 SCENARIO

Understanding the Investment Preference of Retail Investors towards Mutual Funds through different Online Platforms in the Post Covid-19 Scenario

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Abstract: *Human instincts are difficult to understand and infer when it comes to gauging their sensitivity towards various financial products, the quality of financial advice received and their preference towards various types of asset classes for investment purpose, etc. The popularity of this sphere is accentuated with the increasing awareness and usage of mobile apps as a mode of facilitating and tracking investments. Mobile phone apps offer users the convenience of tracking investments, rebalancing of portfolio, receiving updated news related to investments, financial advice from experts and many more services which helps in shaping up the investment behaviour of retail investors and makes them market ready. This research paper focuses in analyzing the top five popular online mutual fund investment apps which are being used frequently for the purpose of investment in different modes and categories of mutual funds and how they have adapted themselves to face the business crises post the pandemic. The outcome of this research paper is to rank these five mutual fund investment apps by making a comparative study to understand as well as decipher the strategies adopted by these platforms to survive in the post pandemic scenario and maintaining customer centricity.*

Keywords: online mutual fund platforms, financial investment behaviour, mutual fund apps, online investing, online financial advisory.

INTRODUCTION

Investment in financial products is often subject to choices and preferences by individuals. It also depends upon exposure of the individual in question towards various available alternative financial instruments. Investigating the investment patterns of keen investors during the last three decades, one would be very much surprised to find the paradigm shift in these four aspects-the investment motive, the investment horizon, the investment alternative and the expected returns. In the current scenario, investors prefer to stay invested for a long time period despite the various phases of economic downturns.

When we talk about the expected returns, investors can be classified into three different categories based on their risk appetite or risk taking capabilities. They are classified as: 1) Risk Taker or Seeker, 2) Risk Averse, and 3) Risk Neutral. A risk seeker investor exhibits a go-getter attitude, always on the lookout for newer alternatives and willing to take the plunge into the deep sea of high risks to reap higher returns in the near future. On the other hand, a risk averse investor is not willingly to take risks and wants to play safe and invest conservatively in traditional forms of investment like bank fixed deposits and postal savings account only. They do not want to experiment with their hard earned money. On the other hand, a risk neutral investor is not at all affected by the financial markets and is very much disinterested with the idea of investing his/her money somewhere to earn returns.

The next aspect to be talked about is the investment alternatives available to investors. If we look at the data three decades down the line, investors preferred bank savings account, current account, recurring deposits and post office savings as the only modes of investment. They did not want to accept the fact that there exist some other lucrative modes of investment too. Before two decades the investors started to become aware of other modes of investment like equity shares, bonds and debentures. In fact, the **LPGD** (Liberalization, Privatization, Globalization and Digitalization) phenomenon triggered to increase the awareness of the prospective investors. Multinational Corporations started to build offices within the geographical expanse of the country which completely changed

the way investors used to think regarding better utilization of their financial resources. During the present decade, newer investment alternatives have been discovered to cater to the varied needs of investors' like- derivatives, commodities, gold ETFs and mutual funds. Investors have newly found the zeal to make their invested money perform better over time.

Investment motives or objectives also form an important aspect for an investor to decide on his/her preferred mode of investment. A research study conducted by an avid Indian blogger probed and found that with the life stages as well as the risk appetite of investor, his/her investment objective keeps on changing. Investors who are risk averse want safe investment products with the objective to keep their money secure irrespective of the returns being received out that invested corpus. Such investors prefer investment in savings account, bank fixed deposits and government bonds, etc. The second category of investors prefers to receive capital gains on their investment, making it evident that they want to grow their principal invested amount. Some investment alternatives offer to fulfill this objective like stocks, gold, mutual funds, property, commodities, etc. These modes of investment, however, attract taxes. The third categories of investors look for a second source of income generation and they try to invest in products that offer returns regularly like corporate bonds, government securities and bank fixed deposits. Other relatively less important objective includes tax exemptions and liquidity.

ONLINE MUTUAL FUND INVESTING IN INDIA

Since 2015, this trend has started picking up in the country with mutual fund investors. This is a newer form of investing in mutual funds which has newly found its convenience with investors across the country.

These are some of the reasons about popularity of online mutual fund platforms. Firstly, online mutual fund investment offers the convenience of choosing the right kind of investment by doing self-study and research on the pros and cons of an investment alternative. Secondly, it reduces the time required to be devoted by the investor to travel

and meet an investment advisor. Thirdly, the investor uses his/her own judgement while taking an investment decision by not relying only on the recommendation of the investment advisor. Fourthly, the investor does not have to bear the additional burden of paying hefty fees for the advice of the investment advisor. Fifthly, the convenience enjoyed by the customer in terms of the time flexibility-the investment can be done anytime as suited by the investor.

According to a joint report by CRISIL and AMFI, it is clearly revealing the increasing trend in market share of the Indian Mutual Fund industry. The following is illustrated below:

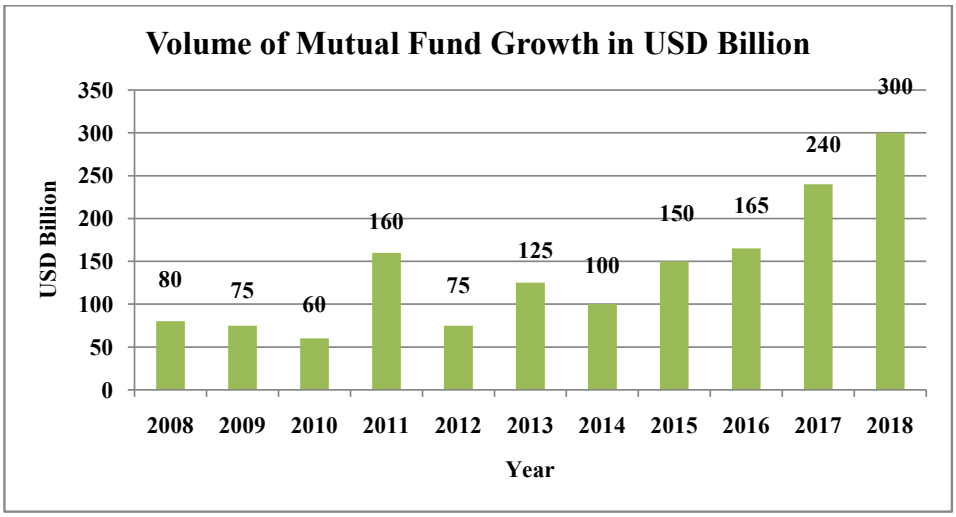

Figure 1: Ten Year Growth Trajectory of Indian Mutual Fund Industry (2008-2018)

***Source*: www.crisil.com (CRISIL AMFI Mutual Fund Report on Digital Evolution)**

SHARE OF INDIAN MUTUAL FUND INDUSTRY VIS A VIS WORLD AND MAJOR REGIONS

The same report as mentioned above has tried to present a comparative study on the importance of the Indian Mutual fund Industry with the World and various major regions

across the world. The results are as follows:

Country	Market Share (in %)
India	12.50%
World	0.60%
Americas	1.20%
Europe	1.65%
Asia Pacific	4.37%

Table 1: Comparative Market Share of Indian Mutual Fund Industry vis a vis the World and other Major Regions as of 2018

Source: www.crisil.com (CRISIL AMFI Mutual Fund Report on Digital Evolution)

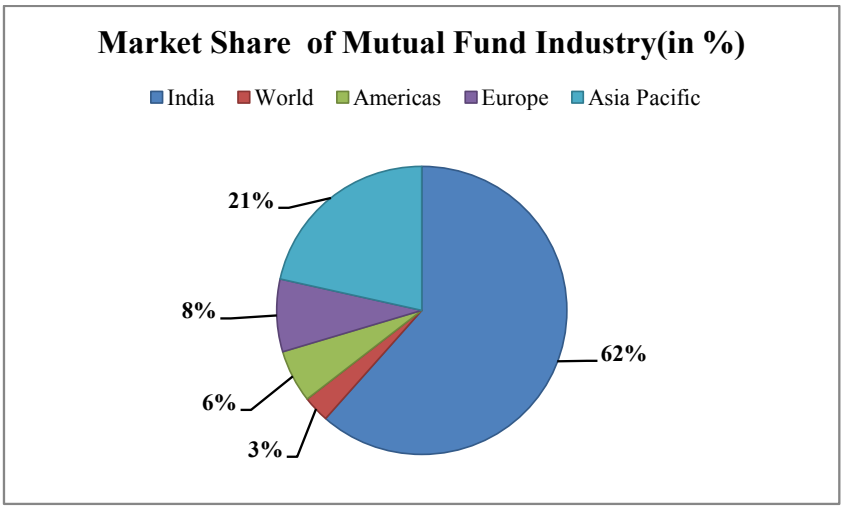

Figure 2: Strength of Indian Mutual Fund Industry vis a vis the World and other Major Regions as of 2018 in terms of Market Share

***Source:* www.crisil.com (CRISIL AMFI Mutual Fund Report on Digital Evolution)**

ONLINE INVESTMENTS IN MUTUAL FUNDS

Smart investors these days have altered the way of investing by offering mutual

funds through online platforms and mobile apps. Digitalization has helped mutual fund firms offer their products online to its customers.

ONLINE MUTUAL FUND PLATFORMS:

1. **Kuvera:** Kuvera is an online mutual fund investment platform for investors who want to invest in direct mutual fund plans. It provides funds from 37 AMCs (Asset Management Companies) and offers direct mutual fund plans at absolutely no hidden costs. The key feature of this online platform is to understand the different financial goals along with the risk appetite of the investor and offering plans accordingly.

The best offerings of this online platform are: no trial period, zero hidden charges and free financial advice for investors.

2. **Goalwise**: Goalwise is an online mutual fund investing platform assisting the investor in achieving their financial goals. It offers robo advisory solutions to its investors. Robo Advisory is online software based product that helps manage the investments of an individual investor without the physical intervention of consulting a financial advisor. After the investor offers all required information for financial advising, the robo advisors fix the data, perform asset allocation and build an investment portfolio that meets the goal of the investor. It helps an investor forego the expenses of hiring a financial advisor.

The basic offerings of Goalwise thus includes: selection of funds, asset allocation, creation of portfolio and financial planning for the investor.

3. **ET Money**: ET Money previously named Smartspends is a well-designed app in which the investment section lists out various mutual funds along with their performance snapshots. It helps investors decide the specific fund and then do the KYC process online. The unique feature of this app is the Smart Deposit feature which offers the opportunity to invest in a liquid fund.

4. **Groww:** Groww is an online platform offering direct mutual fund plans. The

online platform provides mutual funds from 37 AMCs with a detailed evaluation and data points with comparative charts adding a visual appeal. An additional feature of this platform is that it has financial groups to discuss on various topics and knowledge dissemination.

Xperts, another feature on this app allows various financial advisors share and give customers various financial insights. The Switch feature allows you to track all the external and internal mutual funds from one place. This online platform is available for use in desktop/laptop as a web application along with an iOS and Android app.

5. **Zerodha Coin**: Zerodha is an online platform offering both Direct and Non-Direct Regular Funds. In Zerodha Coin, an investor is free to buy any mutual fund of his choice with no commission payment. An investor has the opportunity to select the mutual fund of their choice, review fund performance, buy lumpsum investment or do a SIP.

LITERATURE REVIEW

Zanvar, P. and Bhola, S.S. (2016) in their interesting empirical research study tried to understand the investment pattern of individual investors in Pune city and assess the investor behaviour within the geographical precincts of one of the upcoming cities in Maharashtra. Stratified convenient sampling technique was applied on 670 respondents through questionnaire. Statistical tools such as ANOVA, Paired Sample "t" test, Spearman Rank Correlation, Frequency, Percentages, Mean, etc were used for the purpose of data analysis. Investor demographic profiling included factors like- age, gender, occupation, educational qualification, family type, income, expenditure and proportion of savings to investments, etc. the study concluded by offering some valuable suggestions for all concerned stakeholders. It was inferred that government should develop new financial products and attract more investors while retaining existing investors.

Nandhini, M. & Sivasakthi, D. (2013) jointly conducted a study on retail mutual fund investors in the city of Coimbatore to understand their investment pattern and

behaviour on mutual funds with special reference to Franklin Templeton Investments. The researchers identified certain objectives of undertaking the study such as – the opinion of investor with regards to the investment period and the expected rate of return, identify investor's channel preferences and reveal the comparability values of different schemes of the company. A structured questionnaire was designed having a blend of both primary and secondary data was used to give a complete look to the research report. Secondary data sources included collection of data from reports, brochures, magazines, investor's guides/ handouts, etc. Chi square test and Percentage Analysis was used to analyze the data. After detailed analysis it was found that 32% of investors prefer to invest in mutual funds between 0 to 1 year, 47% of investors prefer 1 to 3 years of investment period, 14% of investors prefer to invest between 3 to 5 years period and 7% prefer to invest in mutual funds for more than 5 years time period. A separate percentage analysis regarding channel preferences of investors revealed that 14% of respondent investors chose stock brokers as a channel of investment, 25% of investors chose banks as their preferred channel of investment, 28% of investors chose distributors as their channel of investment and 33% of respondent investors chose individual financial agents as their sought after channel of investment.

Dr. Raman, T.V., & Budhiraja, K., (2016) in their empirical research study tried to conduct a detailed analysis on the investment pattern of retail investors in financial product like mutual funds. The specific objective included to assess the risk appetite of the investors and identification of factors affecting investment decision with reference to investment in mutual funds. A structured questionnaire was designed and circulated amongst 100 respondents to collect primary data with the help of convenience sampling technique. The questionnaire was well-crafted and segregated into two parts, Part A of the questionnaire were designed to measure the Investor Attitudes and Preferences and Part B was concerned with Investor Profiling. Data analysis was done exhaustively using descriptive statistics, chi square and Kruskal Wallis-H Test for the purpose of analysis. A detailed analysis was undertaken to understand the profile of investors with the help of certain factors like-age group, education, occupation, annual income , gender, risk appetite

and investment experience. The class of respondents caters to different occupations like student, business class, salaried individual, home maker, etc. The investors were also classified based on their risk appetite as low risk, moderate risk, high risk and very high risk. The usage of technology has been an added advantage and some investors have started investing in equity markets and have transacted to buy and sell shares. Overall. it was noticed that the mutual fund industry in India even though faced with tough challenges has been able to sail through smoothly with a promise to deliver the best.

Metre, Sujit G., & Parashar, P. (2019) in their contemporary research work tried to emphasize on the overall impact of digitization on the mutual fund industry in India. The focal point of this study was to acknowledge the effect of digitization on the conduct of business by investors and various financial intermediaries. The authors adopted survey method approach to collect responses from stakeholders namely Asset Management Companies (AMCs) representatives, advisors and investors. The total sample size was 30, three separate set of questions were circulated amongst each group of stakeholder and purposive sampling method was applied. The specific findings out of this probing were that digitalization facilitated ease of compliance, digitization improved transparency in mutual fund industry, digitization has not been able to build faith and trust amongst potential investors, digitization helped in dissemination of information amongst investors and intermediaries, digitalization has helped in efficient processing of transactions, digitization enabled customized services, digitization enhanced the capability to transfer industry updates to intermediaries very quickly and reduced response time, etc. Some practical suggestions were put forward like revival of financial product mix and marketing mix to match digitization and apps must offer certain value-added services to its esteemed customers.

Dikkatwar, R. & De, Tanmoy, et al (2019) in their contributory research work highlighted on the role of technology in facilitating distribution of mutual funds by intermediaries within the country. The objective of this study was to focus on technological innovations introduced in mutual fund distribution and also to analyze the present state of

online mutual fund platforms. It revealed the fact that mutual fund industry has exhibited a phenomenal growth in their Asset Under Management (AUM) over the last 18 years and credit for this goes to the emerging technological innovations taking place within this industry. The authors deeply studied the distribution modes in progressive countries like USA and UK, out of which they inferred that the same has to be also applied in India to make the mutual fund industry grow. It was also depicted that use of virtual channels such as internet and mobile phone in availing financial services, selling of financial products via electronic kiosks and other modes like selling of financial products across supermarkets, retail chains, small shops, social media will definitely bring in better results for the mutual fund industry in India.

DATA ANALYSIS AND INTERPRETATION

There has been an unprecedented increase in the number of active internet users in India over the years signaling a strong possibility of the functioning of online mutual fund platforms. The following data and illustrations will highlight on the same:

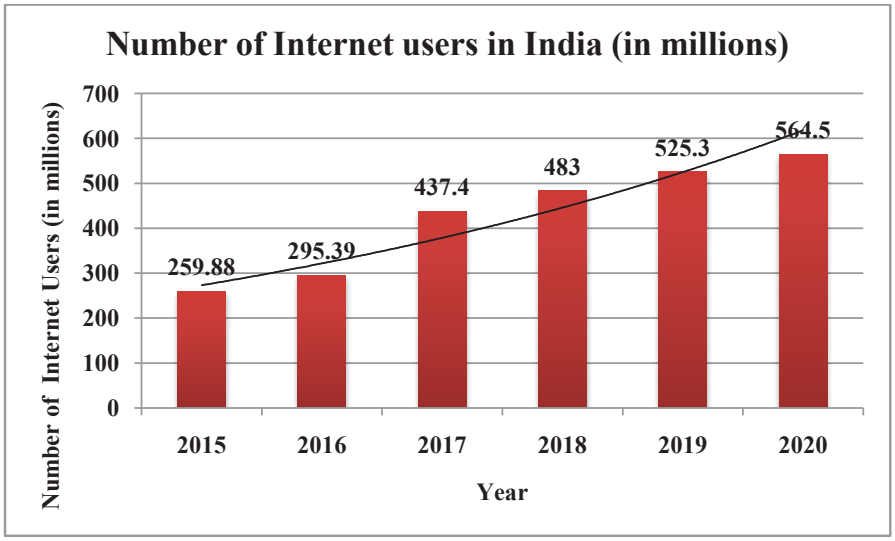

Figure 3: Volume of Internet users in India (2015-2020)

Source: **www.statista.com**

According to a report by Swedish telecom equipment maker Ericsson has predicted that India's mobile data traffic is the highest in the world at 9.8 GB/month which is expected to grow at a CAGR of 23% every month till 2024. The same is depicted below:

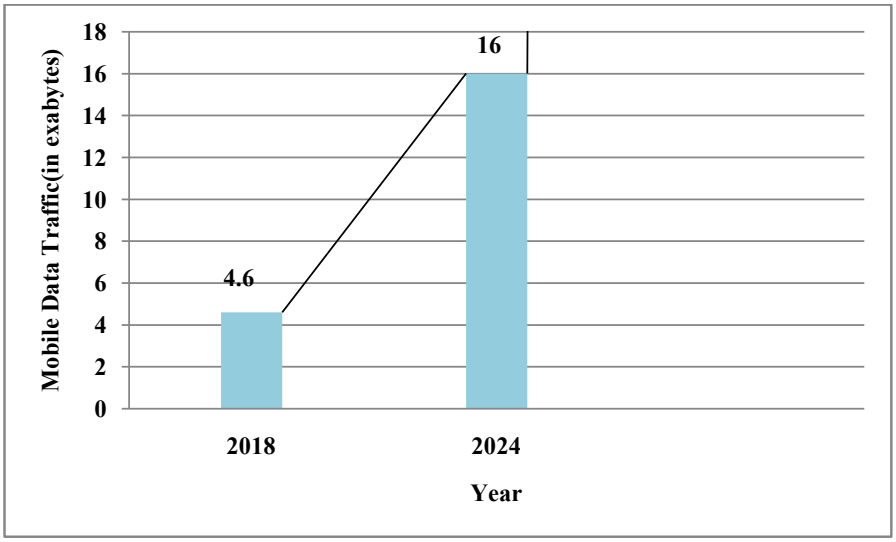

Figure 4:Projection of Mobile Data Traffic in India (2018-2024)

***Source*: www.ericsson.com**

A different dimensional statistics is presented by the Indian Brand Equity Forum (IBEF) regarding the volume of App downloads in India. There are many subscribers who conduct financial transactions through mobile phone only via apps. All the mutual fund service providers having online presence offer their services through apps too. Thus, it is very important to gauge the increasing trend of app usage in India. The report states app downloads in India was 18.11 billion during 2018 which is expected to reach to 37.21 billion by 2022. The same has been illustrated below:

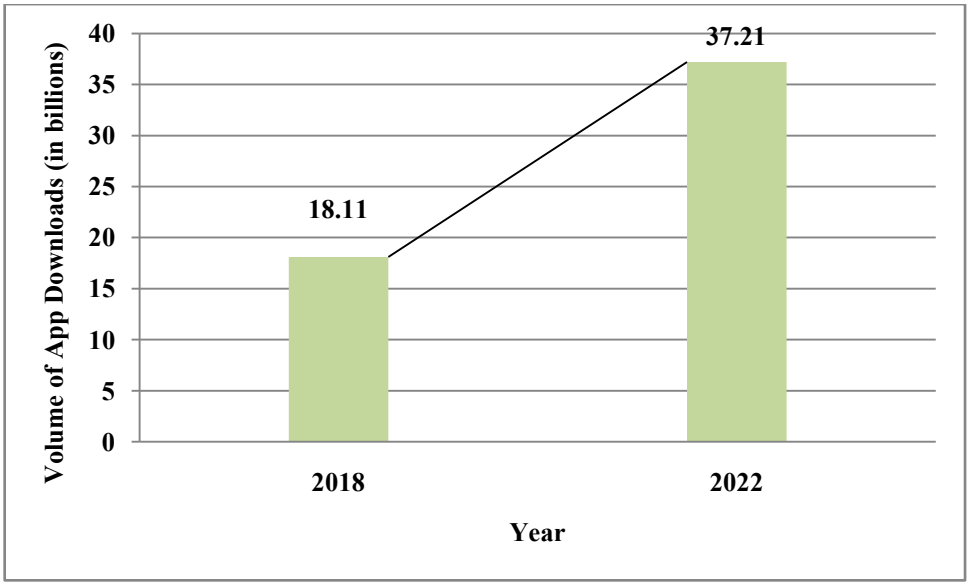

Figure 5:Projection of App Download volume in India (2018-2022)

Source: www.ibef.org (Indian Telecom Industry Report, November 2020)

The above data chart and figure clarifies the fact that the number of Internet users in India has seen an upward trend at a CAGR of 17%. This is a credible achievement made by the citizens of the country to help in the smooth penetration of online marketing and selling of mutual funds and other related mutual fund products.

Sl. No.	Name of the Online Mutual Fund Platform	Cities Covered	Number of Transactions	Number of Users	Asset Under Management (in crores)	Type of Offerings
1	Kuvera.com	800	1,25,00,000	125,000	8,500	Mutual Funds, Gold, Save Smart Deposit Accounts
2	Goalwise	433	6,00,000	40,000	N/A	Mutual Funds

3	ET Money	1,300	3,00,00,000	40,00,000	10,000	Mutual Funds, National Pension Scheme, Tax, Loans, Insurance
4	Groww	800	N/A	40,00,000	413	Mutual Funds
5	Zerodha Coin	75	N/A	8,50,000	5,500	Mutual Funds

Table 2: Comparative Advantage Data of Top 5 Online Mutual Fund Platforms

***Source*: Collected by the author**

The above figure and chart data shows various important statistics and information pertaining to the different online mutual fund providers. In order to ease out the process of classification and ranking, few parameters have been identified like- presence in number of cities, number of transactions executed, total number of users of these platforms, total value of assets under management by each specific firms and their differentiated product offerings.

From the above data on the online mutual fund platforms it was observed that:

- Kuvera ranks the best in terms of its total asset under management and diverse product offerings
- Goalwise is an upcoming platform with lots of feat to achieve in the years to come
- ET Money ranks best in terms of its wide customer base and varied basket of product offerings
- Groww stands as the market share leader in terms of its reach ability to customers
- Zerodha Coin is the best in its category considering the number of active users and its total asset under management value

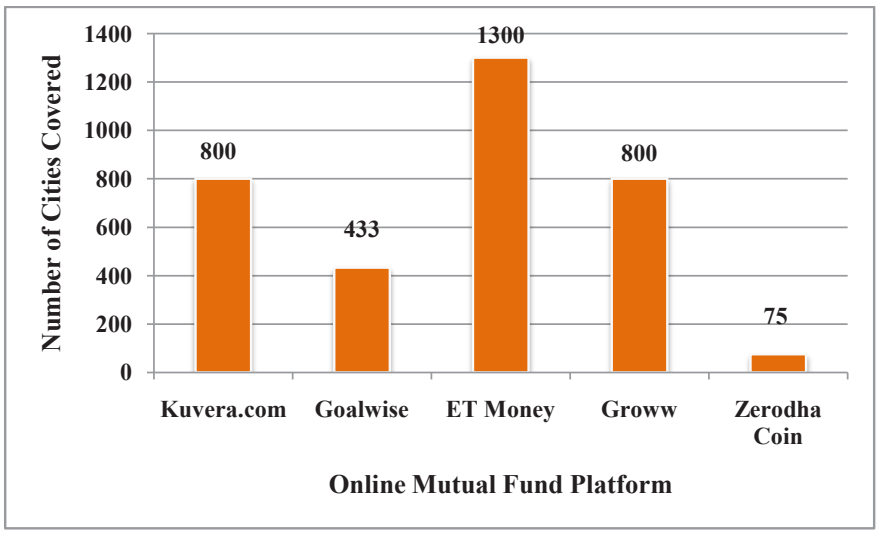

Figure 6: Number of cities covered by the Online Mutual Fund Platforms

***Source*: Collected by the author**

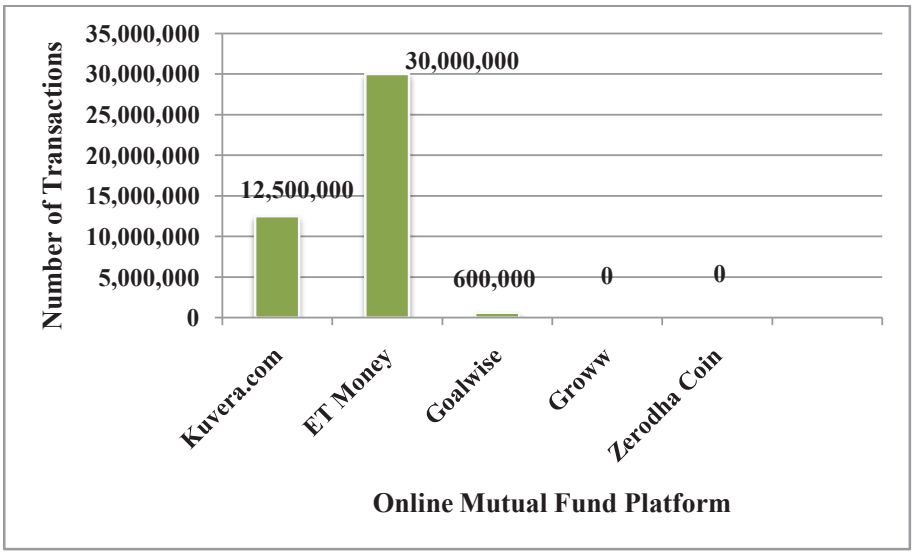

Figure 7: Number of Transactions performed by the Online Mutual Fund Platforms

***Source*: Collected by the author**

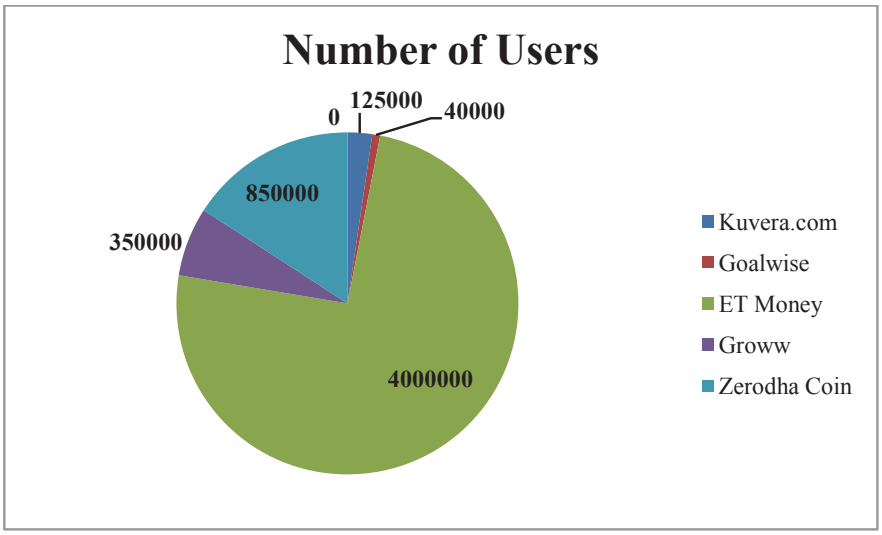

Figure 8: Number of Active Users of the Online Mutual Fund Platforms

***Source*: Collected by the author**

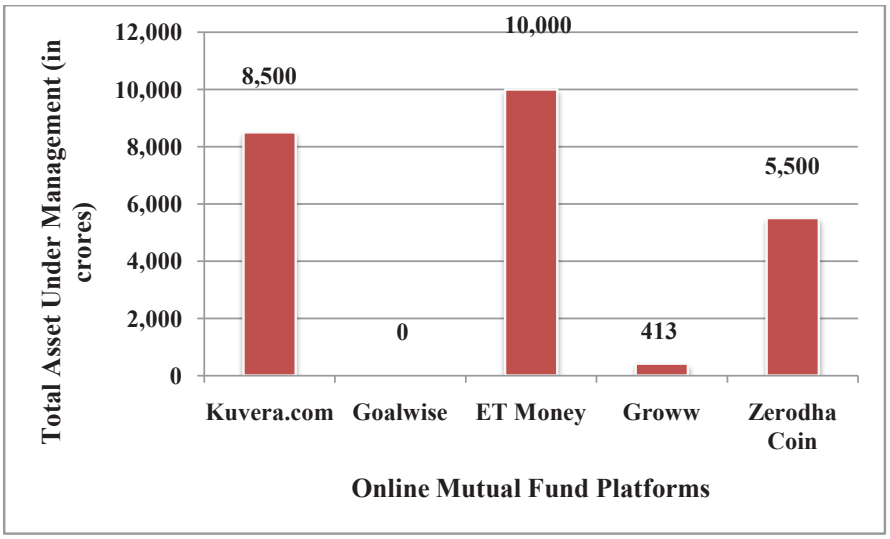

Figure 9 : Total Assets Under Management (AUM) of the Online Mutual Fund Platforms

***Source*: Collected by the author**

All the above diagrammatic representations show specific variations amongst the listed online mutual fund players and the same has been depicted through charts.. These charts are indicating the fact that each one of the online mutual fund providers are the best in some parameter or the other and with the passage of time they will build up capabilities to beat their rivals.

STRATEGIES ADOPTED BY VARIOUS ONLINE MUTUAL FUND PLATFORMS TO MANAGE BUSINESSES POST COVID 19

- Kuvera.com, since March 2020, took it up smartly as an opportunity by gamifying the offering of mutual funds. The company has been offering loyalty coins to its existing customer base and encouraging them to avail value added services family account planning and tax harvesting. The firm has targeted youngsters and millennials as well as collecting customer response and feedback to manage its business during these tough times. The customers who use these value added services also get charged a nominal fee thereby making it more lucrative.
- Goalwise, acquired by Niyo Money believes that neo banking is the need of the hour in these difficult times. It is surveyed that people find it more convenient to carry out transactions digitally which has been able to provide a positive customer experience.
- ET Money, another virtual mutual fund platform, had reworked their strategy. It was advised that active investors put their investments in selected sectors like pharmaceuticals. A further suggestion was made to investors to invest in stocks outside India and make optimum use of financial models to understand the right debt-equity mix for investment in these testing times.
- Groww, one of the preferred online mutual fund platform targeted millennials and took it as a challenge to make the financially aware through its program "Ab India Karega Invest" about mutual funds and various investment platforms. It is able to add 1.5 lakh SIPs every month using this platform.

- Zerodha Coin, a subsidiary of Zerodha and a successful online mutual fund platform having a substantial number of customers believes in offering discount brokerage to attract customers. As per data shared by the National Stock Exchange, Zerodha has 26 lakh customers, the largest a broking firm can think of at this pandemic situation. Zerodha Coin made a big leap in embracing technology and retaining customers to offer best in class service.

FINDINGS & SUGGESTIONS

Online Mutual Fund platforms are still at the developmental stages, yet a considerable amount of progress has been noticed. To detail out the future roadmap of these online mutual fund app platforms in provide investment service some measures can be suggested:

- Growth in app download volume will have an expected outreach of 37.21 billion by 2022 which is a promising trend for more frequent and convenient usage to satisfy the investment need of the client.
- Swedish telecom maker Ericsson has predicted that India's mobile data traffic is one of the highest and it is expected to grow at a CAGR of 23% every month till 2024. This is a sureshot sign of success for the online mutual fund platforms, only certain measures need to be suggested to improve the marketability of their investment products.
- Different online mutual fund platforms rank best in terms of their capabilities. The set parameters to judge them includes-number of cities covered, number of transactions processed, number of registered users, total asset under management and type of products offered.

CONCLUSION

Investment in itself is a complex phenomenon and a lot of thought process goes in the mind of the customer based on which they take investment decisions. Hence,

understanding customer psychology is a must. Investors also need to have the much-needed awareness regarding different types of financial investment products and the risks associated with them. Self-introspection of investors is also required regarding their investment objective, risk appetite and expected returns. Framing a meaningful financial goal is the prerogative of both the client and the financial advisor and both should work together to make this successful. In fact, out of the five mutual fund platforms taken up for study, most of them offer financial advise for free. As Digital India progresses towards the next era of millennials, online investing in mutual funds is going to set the trend for the future.

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PARALLEL DIMENSIONS

TO

FUND RAISING IN THE ERA OF

CRYPTO CURRENCIES:

EVALUATION AND PERFORMANCE

PARALLEL DIMENSIONS TO FUND RAISING IN THE ERA OF CRYPTOCURRENCIES: EVALUATION AND PERFORMANCE

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Abstract: *No one knew that the Industry 5.0 is here and never had we realized that, the revolution in the areas of Big-data analytics, Artificial Intelligence and Block Chain Technology can change the way we strategize, conceptualize, raise funds and transact with the world. The emergence of crypto-currencies as an investment option has been debated a lot from the perspective of governance, regulation and privacy. But, now it has also been considered as a medium for venture funding without much hassles when compared to traditional crowd funding methods. Thus, this study tries to examine the performance of several cryptocurrencies which have emerged as a medium of investment and test if they also exhibit the trends commonly observed in other investment mediums such as shares, bonds, mutual funds etc. The results of thestudy would help in better understanding the crypto-currencies in the era where its existence as a security is debated for coming up with a crypto-currency policy by many countries.*

Keywords: ***Crypto-currencies, Initial Coin Offerings (ICOs), Crypto currency policy, Block chain technology, digital currency.***

INTRODUCTION

The cryptocurrencies has enjoyed strong momentum throughout the years from its inception as analysts, institutional investors, and financial-services companies have turned increasingly bullish on its uses especially in the period 2020. Bitcoin leaped to a record high of 1 bitcoin equaling Rs. 28,30,020.27 on 8th January, 2021 as its supercharged 2020 rally continued into 2021 also.

Considering these facts, in this fast-paced environment where information technology has introduced more options for investments, it seems individual investors can do nothing but to hope to stumble upon an idea of brighter unexpected discovery of bitcoins as investment choice too. The behavioural studies into investment decisions track various factors to be responsible for decision making to make investments in cryptocurrencies. This does not apply to only individuals but mainly to news startup firms and multinationals. Shefrin (2000) defined behavioural finance as "a rapidly growing area that deals with the influence of psychology on thebehavior of financial practioners". It is believed that, among behavioural theories, four importantfactors namely Heuristic-Driven Biases Theory, Prospect Theory, Market factors and Herding effects play an important role in affecting the rationality of retail investors. These concepts have been also observed to be true in case of financial investors in cryptocurrencies recently. Ritter (2003) suggests that, human decision processes are based upon several cognitive illusions, whichcan be classified into groups in accordance with the prospect theory. These illusions maybe due to heuristic decision processes and by adoption of mental frames. Investment decisions in the present times are difficult to arrive at, due to complexity of the investment avenues and their combinations. So, investors often require mental shortcuts which can help to simplify these complex decisions. Heuristics helps explain these complex decision-making using experience and practical efforts. These decisions often can be further simplified, if there is availability of more information. Sohani Islam (2012) documented that, decisions are often made based upon the nearest available information. Kahneman and Tversky (1974, 1979) revealed that, irrationality is observed in case of both the individual level and the market level. Muhammed Talha Naseem Uppal et.al (2012) suggest that, this irrationality is often caused by decision makers not being emotionally stable in nature in order to make these complex decisions. Geist (2003) showed to the investor community the active role of emotions in the financial decision making process. Being among the earliest few who propounded that, investment decisions are shaped by investors own unconscious emotional convictions. The study paved way to recognize and analyse these emotional patterns and inculcate it in the investment decisions. But, Lusardi and Mitchell (2006) examined and proved that, equity investors do not have required knowledge of

economics to make investment decisions and thus, need to cultivate the habit of investing scientifically and not irrationally. Hence, behaviour of the investors/companies raising funds or investing into the business may be either similar to the studies discussed or can be attributable to some other characteristics. But, if restricted by the government, if decision prevail to investment once again, it becomes important to examine the characterstics of the investment avenues.

PROBLEM STATEMENT

On December 24th, 2013, Reserve Bank of India (RBI) cautioned users about "Decentralised Digital Currency" or "Virtual Currency" (VCs) such as Bitcoins (BTC), litecoins, bbqcoins, dogecoins etc., against potential financial, operational, legal, and security related risks. Inspite of the initial warning the crypto-currency market grew beyond ones expectations buoyed by the rising prices of the crypto-currencies. The growth observed also led to a belief that, the government and regulators can recognize and regulate the crypto market in the near future. But, hopes were cast down in the Budget 2018, when the financial minister announced that, "crypto- currencies are not valid tender" and they would be considered to pose financial and legal risks in the same way as it was observed by the RBI. Apart from being de-regulated in nature, it is often debated that cryptocurrencies exhibit the few similar characteristics of financial instruments such as shares and seasonality patterns might be correlated. Thus, the study tries to examine, if there exists a seasonal pattern in the crypto-currencies.

OBJECTIVES OF THE STUDY

To examine whether, there exists seasonal patterns in popular crypto-currencies traded around the world.

To discuss, whether crypto-currencies can be classified as a financial instrument for investment purposes.

METHODOLOGY

DATA COLLECTION

To examine the performance of crypto currencies, daily price data of more than 29 most popular crypto currencies available in the market were collected from year 2010 to December 2018. The time series data of the cryptocurrencies was downloaded from various websites available such as kaggle.com, coinmarketcap.com, quandl.com. The various currencies and their time frames considered are given as follows in Table 1.

Table 1: List of Crypto currencies and the data sets range

ID	NAME OF CRYPTO CURRENCIES	TIME PERIOD	
		FROM	TO
BTC	Bitcoin	17 July 2010	12 October 2019
ETH	Ethereum	07 August 2015	12 October 2019
XRP	Ripple	21 January 2015	12 October 2019
BCH	Bitcoin Cash	01 August 2017	12 October 2019
LTC	Litecoin	24 October 2013	12 October 2019
DASH	Dash	08 February 2014	12 October 2019
XEM	NEM	02 June 2017	12 October 2019
NEO	NEO	05 August 2017	12 October 2019
XMR	Monero	29 January 2015	12 October 2019
BCC	BitConnect	18 March 2017	12 October 2019
ETC	Ethereum Classic	27 July 2016	12 October 2019
OMG	OmiseGO	14 July 2017	12 October 2019
QTUM	Qtum	17 March 2017	12 October 2019
ADA	Cardano	01 October 2017	12 October 2019
LSK	Lisk	24 May 2016	12 October 2019
ZEC	Zcash	28 October 2016	12 October 2019
USDT	Tether	09 January 2015	12 October 2019
WAVES	Waves	20 June 2016	12 October 2019
HSR	Hshare	07 September 2017	12 October 2019
STRAT	Stratis	11 August 2016	12 October 2019

XLM	Stellar Lumens	17 January 2017	12 October 2019
ARK	Ark	22 March 2017	12 October 2019
BCN	Bytecoin	02 June 2017	12 October 2019
STEEM	Steem	17 April 2016	12 October 2019
EOS	EOS	29 June 2017	12 October 2019
ARDR	Ardor	13 October 2016	12 October 2019
PAY	TenX	26 May 2017	12 October 2019
REP	Augur	04 October 2016	12 October 2019
PIVX	PIVX	13 February 2017	12 October 2019

DATA METHODOLOGY

In order to examine the performance of the cryptocurrencies considered in the study, the prices were subjected to following methods as follows:

1. **STATIONARITY TESTS**: The data of all the 29 cryptocurrencies were considered for the study. Daily closing prices of the 29 crypto currencies were considered for the period as shown in Table-1. Before proceeding with further tests, closing prices were tested for stationarity. It was observed that the data considered over specified periods for all the indices were non-stationary in nature. The Augmented Dickey-Fuller test (ADF) on the closing price values was applied to test if the series considered was stationary or not- stationary. Thus, the actual tests were not performed on the daily prices themselves but on the first differences of their natural logarithms as shown below:

$$R_t = log_e P_t - log_e P_{t-1}$$

Where R_t represents the return on an currency, p_t is the price of the currency at the end of the day "t", and p_{t-1} is the price of the currency at the end of day "t-1". Further, for the return series R_t, the Augmented Dickey Fuller (ADF) test was conducted. ADF consists of a regression of the first difference of the series against the series lagged k times as follows:

$$\Delta R_t = \alpha + \delta R_{t-1} + \sum_{i=1}^{p} \beta_i \Delta R_{t-1} + \varepsilon_t$$

Where,

$$\Delta R_t = R_t - R_{t-1}$$

The null hypothesis is H_0: δ=0 to be tested against H1: δ<1. The acceptance of null hypothesis implies nonstationarity. Thus, all the currency prices were transformed to stationary time series by differencing or by detrending depending upon whether the time series were difference stationary or trend stationary. Since the time series data of all the currency prices considered were log-differenced and thus stationary in nature, the order of integration (differencing) is one.

2. **Descriptive Statistics**: Under Descriptive statistics for returns of all indices the following measures like average returns (Mean), Standard Deviation, Median, Minimum and Maximum values, Number of observations, Skewness and Kurtosis, and finally the Jarque-Bera test statistics and its probability were included.

3. In order to know the strength of relationship between the various cryptocurrencies, Correlation analysis was conducted using the equation given below:

$$\boldsymbol{r = \sqrt{r^2} = \sqrt{1 - \frac{\sum(y - \hat{y})^2}{\sum(y - \bar{y})^2}}}$$

Where, variation of the Y values around the regression line is represented by the numerator $\Sigma(Y-Y)^2$ and the variation of the Y values around their own mean is represented by the denominator of equation $\Sigma(Y-Y)^2$. One minus the ratio between these two variations is the coefficient of determination (r^2) and square root of coefficient of determination is the coefficient of correlation. It provides a measure of degree of association between two variables and does not imply any cause and effect relationship.

In order to test for seasonality in returns, the following Ordinary Least Square model withdummy variables representing the days of the week was considered as follows:

$$R_t = \sum_{i=1}^{5} \delta_i D_{it} + \varepsilon_t$$

Where, R_t is the returns in period t. *i* indicates all days of the week and *D is the dummy variable for all days.* δ_i represents the coefficients estimated using OLS method. The error term is assumed to be independent and identically distributed with a zero mean and constant variance. To capture the conditional dynamics characterized by heteroscedasticity, or time-varying volatility in the return series, GARCH model was adopted which stands for Generalized Autoregressive Conditional Heteroscedasticity. According to the GARCH model of order p and q, which is denoted as GARCH(p,q) model, the conditional variance of the time series depends on the squared residuals of the process(Choudhary,1995);

The GARCH (p,q) model suitable for studying the calendar anomalies is shown below:

$$R_t = \sum_{i=1}^{5} \theta_i D_{it} + \varepsilon_t$$

Where, ε_t is an error term with zero mean and conditional variance σ^2, which is specified as follows:

$$\sigma_t^2 = \alpha + \beta\varepsilon_{t-1}^2 + \varepsilon\sigma_{t-1}^2 + \sum_{i=1}^{5} \lambda_i D_{it} + \varepsilon_t$$

In order to avoid, dummy variable trap, intercept is not considered in the regression. The coefficients $\theta_i$represent the day-of-the-week effects and λ_i represent the volatility effects in the day-of-the-week. In order to examine the presence of seasonal anomalies, the level of significance is considered to be 5 percent.

RESULTS & DISCUSSION

Among the cyptocurrencies, Bitcoin is considered as the oldest and the most popular. The data ofBitcoins is available from 17 July 2010. As observed in Figure 1, though no significant changes can be observed in the prices of bitcoin in the initial years, as the technology used was relatively new. With the popularity of Block-chain Technology and after introducing several safety measures, Bitcoins grew in popularity. During the period before 2014, the usage of VCs especially BTC as a medium for payment was significantly lower but was gaining popularity. The trend in the performance of the BTC closing price and volumes from the period 2010 to 2013 is shown in Figure 1 and Figure 2 below. The trend re-emphasizes the growing popularity of the BTC, thereby raising concerns with respect to its regulation by RBI though it is a Decentralized Digital currency.

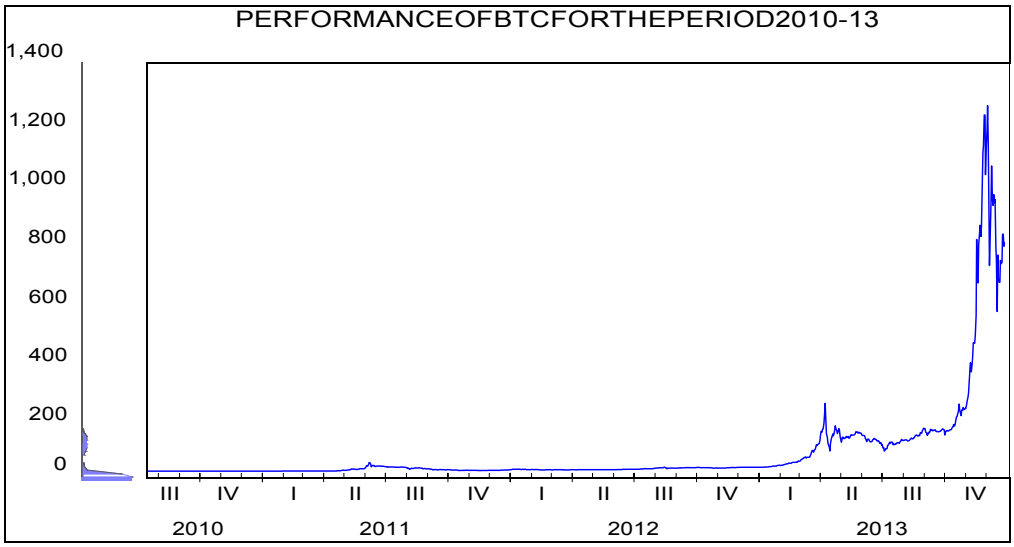

Figure 1: Performance of BTC for the period 2010-13

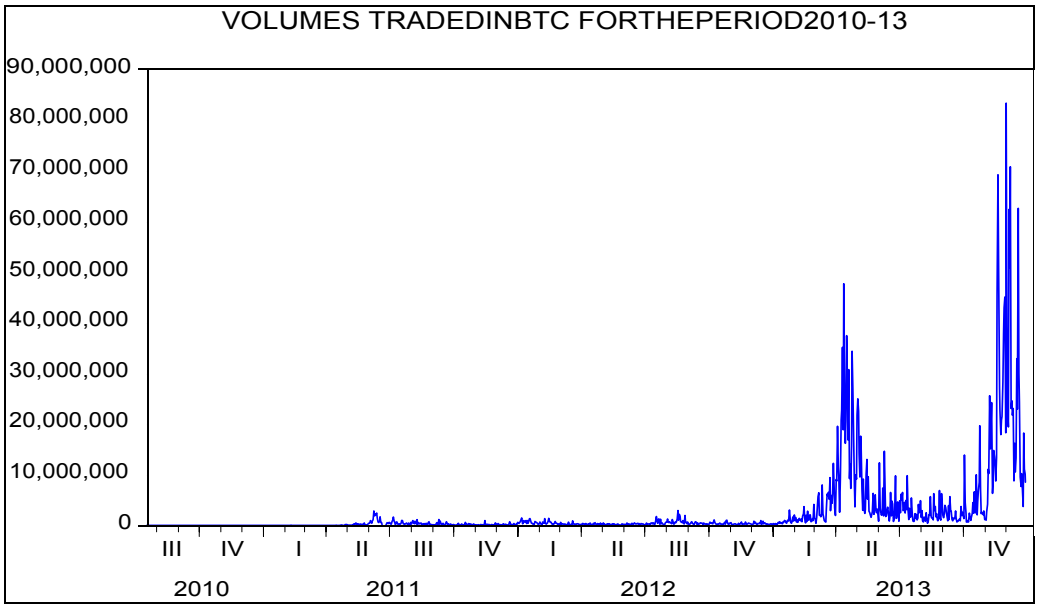

Figure2: Performance of BTC in terms of volumes traded for the period 2010-13

Source: Author

As observed, the prices and volumes increased significantly during the period 2013 when compared to the previous years. The frequency distribution of the volumes traded in BTC during the period 2010-13 is shown in Table 1.The volumes of BTC which were previous traded in thousands (uptil 22nd April, 2013) suddenly were observed to be traded in lakhs, millions and billions. After April 22nd 2013, the volumes followed a trajectory which was unheard and unseen in conventional investment avenues. As observed, majority of the trade volumes were now in millions uptil November, 2013. But in December 2013, BTC volumes were in billions which drew attention of every risk savvy investors and companies across the world. The BTC closing prices as observed in Table-2, which were trading in the range between 0 to 500, broke the resistance levels several times to reach the highest price of 1237.55 on 4th December, 2013.

Table 1 : Tabulation of BTC volumes for the year 2013.

Tabulation of BTC VOLUMES Sample: 1/01/2013 12/31/2013Included observations: 365 Number of categories: 5				
			Cumulative	Cumulative
Value	Count	Percent	Count	Percent
[0, 20000000)	323	88.49	323	88.49
[20000000, 40000000)	31	8.49	354	96.99
[40000000, 60000000)	6	1.64	360	98.63
[60000000, 80000000)	4	1.10	364	99.73
[80000000, 100000000)	1	0.27	365	100.00
Total	365	100.00	365	100.00

Source: Author

Table2: Tabulation of BTC closing prices for the year 2013.

Tabulation of BTC Sample: 4/23/2013 12/31/2013 Included observations: 253 Number of categories: 3				
			Cumulative	Cumulative
Value	Count	Percent	Count	Percent
[0, 500)	208	82.21	208	82.21
[500, 1000)	35	13.83	243	96.05
[1000, 1500)	10	3.95	253	100.00
Total	253	100.00	253	100.00

Source: Author

As observed from Figure 3 and Figure 4, the popularity of the bitcoins as a medium of investment (alternate to investment in traditional avenues) gained more significance from year 2013 and though the returns remained flat, the volumes significantly increased from the last quarter of 2015. The maximum return of more than 300 percent was observed in bitcoins during the latter half of 2016.

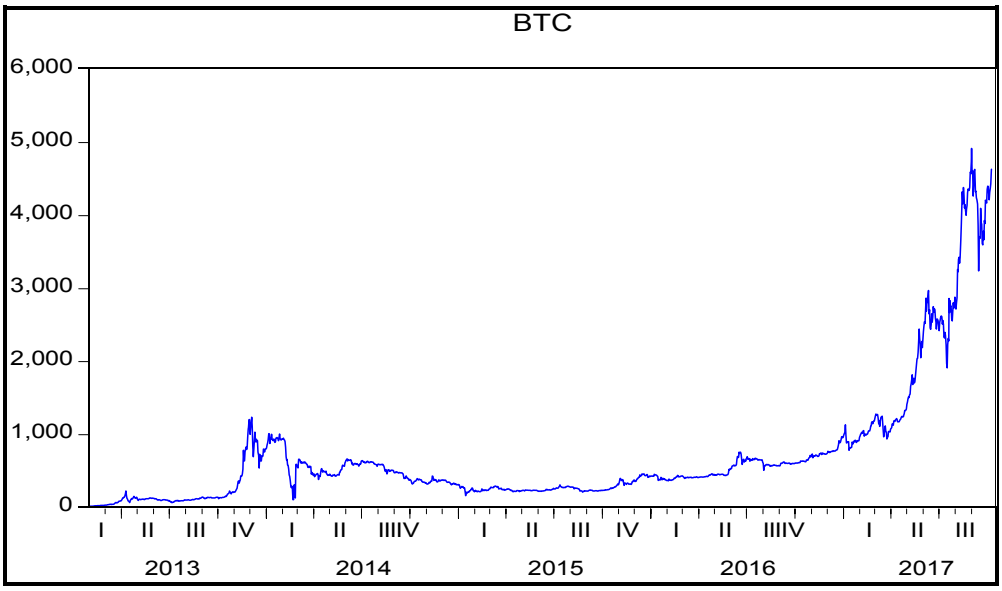

Figure 3: Trend in Bitcoin prices during the period 2013 to 2019

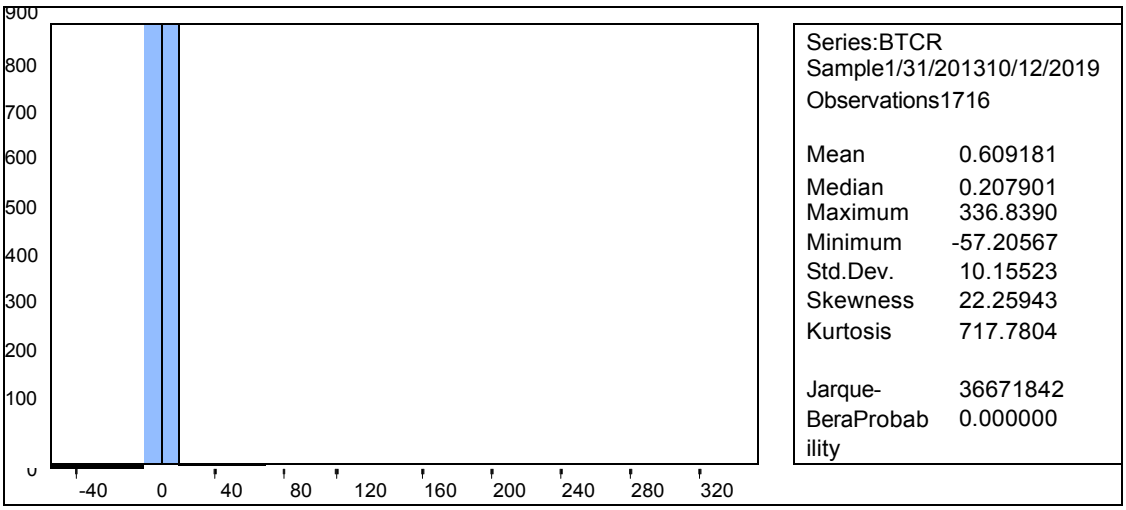

Figure 4: Summary of Bitcoin returns during the period 2013-2019

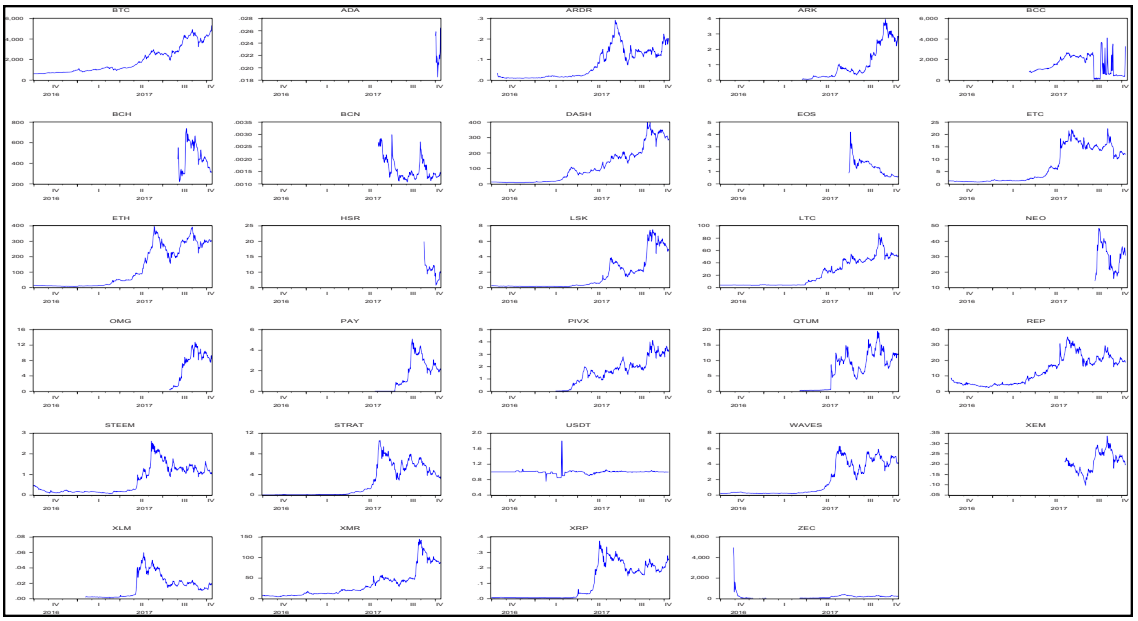

Figure5: Performance of all 29 crypto currencies from January 1st, 2016 to December 1st, 2019

In order to examine presence of seasonality in crypto-currencies, first and foremost we had to examine if the series was stationary or not. As observed in Figure 1 and Figure 2, taking return form of the series is found to be appropriate, as the series observed is found to be stationary in nature. There is clearly evidence of serial correlation in amplitude of returns but no visual evidence of serial correlation in returns. To confirm, as observed in Table-3, we examined the sample autocorrelation function (ACF) and partial autocorrelation function (PACF). The Q- statistic and its p-values under the null hypothesis of white noise for value of *m* ranging from 1 through 20 are consistently not zero at 1 percent level of significance indicating the rejection of null hypothesis of white noise. The ACF and PACF along with Bartlett bands display no patternsand are mostly inside the Bartlett bands.

Table 3: Correlogram function of Bitcoin return

Sample: 7/17/2010 10/12/2019						
Included observations: 2643						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
| |	| |	1	0.004	0.004	0.0388	0.844
*| |	*| |	2	-0.143	-0.143	54.426	0.000
| |	| |	3	0.010	0.012	54.698	0.000
|* |	|* |	4	0.210	0.193	171.59	0.000
| |	| |	5	0.063	0.068	181.99	0.000
| |	| |	6	-0.059	-0.007	191.16	0.000
| |	| |	7	-0.043	-0.035	196.10	0.000
| |	| |	8	0.013	-0.040	196.57	0.000
| |	| |	9	-0.007	-0.044	196.70	0.000
| |	| |	10	-0.008	-0.001	196.86	0.000
| |	| |	11	0.009	0.026	197.08	0.000
| |	| |	12	-0.006	0.005	197.17	0.000
| |	| |	13	-0.008	0.005	197.35	0.000
| |	| |	14	0.011	0.012	197.69	0.000
| |	| |	15	-0.002	-0.013	197.70	0.000
| |	| |	16	-0.010	-0.012	197.96	0.000
| |	| |	17	0.018	0.019	198.86	0.000
| |	| |	18	-0.012	-0.018	199.22	0.000
| |	| |	19	-0.018	-0.013	200.11	0.000
| |	| |	20	-0.002	-0.000	200.12	0.000

As observed in Table 4, as a formal test of stationarity, the Augmented Dickey-Fuller(ADF) test was conducted. The test rejects the null hypothesis of non-stationarity at 1 percent level of significance and also shows consistency with different lag structures with the presence of intercept or intercept and trend. Similarly, in case of other six cryptocurrencies, return form ofseries was observed to be stationary in nature.

Table 4: ADF test result on return series of Bitcoin prices

Null Hypothesis: BTCR has a unit root			
Exogenous: Constant			
Lag Length: 4 (Automatic - based on SIC, maxlag=27)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-19.14057	0.0000
Test critical values:	1% level	-3.432636	
	5% level	-2.862436	
	10% level	-2.567292	
*MacKinnon (1996) one-sided p-values.			

As observed in Table 5, in order to examine Day-of-the-week effect in Bitcoin returns, Day-of- the-week dummy variables were considered. The presence of day was indicated by value of unitywith corresponding days to be zero. Day-of-the-week effect would be confirmed when thecoefficient of atleast one dummy variable is statistically significant at 5 percent level of significance. The result of the regression results with dummy variables is shown in Table 5. It should be noticed that, Durbin-Watson statistic which has greater ability to detect serial correlation is 2 indicating no serial correlation in the residuals. Tuesday and Wednesday coefficients are found to be statistically significant at 5 percent level of significance. As observedin Table 6, according to Breusch-Godfrey Serial Correlation LM test for the null hypothesis of presence of no serial correlation, at 5 percent level of significance it is rejected.

Table 5: OLS regression of BTCR with dummy variables

Dependent Variable: BTCR				
Method: Least Squares				
Sample (adjusted): 7/19/2010 10/12/2019				
Included observations: 2643 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D1	0.691960	0.479103	1.444283	0.1488

D2	0.943361	0.479103	1.969016	0.0491
D3	1.460943	0.479103	3.049332	0.0023
D4	0.462120	0.479103	0.964553	0.3349
D5	0.469251	0.479738	0.978141	0.3281
D6	0.659266	0.479738	1.374221	0.1695
D7	0.200412	0.479738	0.417754	0.6762
R-squared	0.001648	Mean dependent var		0.698477
Adjusted R-squared	-0.000625	S.D. dependent var		9.311914
S.E. of regression	9.314822	Akaike info criterion		7.303736
Sum squared resid	228714.9	Schwarz criterion		7.319308
Log likelihood	-9644.887	Hannan-Quinn criter.		7.309373
Durbin-Watson stat	1.991991			

Table 6: Serial Correlation LM test on BTCR with dummy variables

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	27.59734	Prob. F(2,2634)	0.0000
Obs*R-squared	54.24655	Prob. Chi-Square(2)	0.0000

The residuals of the regression output exhibited Conditional Autoregressive Heteroscedasticity for the overall periods which was confirmed by the ARCH test. Thus GARCH (1,1) method was conducted. As observed in Table-7, all the parameter estimates are highly statistically significant with "GARCH Coefficient" (β) substantially larger than "ARCH Coefficient" (α) which is commonly found in financial asset returns. After correcting for serial correlation and ARCH effects in the residuals, all the days of the week except Monday, Saturday and Sunday were found to be statistically significant at 5 percent level of significance for the overall period. Similarly, the methodology was followed for all the other 6 crypto-currencies for the entire period. The results of the analysis is shown in Table-7. We can thus, infer that, day-of-the-weekeffect is observed in the major crypto-currencies traded.

Table 7: Regression results of Bitcoin returns with dummy variables and GARCH (1,1)

Dependent Variable: BTCR				
Method: ML - ARCH (Marquardt) - Normal distribution				
Sample (adjusted): 7/19/2010 10/12/2019				
Included observations: 2643 after adjustments				
Convergence achieved after 62 iterations				
Presample variance: backcast (parameter = 0.7)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
D1	0.254837	0.134002	1.901745	0.0572
D2	0.866796	0.119820	7.234183	0.0000
D3	0.331034	0.107710	3.073383	0.0021
D4	0.210801	0.104786	2.011727	0.0442
D5	0.371765	0.146492	2.537775	0.0112
D6	-0.098807	0.145936	-0.677057	0.4984
D7	-0.036347	0.135924	-0.267406	0.7892
Variance Equation				
C	0.501604	0.038379	13.06987	0.0000
RESID(-1)^2	0.318538	0.009477	33.61137	0.0000
GARCH(-1)	0.755047	0.004406	171.3794	0.0000
R-squared	-0.001942	Mean dependent var	0.698477	
Adjusted R-squared	-0.004222	S.D. dependent var	9.311914	
S.E. of regression	9.331551	Akaike info criterion	5.812323	
Sum squared resid	229537.2	Schwarz criterion	5.834570	
Log likelihood	-7670.985	Hannan-Quinn criter.	5.820377	
Durbin-Watson stat	1.989434			

Source: Author

Table 8: Regression results of all 7 crypto-currencies with dummy variables and Garch (1,1) model.

ID	NAME OF CRYPTO CURRENCY	TIME PERIOD		
		FROM	TO	DAY-OF-THE-WEEK EFFECT OBSERVED
BTC	Bitcoin	17 July 2010	12 October 2017	Tuesday effect Wednesday effect Thursday effect Friday effect
ETH	Ethereum	07 August 2015	12 October 2017	Monday effect Sunday effect
XRP	Ripple	21 January 2015	12 October 2017	Monday effect Wednesday effect Sunday effect
BCH	Bitcoin Cash	01 August 2017	12 October 2017	Monday effect
LTC	Litecoin	24 October 2013	12 October 2017	Tuesday effect Wednesday effect Thursday effect
DASH	Dash	08 February 2014	12 October 2017	Tuesday effect
XMR	Monero	29 January 2015	12 October 2017	Thursday effect

Source: Author

The Cointegration studies point to long-run relationship between these currencies and with its acceptance in the recent years, the cointegration studies has been seen to be significant across several traditional financial mediums too.

Thus, the following spiraling effect of creation, trading and usage of VCs especially BTC withoutthe regulatory approvals, restrictions or authorization raised several concerns among the various countries in the world including India to create awareness on the risks posed by the users of the VCs. Some of risks which were highlighted by RBI during the press release of 2013 and in the recent periods were as follows:

- The digital form of currencies called electronic wallets may be subjected to losses arising out of hacking, loss of password, compromise of access credentials, malware attack etc.
- The digital payments without authorized central agency would not have established framework for recourse to customer problems / disputes / charge backs etc.
- There is no underlying or backing of any asset for VCs.
- The trading of the currencies usually happens on exchange platforms set up in various jurisdictions whose legal status is unknown due to which one might be exposed to legal as well as financial risks.
- There might be misuses of these currencies for various illicit and illegal activities in several jurisdictions (Anti-money laundering and the financing of terrorism activities).

CONCLUSION

Considering the performance of the cryptocurrencies and the subsequent acceptance of thecurrencies as a means of value exchange among several different companies across the world hasbeen seen to be a way of acceptance for a more secure medium to business in the coming future. Though from a perspective of investments, the data on currencies looks challenging for individual investors, but it has been seen to more prominently accepted as a medium of do business.

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PARADIGM SHIFT - COVID 19 EFFECT :

A REFLECTION ON

THE INDIAN ECONOMIC SYSTEM

Paradigm Shift - COVID 19 effect : A Reflection on the Indian Economic System

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Abstract : *Societal and financial conditions of people immensely twisted down because of Covid-19. In this regard it is an attempt to scrutinize the impact of COVID on Indian economic system with respect to relevant industries. Global context internal revenue generation constrained. Investors specifically foreign funding declined drastically, round about 550 million US dollars. At the same time decline in petroleum product rates reduces volume of the balance of payment. Indian currency value continuously declining against foreign currency at the same time Indian industries are facing a big trouble of investment and liquidity crisis. The disaster observed terrible bunch of migration. Even it is observed complete shutdown of commercial activities and movement of society at large. This resulted in declined employment opportunity, increased scope for under employment, scarcity of food, improper social security measures by concerned authoritative bodies. Government need to obtain appropriate measures to overcome from the COVID 19 and simultaneously towards the growth of economy from gross route level. Prevailing situation also brought immense positive potential it is up to government how these positive aspects are being utilized properly, some our specific neighbouring countries lost their credibility and they are no longer trusted by foreign countries in terms investment and health point of view. The government of India announced a mega Rs 20 lakh crore stimulus package and RBI launches innovation hub to boost financial inclusion. Large corporate and industrial houses may be allowed as promoters of banks. Also by optimum implementation of dream project like skill development, empowering young entrepreneur by encouraging start ups, women empowerment, make or produce in India.*

Keywords: Finance, Growth rate, Women empowerment, Make in India, Skill India, RBI, Covid 19.

INTRODUCTION:

After huge set back to world economy during the period 2007-2008, because of sudden stock market crash due to the subprime lending of major financial institution such Lehman Brothers and Merrill Lynch etc, in USA entire world economy deteriorated, even India is not an exception to this. Now this is a second worst crisis in terms economy and societal life. The epidemic COVID-19 badly reflected on India in a massive way through complete shutdown economically and society at large. Surprisingly it is felt that fight against this pandemic virus is becoming very difficult task. Here is a worth noting issue which is estimated during this period 2019 WHO, IMF, WORLD BNAK. Assumes the blow of such a deadly disease costs a loss of two-five percent of international GDP growth rate. Indian economy also supposed to face consequences of this as per news reports economists analyzed staggering loss of US $120 billion or 4 percent of the GDP. In circumstances time during this period of epidemic affected the manufacturing and the services sectors. The financial pressure has started rising rapidly. Measures like isolation and distance maintaining proven in to a loss and decrees in demand, with this it led to a fall down in monetary turnover. In order to avoid the increasing number of COVID19 cases. Government authoritative institutions and concerned ministries of relevant department are taking corrective measures. As per expert economists conclusion it will be a v-shaped recovery curves which decisive for Indian financial system. The Government of India announced a mega Rs 20 lakh crore stimulus package. It includes previously announced measures to save the lockdown battered economy, and focuses on tax breaks for small businesses as well as incentives for domestic manufacturing. The combined package works out to roughly 10 per cent of the GDP, considering it among the most substantial in the world after the financial packages announced by the US, which is 13 per cent of its GDP and by Japan which is over 21 per cent of its GDP. The Rs 20 lakh crore packages' includes Rs 1.7 lakh crore package of free food grains to poor and cash to poor women and elderly, announced in March, as well as the Reserve Bank's liquidity measures and interest rate cuts. While the March stimulus was 0.8 per cent of GDP, RBI's

cut in interest rates and liquidity boosting measures totalled to 3.2 percent of GDP. *https://economictimes.indiatimes.com/news/economy/finance.Sources*

RBI also came in action and announced Innovation Hub to boost financial inclusion. Large corporate and industrial houses allowed as promoters of banks. Similarly, well-run large non-banking finance companies (NBFCs), with an asset size of Rs 50,000 crore even more than that, including those which are owned by a corporate house, may be considered for conversion into Banks, subject to completion of 10 years of operations. Some of the large industrial houses like Aditya Birla group, Bajaj group, Mahindra and Mahindra, and Tata Sons already have large NBFCs with more than a decade of operations. In fact, these NBFCs are bigger than many mid-sized banks. *Sources Business Today in December 2020.*

From *Sources* of KPMG India estimated GDP increase in the series of 5.3 to 5.7 percent. In during second circumstances where India reins the spread of COVID 19 but there is a significant global recession, the growth may be between 4 and 4.5 percent. GDP growth lesser up to 3 percent if the virus spreads more in India and lockdown observe an extension. Motilal oswal research study suggests that even one day of absolute lockdown could cut off 14 to 19 base points from annual growth.

STATEMENT OF PROBLEM

Epidemic of COVID19 impact on India economy and across the world monitory system had huge pressure. Its consequences transferred from one nation to another since each and every nation are integrated with demand and supply, even at the same time on share market i.e. capital market, Indian economy also supposed to face consequences of pandemic of COVID19 economists analyzed staggering loss of US $120 billion or 4 percent of the GDP. At the same time during this period it is immensely affected the manufacturing the services sectors the financial pressure has started rising rapidly. A huge sum of money being spent on research and development, in finding best possible medicine

and get cure from this infection. In this context it is the need of prevailing situation to evaluate immense damage caused by COVID19 on select sector with reference to Indian industrial sectors such as Agriculture, Manufacturing, Constriction, Services, Financial, Real estate and Professional Services at the same its impact on society in the form of standard of living people and loss of jobs.

NATURE AND SCOPE OF STUDY

The study is descriptive and analytical in nature. In this context substantial attempt has been made to evaluate and describe circumstances during COVID 19 on Indian economic system as it has been observed that GDP of India gone down all time lowest negative 25%. With this an effort has been made to asses prevailing economic conditions specifically during COVID 19 and damage caused by it on society with reference to the select sector of business and industries. And study is confined for a period of past three years subsequently,

OBJECTIVES OF STUDY:

- To analyze problems and issues, related to Indian economy during covid-19.
- To identify radically affected, economic select sectors during covid-19 in Indian context.
- To evaluate measures taken by the government to up lifts economy from crises during covid-19.
- To ascertain social security measures taken by the government for well being citizens and migration issue during covid-19.
- To offer certain suggestions based on findings of the study.

HYPOTHESIS OF THE STUDY:

1. There is no significant relationship between performance of select Indian industry and prevailing pandemic of COVID 19.
2. There is no significant relationship between export and import of goods services from the point economic impact during COVID 19.

METHEDOLOGY:

The research is carried on the basis of descriptive and analytical way. By going through the path of objectives set for the study, both primary and secondary data also has been collected from news papers, journal, magazines, internet, and through personal interaction with economist's subject matters experts and intellectual personnel's. By using appropriate method and tools, in this context an attempt has been made to evaluate prevailing circumstances during covid19 specifically upon Indian economy by taking in to consideration select sector of business and industries.

RESULTS AND DISCUSSION

TABLE 1: CALCULATED AVERAGES OF ESSENTIAL SEGMENTS PERTAINING TO INDIA GVA AND GDP

PARTICULAR	**2017-18** 1st R e	**2018-19** P e	**2019-20** 1st A e	**Average Calculated**
GVA at basic prices	**6.9**	**6.6**	**4.9**	**6.13**
Agriculture and allied sectors	5.0	2.9	2.8	3.57
Industry	5.9	6.9	2.5	5.10
Mining and quarrying	5.1	1.3	1.5	2.63
Manufacturing	5.9	6.9	2.0	4.93
Electricity, Gas, water, supply and other utilities	8.6	7.0	5.4	7.00
Construction	5.6	8.7	3.2	5.83
Services	8.1	7.5	6.9	7.50

Trade, Hotel, Transportation, Communication.	7.8	6.9	5.9	6.87
Financial, real estate, & professional services	6.2	7.4	6.4	6.67
Public administration , defense and services	11.9	8.6	9.1	9.87
GDP at market prices.	7.2	6.8	5.0	6.33

SOURCE: *NATIONAL STATISTICS OFFICE, 2020.*

RE, Revised estimate P.E- Provisional estimate, AE- Earning estimate.

Data mentioned above table-1. Reveals during 2019-20 decrease in GDP at 5.0, compared to the growth of 6.8 percent in 2018-2019, during 2017-18 GDP percent was 7.2 percent. With this it is clear that GDP of India decreasing continuously. Even on an averages of all sectors GVA percent of 6.13, Agriculture and allied segment it is percent 3.57, Industry average percent is 5.10, Mining and quarrying percent stood at 2.63, Manufacturing calculated at a percent of 4.93, Electricity, Gas, water, supply and other utilities at 7 percent, Construction is around 5.83, Services at rate of 7.50, Trade, Hotel, Transportation, Communication & broad casting 6.87 percent, Financial, real estate, & professional services observed at 6.67, Public administration, defence and services at 9.87 percent, and over all GDP at market found at a rate of 6.33 percent. By looking at performance of various sector there is declined trend in almost in majority of Indian industries like, Agriculture and allied sectors, Industry, Mining, quarrying, Electricity, Gas, water, supply and other utilities, Construction, Trade, Hotel, Transportation, Communication. By looking at aggregate percentages of these sectors on an average calculation also there is inconsistency from one sector to other. Since Indian economy is in developing stage most of the time it is having negative balance of payment it is heavily dependent on import compared to export. Even central and state government annual budget in past years presented with deficit amount only. In addition to this pandemic COVID 19 dragged Indian economy in a disaster situation. It will be very difficult to overcome from this deep corridor an evidence of this is negative GDP up to 25 percent.

TABLE 2: PERFORMANCE INDICATOR OF SELECT SECTOR

Sl. No	PARTICULAR	2017-18 1st R e	2018-19 P e	2019-20 1st A e
1	Agriculture and allied sectors	5.0	2.9	2.8
2	Manufacturing	5.9	6.9	2.0
3	Construction	5.6	8.7	3.2
4	Services	8.1	7.5	6.9
5	Financial, real estate, & professional services	6.2	7.4	6.4

Source: *National statistics office, 2020.*
RE, Revised estimate P.E- Provisional estimate, AE- Earning estimate.

TABLE 3: DATA SUMMARY

Groups	N	Mean	Standard Deviation	Standard Error
Group 1	3	3.5667	1.2423	0.7172
Group 2	3	4.9333	2.5891	1.4948
Group 3	3	5.8333	2.7574	1.592
Group 4	3	7.5	0.6	0.3464
Group 5	3	6.6667	0.6429	0.3712

Predictor: *RE, Revised estimate P.E- Provisional estimate, AE- Earning estimate. Indicator*

F - Value = 2.10497
P - Value = 0.15494

TABLE 4: ANOVA TEST

Source	Degree of freedom D.F	Sum of squares S.S	Mean Squares M.S	F-Value	P-Value
Between Groups	4	27.9932	6.9983	2.105	0.1549 at 5% Level of significance
With in Groups	10	33.2466	3.3247		
Total	**14**	**61.2399**			

Predictor: *RE, Revised estimate P.E- Provisional estimate, AE- Earning estimate. Indicator*

- From the above, Table-1 exhibits performance Agriculture sector on average 3.57 percentage, Manufacturing sector on average 4.93 percentage, at the same time Construction sector indicating 5.83 percentage, Services segment 7.50 percentage,, Financial, Real estate and Professional Services performing at the rate of 6.67 percentage.
- It is significant point note to overall performance of select sectors from the point of view of our study indicating. Table - 4 ANOVA test F - Value 2.105 at 5 percent level of significance, at the same time P-value 0.1549 percent, since calculated value high compared to P table value hence, H0 null hypothesis rejected. And alternative hypothesis is accepted H1.

TABLE 5: CONSUMPTION, INVESTMENT AND DEMAND IN INDIA

PARTICULAR	**2017-18** 1st RE	**2018-19** PE	**2019-20** 1st AE	**Average calculated**
Total consumption	**70.0**	**70.6**	**72.1**	**70.9**
Government consumption	11.0	11.2	11.9	11.37
Private consumption	59.0	59.4	60.2	59.53
Gross fixed capital formation	28.6	29.3	28.1	28.67
Net export	-3.2	-3.9	-2.8	-3.3
Export goods and services	18.8	19.7	18.4	18.97
Import goods and services	22.0	23.6	21.2	22.26

Source: *National statistics office, 2020. Consumption and investment demand.*

RE, Revised estimate, PE- Provisional estimate, AE- Earning estimate.

TABLE 6: SHOWING COMPARISON OF EXPORT WITH IMPORT

Serial number	**Year**	**Export of goods and services**	**Import of goods and services**
1	2017-18 1st RE	18.8	22.0

2	2018-19 PE	19.7	23.6
3	2019-20 1st AE	18.4	21.2
Average	**3 years**	**18.97**	**22.3**

Source: *National statistics office, 2020.export &import.*

RE, Revised estimate, PE- Provisional estimate, AE- Earning estimate.

TABLE 7: DATA SUMMARY

Groups	N	Mean	Standard Deviation	Standard Error
Group 1	3	18.9667	0.6658	0.3844
Group 2	3	22.2667	1.22	0.7055

Predictor: *RE, Revised estimate P.E- Provisional estimate, AE- Earning estimate. Indicator*

F - Value = 16.87
P - Value = 0.0147

TABLE 8: ANOVA TEST

Source	Degree of freedom D.F	Sum of squares S.S	Mean Squares M.S	F-Value	P-Value
Between Groups	1	16.335	16.335	16.87	0.0148 at 5% Level of significance
With in Groups	4	3.8731	0.9683		
Total	**5**	**20.2081**			

- From the above, Table-6: It is indicating on average export of India during the study period it is 18.97 percentage, at the same time on average import of the India during the study period it is 22.3 percent. From the very outset it is clear that import is comparatively high 3.4 percentages. With this we came to know that India is depending import goods and services rather than export. This is the reason why most of time our nation is having imbalance of payment.
- It is significant point to note that overall performance of select sectors of India, from the point of view of our study indicating. Table - 8 ANOVA TEST, F-Value is 16.87 at 5 percent level of significance, at the same time P table value is 0.0148, since calculated value high compared to table value hence H0 null hypothesis has been rejected. And alternative hypothesis is accepted H1.

MIGRATION OF LABOURERS DURING COVID 19 ISSUES:

Migration of labour of workers is a reality in rural India. Key migration from rural India belongs from UP and Bihar, Punjab, Haryana, Maharashtra and Gujarat new places from West Bengal and North East to Karnataka and Andhra Pradesh, from MP to Gujarat and Maharashtra and from Tamil Nadu to Kerala are also being created. These migrant workers are working in the construction sites round about 40 million, household workers about 20, in textile sector 11 million. At the time of complete shutdown, 92.5 percent of work force lost 1-4 weeks of job. It is found that 80 percent of migrant work force having threat of food prior to lockdown and they will not have work. It is also observed that 55 percent of migrant workers having a wage 200-400, remaining 39 percent of workers earn 400-600, in fact it is far lesser earning. Workers unfair situation, The Supreme Court sought after status report from the Centre on the action taken to prevent the mass departure of labourers to their rural areas.

ECONOMIC DISPARITY IN INDIA:

Unequal distribution of wealth results in uneven economical development. It is found that in 2017-18, the richest 1 percent of the Indian big family owned business

class and politicians hold 73 percent of the wealth earned by the nation. Wealth of this section increased to amount of 20913 billion, which is comparatively same to the entire budget of central government. 670 million Indians who comprise the power population saw 1 per cent higher in 2017-18. The benefits of growth shared family owned business class in corporate sector and some politicians in the society. An economic crises result from natural calametics or pandemics like COVID-19 will bring uneven development from a nation point view. Loss of jobs forced a large segment of the society to fighting against poverty and hunger, until and unless a relief measures carried by the government in the interest of the deprived section people and toward backward regions of nation these things negatively impacting on national development.

GOVERNMENT RELIEF MEASURES TO COMBAT WITH COVID 19:

Epidemic COVID 19 needs corresponding financial measures. It includes measures such as

- Paying the healthcare bill raised by the pandemic.
- Providing for masks, gloves, testing kits.
- Personal protection equipment,
- Ventilators, ICU beds, quarantine wards, medicines.
- The government of India announced a mega Rs 20 lakh crore stimulus package. It includes previously announced measures to save the lockdown-battered economy.
- Focuses on tax breaks for small businesses as well as incentives for domestic manufacturing. The combined package works out to roughly 10 per cent of the GDP.
- RBI also came in action and announced Innovation Hub to boost financial inclusion. Large corporate and industrial houses allowed as promoters of banks.
- Properly managed large NBFCs, with an asset size of Rs 50,000 crore even more than that, including those which are owned by a corporate house, may be considered for conversion into Banks, subject to completion of 10 years of operations.

Public expenditure in the interest of society on healthcare in India is 1.1 percent of GDP. India needs to reassess on its development strategies. It must give emphasis on Health and Education as a significant order for equitable development.

FINDINGS OF THE STUDY

- Based on our study it is found that during period 2019-20 decrease in GDP at 5.0, compared to the growth of 6.8 percent in 2018-2019, during 2017-18 GDP percent was 7.2 percent. With this it is clear that GDP of India decreasing continuously.
- GDP found at rate of 6.33 percent. Performance of various sectors there is declined trend in almost in majority of Indian industries like, Agriculture and allied sectors, Construction, Hotel, Transportation and Communication.
- It is observed performance Agriculture sector average 3.57 percent, Manufacturing average 4.93 percent, and Construction sector indicating 5.83 percent Services segment 7.50 percent, Financial, Real estate at the rate of 6.67 percent. Showing inconsistency from on to another sector.
- According to ANOVA test Table-4 F-value is 2.105 compared to P-value 0.1549 percent, since calculated value high compared to 'P' table value.
- It is noticed average Export of India during the study period it is 18.97 percent. Import of the India during the study period it is 22.3 percent. From the very outset it is clear that import is comparatively high 3.4 percentages.
- It is found from Table-8 ANOVA Test, F-Value is 16.87 at 5 percent, at the same time P table value is 0.0148, since calculated value high compared to table value hence, H0 null hypothesis has been rejected.
- We found migration of labours or workers is a reality in India these migrant workers are working in the construction sites round about 40 million, household workers about 20 million, in textile sector 11 million.

- It is found that in 2017-18, the richest 1 percent of the big family owned business class and politicians hold 73 percent of the wealth earned by the nation which is comparatively same to the entire budget of central government.
- Government need to obtain appropriate measures to overcome from the COVID 19 and simultaneously towards the growth of economy from gross route level itself.

SUGGESTIONS

- An important lesson that the COVID-19 epidemic has taught the policymakers in India is to provide greater momentum to sectors which create better allocation of resources and reduce income inequalities.
- Government need to make sure that performance of various industries must increase like, Agricultural, Manufacturing, Construction, Hotel industry, Transportation and Communication. With this we can ensure positive impacting on GDP.
- It is a need of the time to provide a social security card with a unique identification number to every citizen of the nation along with a 100 percent financial inclusion.
- Proper measures need be to take in order to avoid migration of working class from urban to native rural places during distress arising out of nature calamity or epidemic like COVID 19
- Government of India must encourage higher export with a vision of make in India and skill development programmes rather than Import with this balance of payment will become surplus rather than deficit.
- Government must focus on encouraging young talented entrepreneurs by giving opportunities by promoting start-ups.

CONCLUSION

Every crisis brings positive opportunity also in this context it is the time to re-evaluate for the development of a human being. COVID-19 Epidemic has a clear

message for the Indian economists to apply sustainable development which is based on self dependency and inclusive growth a risk of recession due to COVID-19 extremely high. Indian economy is not an exception to this. Indian economy also supposed to face consequences of pandemic of COVID 19 economist's analyzed staggering loss of US $120 billion or 4 percent of the GDP. As it has been witnessed inconsistency and total shut down of all economic activities like production, consumption, trade activities to control spread in COVID-19 cases. The nature of shutdown is unique in case of COVID-19 in context of demand and supply. Recovery of economy in Indian context depends on timing also to extent of government support from the point of corporate debt, how the companies and markets cope with lower demand. Government assistance to those most in need is a critical measure to save many lives.

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A COMPARATIVE STUDY ON THE IMPACT OF COVID-19 ON MSME's OF INDIA AND BANGLADESH

A Comparative Study on the Impact of Covid-19 on MSMEs of India and Bangladesh

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Abstract : *Micro, Small and Medium enterprises, which have created more than 90 per cent of the jobs in India, employing over 114 million people and contributing 30 per cent of the GDP and has acted as a catalyst for socio-economic development of the country. Disruptions caused by the Covid-19 pandemic have impacted MSMEs earnings by 20-50%, micro and small enterprises faced the maximum heat, mainly due to liquidity crunch. MSMEs have been cornered into a vulnerable position due to inadequacy of funds, labour shortages, supply chain disturbances and low employment. This study merely focuses on the descriptive and analytical review of the impact of the nation- wide lockdown induced by the Coronavirus on the MSME sectors and the policy measures taken by the Government of India.*

With the aid of a narrative and thematic description based on the role of the relief fund and nationwide lockdown pandemic situation, we probed into the disruptive situation of the Indian MSME sector. In this study, a secondary subjective review has been donewhich focused on the status of the Fiscal Stimulus Package and the national lockdownpandemic. We have also attempted to make a comprehensive comparison between theplight of Indian and Bangladeshi MSMEs, with an aim to inquire into the key takeaways from both the countries and their relief policies by studying crucial Economic variables such as profitability and Employment of both the countries.

Keywords: MSME, lockdown, liquidity crunch, Fiscal stimulus package, India, Bangladesh

INTRODUCTION

The micro, small and medium-sized enterprises (MSME) sector play a key role in providing large jobs opportunities at a comparatively lower cost of capital than large industries. They also contribute to rural & backward industrialization, thereby reducing regional imbalances. The economic impact of the 2020 coronavirus pandemic in India has been largely disruptive. India's growth in the fourth quarter of the fiscal year 2020 went down to 3.1% according to the Ministry of Statistics. The MSME sector suffered from lack of manpower as most workers returned to their hometowns. The Covid-19 pandemic has been a seismic pressure threating the supply chains. With cities sealed all over India and no movement across state borders, the production activities and supply chains were at standstill. The multidimensional impact of corona virus on cashflow of MSMEs has led to perpetual closure of a lot of units.

The MSME sector is a key driver of the national economy in Bangladesh as well. Contributing 25 percent to the country's GDP, MSMEs play a crucial role in income generation and resource utilization. MSMEs in Bangladesh suffered from a $2.8 billion financing gap. Supply chains and global valuechains also experienced interruptions and further worsened the situation. Decreasing demand further reduced the coffers of MSMEs, as working capital began to decrease. This resulted in their inability to pay salaries and forced them to lay off workers, driving up unemployment rates. It was reported that around 21 percent of firms had temporarily shut their businesses due to the pandemic.

DESCRIPTION OF THE PROBLEM - SIGNIFICANCE OF THE STUDY

The COVID-19 pandemic has had an enormous impact on developing economies, such as India and Bangladesh. With the economic terrain transforming and several challenges facing the South Asian and Southeast Asian regions, the shared culture and heritage of the people of India and Bangladesh, coupled with the rapport between the countries' highestleadership, could be beneficial in the post-pandemic scenario.

To derive crucial takeaways from the strategical implementation of relief policies of both the countries, a comprehensive analysis of the MSME sector of the both the countries was paramount. Hence, this study addresses the problem of comparative analysis of the impact of the Corona-virus pandemic on India and Bangladesh to study the respective relief measures employed by both the nations and the response of the MSME sector to the same.

METHODOLOGY

This study is subjective, descriptive, and analytical in nature. It uses secondary data to study the pre-pandemic and post-pandemic performance of the Micro, small and medium enterprises of India and Bangladesh along with the relief policy measures undertaken by the governments of both the countries. The data sources include:

1. Ministry of Micro, Small and Medium Enterprises, Annual Reports of 2018-20
2. World Bank, International Labour Organization report 2019-20
3. SMEs development in Bangladesh, problems, and prospects (2017)
4. Economic Times, Issues: May and June 2020
5. The Daily Star, Issue: September and October 2020

This study has collated data in a descriptive manner for pictorial study and logical interpretation.

Statistical tools employed:

- Pictorial study
- Interpretation of graphs and tables
- Descriptive analysis

RESULTS AND DISCUSSION

- **Performance of MSME Sector of India and Bangladesh: pre-Covid**

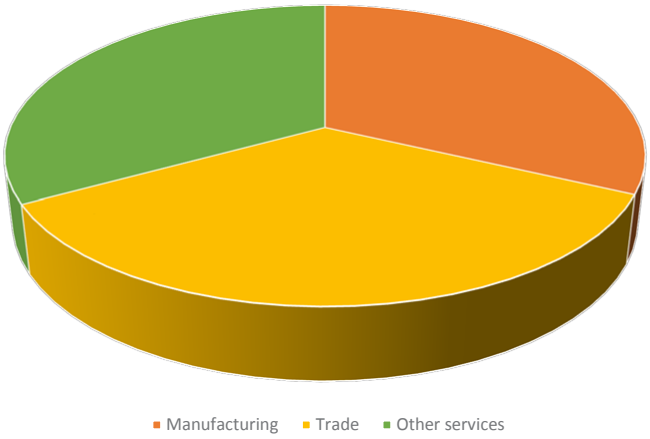
MSME SECTOR-INDIA:

Despite challenges, MSMEs have made significant contributions to exports and economic development of the country. Recently, Indian economy witnessed a six-year low growth rate of 4.5 % in the quarter of July September 2019. This slowdown comes at a time when the economy is reviving from the turmoil of two policy shocks in succession, first the demonetization of 86% of currency followed by introduction of new Goods and Services Tax reform. The structural changes in the economy caused a short to medium term liquidity crunch in the economy and worst hit were cash dependent MSMEs. The contribution of MSMEs to the Gross Domestic Product of India according to a report by the Ministry of MSME, is subdivided in the following manner:

- 33% is contributed by the Service sector
- 31% is contributed by the Manufacturing sector
- 36% is contributed by the Trading sector

As per the National Sample Survey (NSS) 's, 73rd round conducted during the period 2015-16, MSME sector has been creating 11.10 crore jobs (360.41 lakh in Manufacturing, 0.07 lakh in Non-captive Electricity Generation and Transmission, 387.18 lakh in Trade and 362.22 lakh in Other Services) in the rural and the urban areas across the country.

Fig 1: Employment in MSME Sector

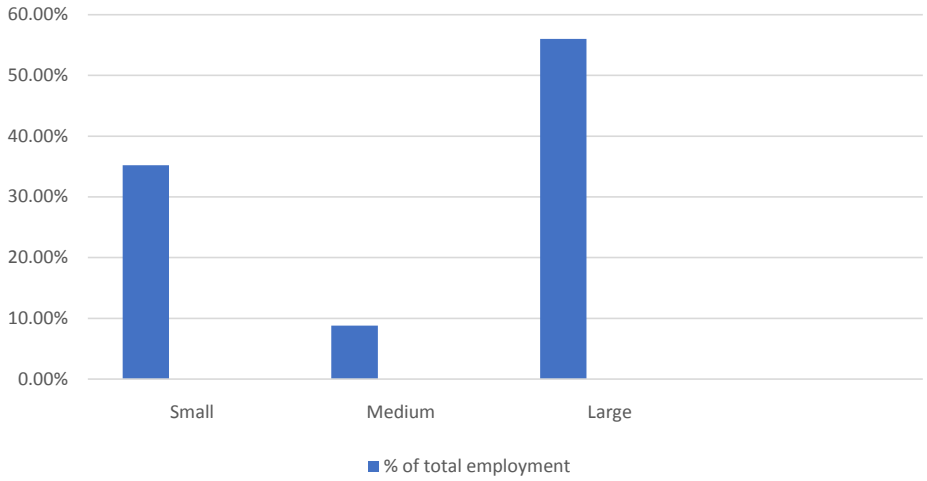


MSME SECTOR-BANGLADESH:

Contribution of the MSMEs to the GDP is about 25 per cent in Bangladesh. They account for 40 per cent of the manufacturing outputs. Bangladeshi MSMEs are generating a significant number of employments. There are about 558,870 people involved with micro, 6,600,685 with small and 706,112 people with medium enterprises in Bangladesh. That means about 7.86 million jobs aredirectly created by the MSMEs. Their effects on employment generation elsewhere might be higher.

Nearly 11.3 million employments are generated by non-farm establishments in Bangladesh, of which 73 per cent are created by micro enterprises. Focusing on the 10+ units, small units constitute 35.2 per cent of the employment, followed by medium and large units comprising 8.8 and 56.0 per cent, respectively. In other words, SMEs employ 1.3 million people, constituting 44 per cent of the total 10+ units' employment.

Fig 2: Contribution of different sectors to total employment



- **Government initiative to tackle the pandemic: India and Bangladesh**

INDIA:

One day after the announcement of the Rs 20-lakh crore economic package by Prime Minister Narendra Modi, Finance Minister Nirmala Sitharaman unfolded an outline of five tranche announcement made on the Aatmanirbhar Bharat Abhiyan stimulus package among which the firsttrench announced on May 13, 2020, also focused on the upliftment of the MSMEs.

Highlights of the First Tranche-Targeting the MSMEs:

TABLE 1: BREAKDOWN OF STIMULUS PACKAGE AND AMOUNT ALLOTTED FOR MSMES

(First Tranche: Rs. 5,94,550 Crore)

S. No.	Item	Rupees (in Crores)
1	Emergency W/C Facilities for Business, incl MSMEs	3,00,000
2	Subordinate Debt for Stressed MSMEs	20,000
3	Fund of Funds for MSME	50,000

Source: *The Economic Times, Issue: 13th May 2020*

The measures released by the government for MSMEs:

1. Collateral-free Automatic Loans up to INR 3 Lakh Crore
2. Subordinate Debt – INR 20,000 Crore
3. Equity Infusion – INR 50,000 Crore
4. Forbidden Global tenders
5. MSME Dues to be paid in 45 days
6. Redefining MSMEs

BANGLADESH:

The Government of Bangladesh has declared a variety of stimulus packages for various industries and beneficiaries amid this coronavirus outbreak. At least seven major stimulus packages have been announced by the Government to date and are to be distributed by the banking sector under the guidance of the circulars of the Bangladesh Bank, to boost the economy during these unprecedented difficult times.

Most businesses had already used a Tk 5,000 crorestimulus package for the payment of wages and salaries by export-oriented industries, by December 2020. Under this

policy, loans may be used by borrowers to pay their employees' wages and salaries for the months of April, May, and June. Out of the total COVID-19 relief fund, the Government of Bangladesh has allocated 27.5 percent to SMEs as working capital financing for a term of 3 years. The third package was to help the most affected Cottage, Micro, Small, and Medium Enterprises (CMSME) due to this pandemic. A stimulus package of Tk 20,000 crore was announced by the government. Loans to SMEs are primarily issued against tangible collateral (e.g., property) since there is no rigorous cash flow analysis available for the Tk20,000 crore financial package to the SME sector announced by the government at a subsidized rate. Manufacturing, services, and trade-based businesses will receive 50 percent, 30 percent, and 20 percent of annual loans, respectively, where at least 70 percent of total loans wouldbe accounted for by cottage, micro, and small industries.

Large Industries (30,000 crore)	• Refinance BDT 15,000 crore • Sonali, Rupali, Exim & IFIC have given fund to 7 companies worth of BDT 1,044.9 crore
SME (20,000 crore)	• Refinance scheme 10,000 crore • 33 banks, NBFI signed deal with BB to use refinance scheme
Agri Business (5,000 crore)	• 41 banks signed deal with BB to use the fund
Marginal Farmers (3,000 Crore)	• 24 banks linked deal with BB • 9 banks to follow suit

TABLE 2: PROGRESS OF GOVERNMENT STIMULUS PACKAGE

Source: *The Daily Star, Issue: 15th June2020*

- **Post-pandemic recovery of MSMEs: India and Bangladesh**

INDIA:

According to the times of India, the Indian manufacturing industries which were listed on the stock markets made bumper profits in the quarter ended September 2020. They registered their highest aggregate profits during the most recessionary times in Indian history. The economy which was shrinking in 2020 and companies have seen their sales decline year-on-year for five straight quarters. But listed companies have never made profits like they made in the quarter ended September 2020. In these very tough times, owners of capital have profited well. that manufacturing companies witnessed a 9.1% percent fall in wages in the June 2020 quarter. This was the toughest quarter. Sales had shrunk by 42 percent and net profits by 62 percent. Then in September 2020 quarter, while sales fell againby 9.7 per cent, profits sprang a surprise by scaling up by a handsome 17.8 percent. Yet, wages declined by one percent. Evidently, companies do not apportion resources to labour in any proportion of profits. In the September 2020 quarter, the outstanding profit output will include some fall in the corporate sector's wage rate for some time, but job growth will rely on a sustained demand revival.

BANGLADESH:

The pandemic of Covid-19 has absolutely stranded the textile industry from its growth path, impacting its profit margins. RMG exports dropped by 54.8 percent from USD 8.2bn over the same period in 2019 to USD 3.7bn from Mar 2020 to May 2020. During this time, 1,150 factories registered a USD 3.18bn order cancellation/suspension that affected about 2.28mn employees in the industry as the companies were unable to provide workers with timely salaries, thus affecting the workers greatly. Bangladesh's garment industry is the second largest exporter and the economy's highest earnings are received from this industry. However, according to data from the Export Promotion Bureau, this pandemic struck the industry hard as the profit level dropped as its export earnings fell by almost 15 percent in 2020.

After analysing the data given by world bank and Centre for Monitoring the Economy (CMIE) the unemployment rate in India was 6.98 percent which was much higher than Bangladesh which was only 4.15 percent. Profit growth in India was higher in September 2020 than in the top quartile of profit distribution growth over the past 60 quarters, which was 21.9 percent. 3 percent profit was generated by the MSME sector of Bangladesh and had a massive lossof 83 percent and breaking even at 14 percent

CONCLUSION

The analysis of the behavior of MSMEs of India and Bangladesh in wake of the Covid-19 pandemic bring us to crucial takeaways from both the countries. The reach of India's fiscal stimulus package was way more than that of Bangladesh and hence even in these tough times, Indian MSMEs recorded higher profitability leading to healthier and more sustainability economic variables. On the other hand, the recent economic performance of Bangladesh should be a wake-up call for India as well because it calls for major focus to be given on low-skill production. The need of the hour is to enable the creation of industries that provide mass employment. To do so, it is necessary for India to fire its manufacturing cylinder and only then can it outpace the growth of its peers in the neighborhood and beyond.

As the world reels under the pandemic-induced stress, it is not only imperative for economies to bounce back but also assess and seize the opportunity available to them. With companies and investors looking to shift or pursue new markets outside of China, India and Bangladesh must forge new partnerships to make themselves attractive destinations for investments and trade. Bangladesh is India's biggest trade ally in South Asia, with bilateral trade growing steadily over the last decade. The potential for improved economic ties also provides India and Bangladesh an opportunity to ascend regional and global value chains by boosting their manufacturing sectors and investment environments.

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MANAGING PERSONAL FINANCIAL INVESTMENTS DURING PANDEMIC PERIOD

Managing Personal Financial Investments during the Pandemic Period

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Abstract : *Macro-economic factors tumbled, industry averages went down drastically, companies were unable to operationalize their plans and meet their targets, family and personal financial management was the most challenging ones as many organizations deferred their salary payments to their employees, all the above factors put together made the doom for personal financial investment plans. Period from March 2020, till September 2020, was the most challenging / turbulent times for all the key stakeholders in the economy.*

Practicing and making provisions for savings and investments during the pandemic period itself is a herculean task. Managing personal financial investments during the pandemic period / economic turbulent times are one of the most challenging tasks for any individual to manage and mitigate their investments.

This objective of this paper to identify one (as an illustration) stock which may have growth potential during the upcoming period and yield better price-returns for the naïve investors. This paper examines one potential stock for investments by naïve investors. The title of the paper is "Managing Personal Financial Investments during Pandemic Period (MP-FIPP).

Keywords : Personal Finance, Turbulent Times, Price Returns, Investments
JEL Classification Codes : G-11, E-66, G-13, G-10

INTRODUCTION

Macro-economic factors tumbled, industry averages went down drastically, companies were unable to operationalize their plans and meet their targets, family and personal financial management was the most challenging ones as many organizations deferred their salary payments to their employees, all the above factors put together made the doom for personal financial investment plans. Period from March 2020, till September 2020, was the most challenging / turbulent times for all the key stakeholders in the economy.

Practicing and making provisions for savings and investments during the pandemic period itself is a herculean task. Managing personal financial investments during the pandemic period / economic turbulent times are one of the most challenging tasks for any individual to manage and mitigate their investments.

OBJECTIVES

The following were the primary objectives of the paper:

- To identify one stock (as an illustration) which may have growth potential during upcoming period and yield price-returns for the naïve investors.

HYPOTHESIS

- There is no significant relationship between stock price returns and investment decisions of the naïve investor. (H0) _Null Hypothesis
- There exists significant relationship between stock price returns and investment decisions of the naïve investors. (H1) _Alternate Hypothesis

RESEARCH METHODOLOGY

The following are the research tools and techniques used for data analysis (secondary data) and interpretation purpose:

- Log Naturals Returns
- Descriptive Statistics
- Frequency Distribution Analysis
- Scatter Plot Analysis

REVIEW OF LITERATURE

Debijan Mukherji (2007), "As for the existence of any signals or patterns among the stock exchanges, it can safely be said that the markets do react to global cues and any happening in the global scenario be it macro-economic or country specific (foreign trade channel) affect the various markets." **Sumangala Pujari & Dr. Javed Akhtar (2012)** "Domestic spill overs in returns exist from the Indian stock markets to the currency markets and cause the latter to appreciate in response to higher returns on the Indian stock markets."

RESULTS AND DISCUSSION

Stock Price and Return Analysis of M/s Panacea Biotec for the period ranging from 01st April 2019 till 31st Dec. 2020:

Date	Close Price	Log Returns
01-Apr-19	195.65	
02-Apr-19	197.50	0.94%
03-Apr-19	194.60	-1.48%
04-Apr-19	187.55	-3.69%
05-Apr-19	180.25	-3.97%
08-Apr-19	179.25	-0.56%
09-Apr-19	200.60	11.25%
10-Apr-19	195.45	-2.60%
11-Apr-19	198.40	1.50%

12-Apr-19	198.10	-0.15%
15-Apr-19	198.10	0.00%
21-Dec-20	209.35	-9.06%
22-Dec-20	223.60	6.59%
23-Dec-20	230.05	2.84%
24-Dec-20	231.15	0.48%
28-Dec-20	231.35	0.09%
29-Dec-20	230.05	-0.56%
30-Dec-20	244.90	6.26%
31-Dec-20	239.55	-2.21%

***(Source of Data:** NSE India Website, Secondary | Spreadsheet Analysis)*

DESCRIPTIVE STATISTICS – STOCK PRICE RETURNS

TABLE 1
(M/s Panacea Biotec, Stock Price Returns: 01st April 2019-31-12-2020)

STATISTICS	VALUE
Mean	0.00048
Standard Error	0.00179
Median	-0.00183
Standard Deviation	0.03687
Sample Variance	0.00136
Kurtosis	5.92610
Skewness	1.45917
Range	0.29207
Minimum	-0.10975
Maximum	0.18232

Sum	0.20243
Count	424.00
Largest (1)	0.18232
Smallest (1)	-0.10975

(Source: Based on Stock Price Data from www.nseindia.com | Spreadsheet Analysis)

REGRESSION ANALYSIS – STOCK PRICE RETURNS

TABLE 2

(M/s Panacea Biotec, Stock Price Returns: 01st April 2019-31-12-2020)

Regression Statistics	
Multiple R	0.108
R Square	0.012
Adjusted R Square	0.009
Standard Error	0.037
Observations	423

(Source: Based on Stock Price Data from www.nseindia.com | Spreadsheet Analysis)

ANOVA ANALYSIS – STOCK PRICE RETURNS

TABLE 3

(M/s Panacea Biotec, Stock Price Returns: 01st April 2019-31-12-2020)

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.00674	0.00674	4.990	0.0260
Residual	421	0.56833	0.00135		
Total	422	0.57507			

(Source: Based on Stock Price Data from www.nseindia.com | Spreadsheet Analysis)

TABLE 4

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.0177	0.00834	-2.13	0.0340	-0.03412	-0.00135	-0.034122	-0.001348
197.5	0.0001	0.00005	2.23	0.0260	0.00001	0.00021	0.000014	0.000212

Source: *Based on Stock Price Data from www.nseindia.com | Spreadsheet Analysis*

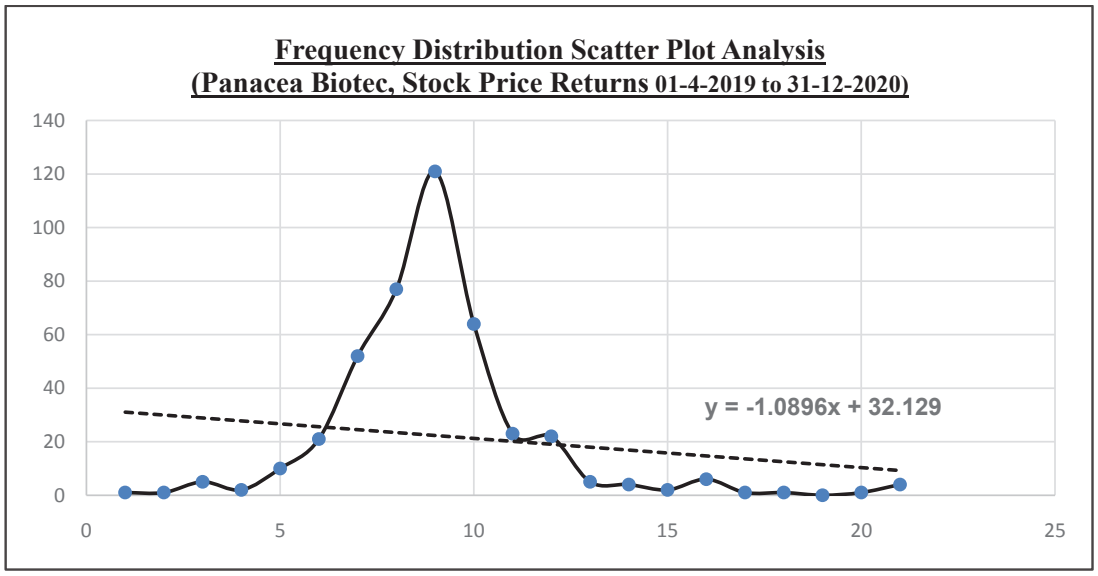
FREQUENCY DISTRIBUTION ANALYSIS

TABLE 5
(M/s Panacea Biotec, Stock Price Returns: 01st April 2019-31-12-2020)

Bin	*Frequency*	*Cumulative %*
-0.1097	1	0.24%
-0.0951	1	0.47%
-0.0805	5	1.65%
-0.0659	2	2.13%
-0.0513	10	4.49%
-0.0367	21	9.46%
-0.0221	52	21.75%
-0.0075	77	39.95%
0.0071	121	68.56%
0.0217	64	83.69%
0.0363	23	89.13%
0.0509	22	94.33%
0.0655	5	95.51%
0.0801	4	96.45%
0.0947	2	96.93%
0.1093	6	98.35%

0.1239	1	98.58%
0.1385	1	98.82%
0.1531	0	98.82%
0.1677	1	99.05%
More	4	100.00%

Figure 1



SUMMARY OF MAJOR FINDINGS & RECOMMENDATIONS

The following are the major findings and recommendations based on the above data analysis and interpretation:

- The mean returns from the stock prices from 01st April 2019 till 31st Dec. 2020, were 0.05%, which is less than the market average (under normal conditions); but during the pandemic conditions, a positive return is better than negative or nil returns.

- The standard deviation is around 36%, which is below the market average of deviations; this is also a positive perspective on the stock M/s Panacea Biotec.
- *Skewness* is the degree of *asymmetry* of a distribution, that is, how much it is *skewed* to the left or right. The value of skewness is 1.45, leaning towards right side is a positive signal for purchase of stock (M/s Panacea Biotec)
- Regression analysis also indicates, a positive number on the stock, which suiting investment decisions by naïve investors.
- Based on the above major findings, a naïve investor shall opt to invest and stay invested with M/s Panacea Biotec; if possible, the investor shall accumulate the stocks for the future.

CONCLUSION

A naïve investor is one who have less market knowledge and new to stock market investments. Identifying this type of stocks (M/s Panacea Biotec) is an investment art, coupled with science of investments.

The factors like mean returns, standard deviations, skewness and regression analysis are the common factors, which a naïve investor shall look into with the help of spreadsheet analysis and advice from their stock broker.

Naïve investors should stay connected with investments during market ups and downs and pandemic periods like these.

A long-term investment with due patience by the naïve investors will always pay a decent return alongside the market average.

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RELEVANCE OF BIOPLASTIC IN POST COVID TIMES

RELEVANCE OF BIOPLASTICS IN POST COVID TIMES

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INTRODUCTION

Bioplastic, which is the moldable plastic material is made up of chemical compounds that are derived from or synthesized by microbes such as bacteria or by genetically modified plants. Unlike traditional plastics, which are derived from petroleum, bioplastics are obtained from renewable resources, and some bioplastics are biodegradable. All current plastics are derived from petroleum through chemical extraction and synthesis. As the petroleum-based plastics are generally not biodegradable, plastic refuse is very durable, and disposing of it has become a serious problem. At present our life is dependent on plastics, that petroleum is a non- renewable resource, and that petroleum-derived plastic waste fouls the environment, a sustainable solution for the longer term may be found in bioplastics. Due to the emergence of novel corona virus- Covid 19, we human beings are in important need of personal protective equipment which are mainly made up of conventional plastics, they may sustain in the environment for a very long time without degrading at it hugely affects our ecosystem. To overcome these, Bioplastics are used which are biodegradable and can be used widely as personal protective equipment's and to minimize environmental pollution. Various methods can be used for the production of the personal protective equipment's using bioplastics and can be addressed further.

SIGNIFICANCE OF THE STUDY

The major significance of the study is that by using these biological polymers/ bioplastics, their inherent biodegradability can eliminate possible environmental pollution produced by current mask made of petroleum-derived synthetic plastics. The advances in such reusable, biodegradable, and high-quality mask can open a new avenue for exploring other biodegradable and renewable polymers, photocatalytic materials, and advanced technologies for manufacturing next generation PPE with minimum post-handling and environmental impacts. Also in case of 3D printing it can be considered as a creative and flexible approach that can allow addressing access to vital medical products against COVID-19. (Tarfaoui M, 2020)

For medical devices including personal protective Materials and equipment, 3D printing has the advantage of facilitating the fabrication of complex engineering structures that will not be easily feasible using non-AM approaches. Additive manufacturing has the advantage of easing the manufacture of complex engineering structures such as medical devices including PPE which cannot be easily produced using conventional manufacturing methods. It is a possible saviour to dwindling medical supplies in the fight against coronavirus, the present work has explored several issues about this technology that can play an important role in the medical device field. In addition, to provide healthcare workers with sufficient PPEs to increase facial protection, face shields could be 3-D printed. 3-D printers are in widespread use for professional and private purposes. Despite not being as fast as injection moulding processes, this method of production allows the at-home, on-demand manufacture of face shields by a broad spectrum of users. In case of protective footwear, the method of melt-blown nonwoven modification with a bioactive agent was used to produce materials with good mechanical and sorption properties, which could be incorporated in composite insoles designed for protective footwear (Wesemann C, 2020). It is important and necessary to employ such techniques and methods for the production of medical equipment's using bio polymers in order to overcome environmental pollution and other hurdles. (Irzmanska, 2017)

PROBLEMS RELATED TO THE STUDY

The fight against the virus has overshadowed environmental protection policies. The emergency caused by COVID-19 is highlighting, once again, the extreme fragility of our systems of management, disposal and recycling of plastic waste. In order to fight this health emergency, we have quickly needed large quantities of inexpensive, safe and easy-to-find materials. The only choice available was to use petroleum-derived polymers such as polypropylene and polyethylene as disposable materials. Only recently scientists have begun using the biodegradable polymers. Infact some of them have high performances and unique functions when compared to the conventional methods. In a commercial point of view these materials are expensive, difficult to handle and they are very poorly known and also only very few bio refineries can produce high volumes of bioplastics and even few of them recycle them. In addition, massive use of the bioplastics can harm the existing treatment plans if the management is not proper.

Only little is known in terms of the chemical safety of bioplastics, that is the identity of compounds present in the material and their toxicity as well as the human exposure to these compounds. These gaps in our knowledge are problematic because human exposure to chemicals from bioplastics and plant-based materials will increase with their increasing application. The scientific knowledge behind the fact that they are more sustainable than the conventional plastic is very low. For example, 3D printing can be used to make certain protective equipment, few technical challenges should be overcome to be sufficiently effective. For instance, 3D-printed protective equipment can provide a physical barrier to the environment, but they are unlikely to provide the same level of barrier protection, fluid resistance, air filtration protection, and infection control as that of surgical masks and N95 respirators. The use of 3D printing technique may introduce further technical concerns in terms of manufacturing controls, device performance, biocompatibility, and sterilization. The recommended COVID-19 sterilization and disinfection protocol for the cleaning and disinfection of 3D printed medical products including the facial shields indeed needs hygiene and virological verification and approval before use. 3D printed materials are frequently more porous than typical medical device materials, allowing them to harbour

microbes which means microbes can linger and grow into secondary problems if they are not carefully sterilized. It is important to not further harm people in attempting to help them. (Tarfaoui M, 2020)

METHODS

PHOTOCATALYSIS- REJUVENATION OF MASKS:

A novel design of the mask enables their antibacterial property and light-rejuvenation by photo catalysis so that the masks can be reused after facial light irradiation. TiO2 has been known as one of the most efficient photocatalytic semiconductors, as long as its advantages of nontoxicity, excellent stability, and cost-effectiveness. The high bandgap of TiO2 has limited its absorbance only in the UV range. Doping the nitrogen can reduce the bandgap of TiO2 and thus enhance its photocatalysis under visible light irradiation. As a result, N-TiO2 can have an efficient photocatalysis under light irradiation. N-TiO2 was thus employed to sterilize pathogens and rejuvenate the masks for reuse by simply irradiating the mask under the light for a certain time. (Li Q., 2020)

FABRICATION OF MASKS BY ELECTROSPINNING

In order to fabricate the mask with superior antibacterial and rejuvenation properties, commercial P25 TiO2 were doped using urea as the nitrogen source, and then the doped N-TiO2 was deposited onto the masks to enable their photocatalytic capacity. After the doping, the colour of the TiO2 was changed from white to yellow. The elementary mapping under a scanning transmission electron microscope confirmed the existence of the doped nitrogen in the N-TiO2. The prepared N-TiO2 was deposited onto the electro spun nanomesh to prepare the antibacterial and photo catalytically rejuvenated mask (Li Q., 2020). We employed electrospinning technology to fabricate the biodegradable mask by using PVA polymer as the main component and CNF as the enforcement. Electrospinning technique is used process polymers for mask manufacturing, which is to produce nanomesh with fine nanofibrous and porous structures to enable the excellence of mask in both breathability and filterability. The electrospun nanomesh appeared to

contain uniform nanofibers. The finer nanofibers can increase their contacting areas with guest particles and droplets, which can thus endow the mask with superior filterability of bacteria and viruses. The nanomesh had pores at several micrometres formed in between that could enable the excellent breathability.

3D PRINTING:

Face shield characteristics of different types were studied. A biodegradable material with a melting temperature of >190°C and a Vicat softening temperature (VST) of 160°C was used as the filament for printing the various types of face shields with a fused deposition modelling printer . Printing was performed on a powder-coated print bed at a printing temperature of 220°C, a printing bed temperature of 60°C, a printing speed of 40 mm/s, a nozzle size of 0.4 mm, 20% infill, and a layer height of 0.2 mm. Each face shield was printed individually. For completion, a 0.1-mm thick polyethylene terephthalate (PET) transparent foil was prepared and mounted to the frame. In the face shields, four holes were made in the visor at the intended locations using a DIN A4 perforator and then pressed onto the four pins for retention. For the Easy 3D Face Shield, the foil was clamped into a dedicated slot. At the posterior end of each frame, an elastic strap (0.6 mm, polyester, available by the meter) was attached. After printing, they were evaluated and statistically analysed for their properties. (Wesemann C, 2020)

MELT BLOWN TECHNOLOGY:

This technology is designed for use in selected types of personal protective equipment worn in the workplace and discussed methods of modification of melt-blown polymer materials by the addition of a bactericidal agent or superabsorbent directly to the fibre-forming area during the melt-blown production process. Melt-blown technology was chosen due to the fact that the structure of nonwovens can be effectively adjusted in terms of nonwoven porosity and area density. This technology is very flexible and it yields itself to different modifications. The nonwovens were produced from polymers commonly used in melt-blown technology. In order to obtain a multifunctional melt-blown nonwoven with

improved mechanical properties, moisture transport, and microbial growth inhibition to be used in non-permeable protective footwear, a bioactive modifier, that is, commercially available magnesium monoperoxyphthalate was applied and were processed. Due to the fact that footwear materials should exhibit high mechanical strength, a new technology for binding composite layers was developed. A non-adhesive binding method was used with an ultrasound applied by means of a universal vertical spot welder that performed the working motion similar to that of a pneumatic press, the composites were then welded and different bioactive composites for protective footwear were obtained. (Irzmanska, 2017)

TYPES OF FACE MASKS:

DEGRADABLE MASKS:

A degradable mask is a mask that has basic filtering performance and can be biodegraded after being discarded. From the perspective of sustainable development, degradable masks are an important part of the masking strategy. However, these masks involve the challenge of high manufacturing costs from both production and materials with the current design because this mask design requires that every part be biodegradable. In order to overcome the cost problem , novel masks can be produces, Infact a few Japanese companies are promoting the reuse of washable face masks to help address the shortage of face masks worldwide while simultaneously striving to improve the environmental footprint by using renewable biomass-based resources, including polylactic acid [10].

REPLACABLE BIODEGRADABLE FILTER MASKS:

These masks are good choice, in addition to the knitted masks. Although the shell design of replaceable filter masks can be varied, they can fit the face better and even use sterilisable materials. More importantly, they can be stored and recycled to avoid pollution caused by discarding. In this design, the filter can be prepared using degradable materials. These replaceable filter masks have the potential to reduce costs to a range acceptable to consumers while meeting environmental protection requirements. To avoid

the risks of secondary infection, these masks should be disinfected after wearing. Since the filter uses degradable materials, the filter can be directly discarded after disinfection. At the same time, because there is no need to maintain the filtration efficiency of the filter, any sterilization method can be used, such as spraying medical alcohol.

HOMEMADE MASKS:

The use of homemade masks is an emergency measure for epidemic protection under the premise of a shortage of masks. This type of mask is also called a cloth face covering since most of these masks are made of fabrics that are available in the home. It also advises the use of simple cloth face coverings to slow the spread of the virus and help people who may have the virus and not know it from transmitting it to others. Cloth face coverings fashioned from household items or made at home from common materials at low cost can be used as an additional, voluntary public health measure. Also these masks showed 95% filtration efficiency according to the Researchers from University of Chicago.

Such masks can be used to reduce the potential load of plastic masks that cause serious environmental pollutions.

CLASSIFICATION OF BIOPLASTICS:

- **Polylactic acid** makes up a growing 10% of the bioplastic market, it has mechanical properties similar to PS and could replace it in its applications as a more sustainable material. PLA's brittleness can be improved by blending with tough polymers or via plasticization block copolymerisation, which has been shown to increase the strain at break but reduces the material's tensile strength.
- **Polyglycolic acid** production is minuscule by comparison < 1%, nevertheless, PGA dominates the biomaterial suture market mainly because of its good mechanical properties, excellent biodegradation and biocompatibility. PGA and its copolymers represent the largest production by volume for medical sutures compared to other

commercial biopolymers. PGA represent less than 1% of the biopolymer market, its collection and recycling is not necessary since the only PGA in circulation is then used in medical applications where they biodegrade inside the body.

- **Polyhydroxyalkanoates** likewise only makes up a small percentage of the bioplastic market 1.4% but their production is set to quadruple by 2023. This is in part because of their excellent barrier properties similar to PET, and because of their good mechanical properties similar to LDPE. Their monomers are highly variable which allows for tailoring of the final polymer properties. PHA shares the same brittleness limitation as PLA and likewise its brittleness can be improved using tailored blends with plasticizers. PHA has high biodegradability and good barrier properties meaning it could replace PET in bottle applications.
- PE and PET are both very important polymers making up 32% and 10% of all non-fibre petro-plastics. Bio-PE and bio-PET make up 25.6% and 9.5% of the bioplastic market respectively. This can be attributed to the cheaper costs of petroleum production instead of a renewable biomass resource. Bio-ethylene is normally synthesized from the catalytic dehydration of bio-ethanol, which itself is generated from first- or second-generation fermentation of biomass.

RECYCLING OF BIOPLASTICS:

There are various technological efforts ongoing to recycle bioplastics and fossil-fuel-derived plastics. These include the use of de-polymerization, pyrolysis, or other methods to break plastics down and recovering the raw materials from which the plastics were synthesized. These processes are called chemical recycling which offer a promising way to turn used bioplastics into renewable chemicals or fossil fuel chemicals for use in new products with a minimum amount of waste. The only problem with mechanical recycling or conventional recycling is that waste plastic that is collected, sorted, cleaned, shredded, and then melted down and pelletized to be reused, loses some of its original physical and mechanical properties. 3D printing generates a large amount of plastic waste, coming from scrap, failed prints and defective pieces. Therefore it is necessary to

propose methods to manage the increasing amounts of plastics being generated. Despite the potential advantages of mechanical recycling of 3D printing wastes, only a very small fraction of PLA waste is currently recycled. A well-known barrier to the mechanical recycling of PLA 3D printing waste is the degradation suffered by the polymer during the recycling process, which results in chain scission that leads to a decrease of the average molecular weight and, consequently, of some mechanical and thermal properties. Chemical recycling has been tried for other biopolymers as well. Biological recycling is another alternative option. The recycled material forms a biomass that binds carbon for a longer period than mechanical recycling or incineration. Biological recycling is usually considered as composting, where microorganisms degrade the organic waste and the degradation products are returned to the natural carbon cycle.

BIOPOLYMERS:

Bio-based polymers are more sustainable materials than petroleum-based polymers. A bio-based polymer has been derived from carbon biomass sources such as vegetable fats, cellulose or corn starch. The biopolymers themselves emit smaller quantities of CO_2 when disposed in an incinerator compared to conventional petro-plastics. For bioplastics to replace conventional petro-plastics there needs to be a cost reduction in their production, a need to improve their thermomechanical and barrier properties, improved speed of biodegradability and a wider availability. There is a major distinction between the first generation and the second generation biomass. The former refers to the food biomass whereas the latter is the lignocellulosic wastes. Using a second-generation biomass such as forest residues to synthesize bioplastics that could replace petro-plastics in their applications, would significantly mitigate climate change effects due to smaller carbon footprints. (Lamberti, 2020)

BIODEGRADATION OF THE BIOPLASTICS:

Various microorganisms specially bacteria and fungi are used in the degradation of these plastics into Co2 and H2o through various enzymatic and metabolic mechanisms.

Both biodegradable and non-biodegradable polymers such as PHA, PLA, PET, PHB, PVC, PCL, and PBS are reported to be attached to various microbes and their enzymes. Microbial characteristics affecting the biodegradation rate include, the type of microorganism present, the microorganism's distribution, the growth conditions of the microbes and the types of enzymes used by the microbes (Pillai CKS, 2010). The primary mechanism involved in plastic biodegradation is sticking of microbes with polymers followed by surface colonization. A two- step enzymatic hydrolysis takes place, Firstly, the enzymes attach to the polymer substrate followed by hydrolytic division. The second stage occurs when the polymer chains have reached a sufficiently small size, thus allowing for transportation into the cells of the microorganisms where they can bio assimilate and mineralize. Non-biodegradable polymers (fossil-based and bio-based) are so-called non-biodegradable since they might be completely biodegradable once new microbial strains and their pathways to degrade these polymers were completely described. New microbial enzymes and pathways need to be explored to optimize conditions under which polymers can be degraded efficiently. (Tokiwa Y, 2009)

CONCLUSION:

Our increased reliance on plastics during the COVID-19 pandemic may be temporary or likely to change our long-term goals of transitioning towards a circular economy. During COVID-19, the use of SUPs and PPE increased significantly thus, the need of rethinking and redesigning plastics, along with the improvement of recycling streams to ensure proper end-of-life for those products, should be at the highest priority. Although the number of studies addressing the environmental impact of COVID19 pandemic is increasing in a daily basis, it remains unclear the extent of the physical impact of plastic pollution during COVID-19 and what will happen in the long term. Bioplastics, currently accounting for less than half of one per cent of all plastics manufacture, are growing rapidly because of the clear advantages they have in many applications. *Bioplastics can provide excellent biodegradability, helping the world deal with the increasing problems of litter, particularly in the world's rivers and seas. Durable plant-based bioplastics can also be recycled as well as their conventional equivalents, assisting the growth of a more*

sustainable world economy. These developments need to be implemented on an industrial scale within the coming years, while maintaining the objective of prioritising reclamation of biomass in keeping with an approach of eco-design and circular economy.

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ABSTRACTS

A STUDY OF THE PUBLIC SECTOR BANK EMPLOYEES ON THEIR WORK STRESS AND PERFORMANCE IN THRISSUR DISTRICT OF KERALA DURING COVID-19 PANDEMIC

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Stress is a universal factor and individuals would face it at some phase of life. The bank employees are under great pressure during covid-19 pandemic period. Stress and pressure will reduce their efficiency to work and can also create some problems in their social life. Stress will also cause health issues. The main reason for stress among bank employees are lack of administrative support, excessive work load, problems with customers, relationship between co-workers, family and work life balance, fear of job loss, fund allocation, loan closing, fund transfer, gold loan, moratorium and change in regulations . As banking is an emergency service, physical presence at office has a high probability of being exposed to Covid.

Keywords: *regulations, stress management, risk, essential services, pandemic*

A STUDY OF DIGITAL MARKETING INITIATIVES IN INDIA

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Digital marketing is rising in India at a rapid pace. Many Indian companies are using digital marketing for competitive advantage. Success of marketing operation cannot be completely achieved by digital marketing only. Preferably for success of any marketing operation it should fully control the capabilities of various marketing techniques available within both the traditional and modern marketing spheres. Start-ups who use digital marketing many times have failed. Marketing of products or services using digital technologies, mainly on the internet, but also including mobile phones, display advertising and any other digital medium. This study shows precautions to be taken for effective implementation of digital marketing to obtain massive prospective to increase in sales and techniques to market the products and services by using different technologies.

Keywords: *Marketing, techniques, customers, internet, products and services, traditional, modern.*

A STUDY ON INVESTMENT OPPORTUNITIES IN THE STOCK MARKET DURING AND POST COVID

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Stock markets are excellent avenues for investing idle financial resources, which if done calculatedly will yield very good returns. Stock market transactions, which are routed through the various stock broking firms ultimately happens with the stock exchanges that is the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE). Both those stock exchanges provide investors with the facility of investing in their broad based indices which is the SENSEX and NIFTY respectively. Apart from the broad based indices, the stock markets offer the choices of enabling investors to invest in sectoral indices, indices based on market capitalisation and those representing a particular number of blue chip companies. The sectoral indices are quite diverse, which encompasses individual sectors of the economy such as Information Technology, Realty, Automobile, Healthcare, Banking, FMCG to name a few. The indices covered under market capitalisation can be classified as large cap, mid cap and small cap. The stock markets also offer the provision for derivatives trading. The estimation of the stock market movements can be done through various tools and techniques such as fundamental analysis, technical analysis, regression analysis and by the use of a vast number of econometric models. The present research aims to employ advanced statistical techniques to identify and forecast the future movement of the above mentioned indices. A further analysis will be made on those sectors and indices or a combination of which would be most appropriate for investing or divesting. The results obtained would further be verified using hypothesis testing. The study would hence aim to guide investors so that they would make informed and rational investment decisions.

***Keywords**: Stock markets, Stock Exchanges, SENSEX, NIFTY, Sectoral Indices, investment*

A STUDY ON THE EFFECTIVENESS OF INTERNAL CONTROL IN FINANCIAL MANAGEMENT

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Internal control in financial management are very essential because errors and frauds may occur, it is therefore important for any organization or institution to establish an efficient and effective internal control management in the organization to safeguard and ensure that they sufficiently meet the fiduciary responsibility such as maintaining the financial books and records of a plan and also maintaining complete and accurate annual report record. Internal control management is a term that has wide coverage. It covers the control of the whole financial management system in order to carry on the business of the organization in an orderly and efficient way by having an automatic check and balance over all the financial management in the organization. Effective internal controls in financial management is the foundation for a secure and sound organization. By the help of internal control in financial management system is similarly essential to the management and the auditor concerned. It helps the organization to meet its goal more resourcefully and successfully. At the organization level, internal control in the financial management objectives relates to the reliabilities of financial reporting, timely feedback on the achievement of operational or strategic goals and compliances with laws and regulations. Internal control in financial management includes internal check, internal audit and other devices of control. Although internal control and internal audit are closely related, they are distinct from each other. Internal control in systems, policies, procedures and processes affected by the board of directors, management and other personnel to maintain the organization assets limit or control to achieve the organization's objectives.

Keywords: *Effectiveness, Financial management, reliabilities, compliances, safeguard, internal control.*

A VISION TO DEVELOPED INDIA THROUGH 'MAKE IN INDIA'

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The 'Make in India' strategy is launched to attract foreign investors to invest almost in all sectors in India to encourage international economic integration. International integration plays an important role in the economic development of an economy. Foreign Direct Investment is one and only major instrument to achieve the stated integration in any economy. It serves as a link between investment and saving. This programme has been devised to transform India into a global design and manufacturing hub. The focus of 'Make in India ' programme is on 25 sectors, for job creation and skill enhancement. It is the buzzword initiated for the sole purpose of inviting various commercial sectors from all around the world, to engineer their products in India and sell them anywhere they wish. This has emerged as one of the grandest triumphs of the Indian economy. Both the policies seem to benefit the Indian economy in their respective ways. On one hand, Make in India will boost foreign investments in the economy and on the other it will help the country to be self-reliant in terms of manufacturing products. Therefore, a logical route needs to be adopted. India is expected to be the third largest consumer economy as its consumption may triple to US$ 4 trillion by 2025, owing to shift in consumer behaviour and expenditure pattern, according to a Boston Consulting Group (BCG) report; and is estimated to surpass USA to become the second largest economy in terms of purchasing power parity (PPP) by the year 2040, according to a report by Price Waterhouse Coopers. With this initiative, Mr. Modi is literally inviting the rich and semi-rich countries to step in India and invest their money for the future of the domestic economy.

Keywords: *Make in India, growth, Foreign Direct Investment, Balance of payment, economy.*

AATMA NIRBHAR BHARAT YOJANA – WAY FORWARD TO A SELF RELIANT ECONOMY

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Atma Nirbhar Bharat Abhiyan is the new version of 'Make in India' which was announced by Honourable Prime Minister, Narendra Modi on 12th May 2020 with a new vision of making India 'a bigger and more important part of the global economy'. The detailed announcements were made in five days in terms of relief package by the Union Finance Minister Ms. Nirmala Sitaraman to mitigate the negative effects of COVID-19 pandemic. She clarified that it doesn't aim to adopt protectionism against other countries. Those sectors which requires foreign direct investment (FDI) and foreign technology are always welcome. In the critical situation of pandemic when international movements of goods and services were prohibited, India showed the independent skill of manufacturing Personal Protective Equipment (PPE) by growth of this sector from zero to 1,50,000 pieces a day by the beginning of May, indicating the capacity of Self-reliance. The Atma nirbhar Bharat Abhiyan focuses on those sectors and areas which have potential to achieve self-reliance in the future. It tries to analyze the limitations and bring out the various suggestions to utilize the existing capacity for becoming a global supplier. The main concept behind this yojana is to make the nation self-reliant with more focus on local manufacturers and service providers. This will strengthen the economy, improve the standard of living and most importantly improve the trade deficit of the country. It will help the country to reduce its dependence on imports and may also give a boost to exports.

Keywords: *Atma Nirbhar Abhiyan, Foreign Technology, self reliance, exports, FDI, pandemic.*

ANTIBIOFILM ACTIVITY AGAINST LUNG INFECTION CAUSING P. AERUGINOSA THAT HAVE A HIGHER IMPACT ON COVID 19 PATIENTS

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P. aeruginosa is a gram-negative bacilli which is an important causative agent of nosocomial infections among the immune-compromised individuals and can cause cystic fibrosis, chronic otitis, infections in pulmonary tract etc. They can form a structured community of bacterial cells enclosed in a self-produced polymeric matrix called biofilms. The biofilm formation is controlled by 'cell-to-cell communication' or quorum sensing. Las, rhl and PQS system control the biofilm formation in P. aeruginosa. Multidrug resistant strains emerge because of horizontal gene transfer or mutation of certain genes. Continuous research is happening in producing vaccines, drugs, phytochemicals or phage therapy. There are many natural and synthetic products that interfere with control mechanisms of biofilm formation by P. aeruginosa without affecting directly bacterial viability. Silver nano particles are also used to disrupt biofilms. During this pandemic, immune compressed individuals with cystic fibrosis, lung infections are impacted by corona virus. Hence, novel methods to treat these diseases which is caused by biofilm forming P. aeruginosa is important.

***Keywords**: Biofilm, Pseudomonas aeruginosa, quorum sensing, cystic fibrosis, multidrug resistance.*

ATMANIRBHAR BHARAT YOJANA: LOCAL FOR VOCAL

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'Atmanirbhar Bharat' is the mission and vision of our prime minister Shri Narendra Modi ji to make India self-reliant. With the slogan "local for vocal" Modi ji called upon the people of the country to build a self-reliant India on 12th May 2020 & along with this, he announced economic package of 20 trillion for the same. This would benefit labour, farmers, honest tax payers, MSMEs and the cottage industry. He said making the country self-reliant was the only way to make 21st century belong to India, 'India should see the covid-19 pandemic crisis as an opportunity', and focused on 5 fundamental pillars i.e. economy, infrastructure, technology driven system, vibrant demography and demand. The steps taken by the government will not only improve the economic and social capacity of India but will also strengthen India's position on its own. Atmanirbhar Bharat does not advocate self-centered system or protectionist system but there is a concern for the whole world's happiness, cooperation and peace.

Keywords: *Covid-19, Atmanirbhar Bharat, self-reliance, local for vocal, technology, infrastructure.*

ECO-FRIENDLY TECHNIQUES FOR PLA PRODUCTION FROM LACTIC ACID FOR MEDICAL USAGES IN POST COVID MANAGEMENT

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Poly lactic acid, also known as polylactide is a lactic acid polymer. It is famous because of its biodegradable properties, can be produced from renewable resources like corn, sugar beets etc. It breaks down into non-toxic products during degradation; it is biocompatible i.e. reducing the amount of plastic waste. Because of its excellent combination of properties, PLA has been able to replace the conventional petroleum based plastics. PLA has been recognized as safe (GRAS) by United State Food & Drug Administration (FDA) and is safe for all food packaging applications. PLA has biomedical applications such as tissue engineering. Various medical implants are made of PLA. These implants break down completely inside the patient's body thereby eliminating the requirement of any further surgery. PLA can be transformed into thin fibres, used for manufacture of sports apparel, upholstery materials, hygiene products etc. Fermentation of lactic acid has gained huge attention in recent years because of its importance for being building block for the manufacturing process of biodegradable plastics (PLA). India has large amount of agricultural feedstock to be used as raw material for lactic acid production, in turn producing PLA. Our attempt is to find by eco-friendly techniques for the production of poly lactic acid (PLA) from LA using fermentation of renewable agricultural feed stocks.

Keywords: *Lactic, Biodegradable, Biomedical, upholstery materials.*

EMERGING CHALLENGES AND STRATEGIC IMPLICATIONS FOR INDIAN MUTUAL FUND INDUSTRY IN POST COVID-19 REGIME

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Mutual fund returns have taken a sharp hit due to the Coronavirus epidemic. But history has shown that markets and mutual fund returns have always come back stronger. Mutual funds have invested just Rs 1,230 crore in stock markets during the lockdown and industry experts believe they are still waiting for a good "entry point" and maintaining high liquidity for any possible redemptions by corporate houses. Essentials for investment into mutual funds to create a strong resilient portfolio. Investment portfolios are built to support one in difficult times and not the other way round. Selection of category and scheme in that category is most important decision for retail investors therefore please follow the below process to sanitize your portfolio with smart switch wherever required. Further, on the basis of quantitative data and annual reports of financial institutions (RBI, SEBI) NBFC, credit rating agency (CRISIL, ICRA, S&P etc.) and business associations, bring out deliberate inference and recommend premeditated map for coating the mutual funds on escalation pathway in post-COVID-19 for the outstanding quarters of financial year 2020- 2021.The financial analysis was highlighted , by assessing a lot of financial experiment like, Sharpe ratio, Treynor Ratio, Jenson Measures, Standard Deviation, Variance, Alpha, Beta in CAPM and Coefficient of Determination (R2).

Keywords: *Mutual Fund, Average Return, Standard Deviation, Beta, NAV, Performance Evaluation.*

FATE OF MITOCHONDRIAL BIOGENESIS DURING VIRAL INFECTION

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Mitochondria are the multicellular organelles and acts as a power house of the cell and also have their own genome. The numerous functions of mitochondria make them indispensable to the cell so when the virus hijacks mitochondrial function it allows to control the whole cell. Then the multifaceted mitochondria involves in several transduction pathway, regulation of biochemical pathways related to cellular metabolism, apoptosis, aging and pathogenesis of numerous disease immune responses. During viral infection, the viruses alter the cellular physiology and function to establish cellular environment conductive for viral proliferation. Then the host cells triggers antiviral defense such as shutdown of translation, foreign RNA editing and degradation of interferon production. The entry of virus may cause stress in the host cells due to the alteration in the cellular metabolism thus produce an oxidative stress. The mitochondrial respiratory chain is the main and significant source of reactive oxygen species in the cell due to leakage of electrons. Mitochondrial biogenesis is the cellular process that produces increase in mitochondrial mass by activating numerous different signals at the time of cellular stress. Once it forms then it produce mitochondrial antiviral signaling protein (MAVS) which plays a key role in the innate response to viral infections, helping to induce antiviral and anti-inflammatory pathways to develop immune defense mechanism. Recent researches of viral infection results in mitochondrial dysfunction in various aspects the identification of the specific mitochondrial targets of the virus may help narrow the therapeutic options and effectively restore its mitochondrial function.

***Keywords**: Biogenesis, Multicellular organelles, Mitochondrial, Proliferation, infection.*

GREEN BANKING STRATEGIES IN KARNATAKA POST COVID

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In this present scenario of globalization, as we pass through 21st century, one thing that we miss very badly is the depletion of greenery. As everybody in this society is becoming more and more concerned and worried about the natural environment, business organizations and corporations have started modifying their working in an attempt to increase greenery to the maximum possible. Green banking means combining operational improvements, technology and changing client habits in banking business. It means promoting environmental-friendly practices. This comes in many forms such as – using online banking instead of branch banking; paying bills online instead of mailing them; opening up CDs and money market accounts at online banks, instead of large multi-branch banks; or finding the local bank in the area that is taking the biggest steps to support local green initiatives. Banking sector is generally considered as environmentally friendly sector in terms of the pollutions and emissions. Main emphasis has been made on the concept and scope of green banking in Karnataka so as to make our environment human friendly and enrich our economic productivity. This study also covers the recent strategies made by Indian banks for sustainable development and challenges faced by banks in implementation. For the controlling of global warming problem there should be focus on green and eco-friendly initiatives by all. With the introduction of Automated Teller Machines (ATMs) in 2001, banking sector took a major initiative towards an environment-friendly banking system. This paper deals with the green banking strategies initiated by the banking sector in Karnataka. The research is based on the secondary data. Coming to the findings, there is utmost need to create awareness in rural regions and follow green banking as much as possible in today's business world and especially during this pandemic situation.

Keywords: *Green banking, Environmentally friendly banking, Online banking, digitalisation, Karnataka.*

IMMUNOMODULATORY EFFECT OF PEA LECTIN DURING VIRAL INFECTION

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Novel coronavirus or covid 19 appeared in the city of Wuhan in Nov 2019. Currently, there is no drug or vaccine available for this pandemic. Somehow the treatment with hydroxychloroquine and azithromycin as they do not specifically target the viral pathogen. Antiviral lectins are successfully used from generations against hepatitis C, herpes, Japanese encephalitis, influenza A/B and other viral infection are treated with lectin-based drugs. To inhibit the binding of covid19 to the receptors some lectins are used as antiviral therapeutic agents either by masking the glycoproteins of the viral envelope or by blocking receptors of the virus at the level of host cells. SARS, MERS-CoV, are type of coronavirus characterised by unsegmented RND genome and signal stranded with the largest genomes of RNA virus listed till date. Yohichi Kumaki et al. Lectins contains great potentials to inhibit and prevent multiple infection. Covid19 envelope glycoprotein S is rich mannose and are hybrid, contains complex N-glycans. Glycoprotein is the key for viral life cycle and major target for antiviral drugs such as lectins. The choice of the lectin imperatively respects to the specificity of glycoproteins. In order to prevent the binding of covid19 to the target cell appropriate use of lectins whose binding specificity is mannose or complex N-glycans. Pathogen derived lectins plays an important role in cell invasion and adhesion, host carbohydrate bearing molecules in inducing the secretion of IL-12, a crucial proinflammatory cytokine. Plant lectins has ability to recognise and stimulate naïve murine mononuclear cell in vitro has been characterised in the study. They have the capacity to agglutinate erythrocytes with known starch specificity since they have in any event one non-reactant domain that ties reversibly to specificity monosaccharides or oligosaccharides. Lectins are separated from their normal sources by chromatographic techniques or produced by recombinant DNA technology. The animal lectins are low contrasted when compared to plant lectins such as, legume lectins. Lectins manifest a large diversity of activities including antiviral, immunomodulatory, antitumor and antifungal. Virus entry assay are performed to understand the virus attachment and penetration thus the results are exhibited with Antiviral activity of the mannose-specific lectin of amaryllis (HHA) administered at different time points after coronavirus infection.

Keywords: *Cytokines, Erythrocytes, Pisum sativum, Lectins, Immunomodulatory.*

IMPACT OF COVID 19 PANDEMIC ON HIGHER EDUCATION SYSTEM - A REVIEW

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The break out of Covid-19 global pandemic has created distortions in each and every sector of the globe. Covid 19 pandemic has evoked a drastic change in the education sector, a visible shift from classroom in person learning and teaching to virtual mode of education. This shift is deemed to be instant and sudden which earned it the name, 'Spontaneous Virtualization'. The question of access to digital infrastructure analysed in the present study is in association with a mix of factors of, access to a digital handheld device for e- learning and access to internet and the issues of connectivity and bandwidth. The access to e- learning is incomplete with the existence of digital skills to use the device. The problem under study is the issue of digital divide prevailing in the country and its impact on online education during the pandemic. The new method of education exposes the existing digital divide among the student community. When the quality of education is being determined by the elements of access and inclusivity, the challenges of the novel strategy further the existing inequality and inefficiency in the Indian education sector

Keywords: *Covid-19, online education, digital divide, access, inclusivity, connectivity.*

IMPACT OF COVID 19 PANDEMIC ON THE PSYCHOLOGICAL CONTRACT AND MENTAL HEALTH OF HEALTHCARE PROFESSIONALS IN BANGALORE

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Healthcare is regarded, as delivering an exceptional quality experience for patients and it is not possible without daily challenges for health professionals. Doctors and nurses belief about the extent to which hospitals has fulfilled its obligations to them will affect their commitment within the hospitals in the crisis of COVID-19. Managers been aware and managing healthcare professionals expectations can support positive psychological contracts and commitment levels amongst nursing professionals. It is important to fulfilling expectations and promises that encourage nurse responsibility and autonomy as well as promises of a social atmosphere that includes co-operative relationships and good communication at workplace. Job demands form healthcare professionals lead to higher violation and organisations should be aware that when they overload nurses with work, they are more likely to perceive contract breach and violation, especially when employees feel that they lack access to job resources, such as enough autonomy, control, and social support. The psychological contract variables influence the commitment of doctors and nurses due to the changing policies of the healthcare and working conditions, interference of the management into the work process, even though they manage family and work life effectively. The present study is to know the impact of COVID 19 pandemic on the psychological contract and mental health of healthcare professionals. The study provides empirical evidence on identifying impact of COVID 19 on psychological contract and mental health of healthcare professionals in the Hospital. The empirical analysis is based on data collected through survey of doctors and nurses from private hospitals. The statistical tools of correlation, regression analysis, ANOVA would be used for examining the results.

Keywords: *Commitment, COVID 19, healthcare, psychological contracts, strategies, mental health*

IMPLICATIONS AND IMPERATIVES OF COVID 19 ON MSME SECTOR

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Due to the Covid 19 pandemic, a nationwide lockdown was announced on March 25, 2020. Consequentially, many industries such as aviation, tourism and travel, real estate, hospitality industry, MSME sector came to a temporary halt. Confining the focus to MSME sector, the paper proposes to analyze the impact of Covid 19. The findings indicate a major credit crunch with situation worse even before the pandemic. The added effect of Covid 19 has caused a setback to the MSME sector. The paper also reviews the fiscal policy announced by the Finance Minister of Government of India as a part of Aatmanirbhar Bharat Abhiyaan. The paper suggests the need for digitisation and E-commerce in the field of MSME sector for further expansion and as a part of revival strategy. The research is based on available literature, publications and research papers.

Keywords: *Covid 19, MSMEs, Aatmanirbhar Bharat Abhiyaan, E-commerce.*

INDIAN STOCK MARKET DURING PANDEMIC TIMES

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The year 2020 has been an unusual year with the outbreak of corona virus globally. Individuals, business firms, organisations, industries, educational institutions, hospitals, investments, tourism and hospitality had to face this crisis. The Government of India announced 60 days lockdown due to the spread of the virus. Globally, the outbreak of corona virus has resulted in very low economic activities in the country. In this context, financial markets, particularly the stock market had to undergo this crisis facing risk and uncertainty together. Even in normal circumstances, the Indian stock markets are volatile so during pandemic with the downturn of economic activities, it resulted in fluctuations as companies which were performing well suddenly closed. Since the outbreak of covid 19, uncertainty still prevails bringing about changes in market performances, value of market capitalization and the companies which wanted to go for initial public offers. The paper tries to examine the fluctuations of the Indian stock markets during pandemic times.

Keywords*: Indian stock market, covid 19, pandemic, investments, performance.*

RELEVANCE OF ANTIBIOTICS IN TREATMENT OF VIRAL INFECTION

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Antibiotics kill or stop growth of bacteria and thus are used for treatment of bacterial infections. Other than that antibiotics are being used for the treatment of viral infections from a long time. Though antibiotics do not kill viruses as viruses have different structure, mode of replication compared to bacteria but they do help in treatment of secondary bacterial infections. These secondary infections are often the main cause of mortality and morbidity, therefore it is important to treat these infections. Antivirals are the chemical compound which are used to kill viruses but for it to work it is necessary that it has to be taken in initial stage of infection. Virus uses host cell mechanism to replicate and hence it's a little difficult to kill them compared to bacteria. It's easy to kill virus but difficult to save the cell at the same time, hence drugs unique to viruses are used. For successfully treating a viral infection a combination of antibiotic and antiviral is used. Interaction between multiple drugs being used a time is important to understand to treat a person. This article talks about use and interaction of antibiotics with antivirals for viral infections.

Keywords: *Antibiotics, Antivirals, Viral infection, Secondary infections.*

ROLE OF EDUCATION AND EMPLOYMENT IN WOMEN EMPOWERMENT

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The women in India have been subject to many inequalities, discrimination and violence for a very long time. Over the years, women have been victims of many social evils like female infanticide, dowry system, child marriage, domestic violence, sexual harassment at home, at work places, gender inequality in terms of pay and many more. And empowering women is the only way to safeguard and to improve the condition of women in India. Women empowerment will help the women to see the world in a different way and not just see what the society wants them to visualise. And the two major things that can help in achieving this goal are education and employment. Education is the core of empowerment and employment is the force that further drives women in the right direction of empowerment. But women in India have not been successful in achieving the level of education and employment that their male counterparts have been able to achieve over the years. There is a wide gap. According to the census 2011, the literacy rate of females is 65.46% while that of males is 82.14% also in the aspect of labour force participation, women are far behind men. As of 2018 women's labour force participation remains to be 23.6 and that of men remains to be 78.6. Change in this scenario is the need of the hour. Women deserve equality in all fields of life, as they are a major part of the economy their development is necessary for the overall development of the country. The study aims to find out the gender gap in education and employment and the reasons behind them and what are the ways that can be adopted to eradicate that gap.

Keywords: *Women Empowerment, Education, Employment, Labour force, Gender gap.*

ROLE OF PRIMARY HEALTH CENTRES IN RESPONSE TO COVID -19

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Health is not everything in life. But life is nothing without health. (Peter Sweifel). Health of the people is really the foundation upon which all their happiness and all their power as a state depend. Health is a component of what is known as welfare and it is man's most precious possession. Good health and long life have therefore traditionally been the most prized goals of mankind. Good health is considered as a pre-requisite for economic development and social welfare. A healthy community is the infrastructure upon which an economically viable society can be built up as unhealthy people can hardly be expected to make any valid contribution. Thus, health is considered as highly valued asset. Primary care can play a significant role in the COVID-19 response by differentiating patients with respiratory symptoms from those with COVID-19, making an early diagnosis, helping vulnerable people cope with their anxiety about the virus, and reducing the demand for hospital services. This document provides national and subnational health managers, as well as staff at primary care facilities, with interim guidance on timely, effective and safe supportive management of patients with suspected and confirmed COVID-19 at the primary care level; and delivery of essential health services during the COVID-19 outbreak.

Keywords: *Covid-19,Health, Primary Health Care, Outbreak, Health workers.*

STRATEGIES FOR MANAGING INVESTMENT AND SPENDING PATTERN

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The entire world faced a drastic situation where it had come to a halt in situation which was beyond imagination due to the pandemic that the world faced. India being densely populated country with insufficient medical facilities was left with no option but to follow the policy of lockdown. The complete and partial lock down that we faced affected both sides of business - demand and supply. Likewise, there are a number of sectors like Aviation, Real Estate, Tourism, Education, Automobiles etc., which did not do good. Therefore, the economic impact of COVID-19 is on variables like growth, international trade, financial markets, unemployment, income, poverty and many more. From the above problems the people in India faced a lot of issues in terms of finance as many lost their jobs, and hence realised the meaning and importance of money. Many of them lost jobs, experienced pay cuts and had to manage families by utilising their savings. While financial planning allows individuals to meet life goals by prudent management of finances, it may be observed that learning to manage money wisely could be the first step towards the bigger goal. Both these areas call for ascertaining the need, efficiency, and time frame before getting started. Hence the researchers would like to enumerate the various strategies that can be implemented by every person by dividing their income into three parts – Savings, Expenditure and Investments.

Keywords: *International trade, Financial markets, Investment, Pay cuts, Savings, Income.*

STRATEGIES FOR MANAGING INVESTMENT AND SPENDING PATTERNS

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Finance is the study of investing and managing money. The right investment at the right time can yield positively. It is all about availability of funds at the right time. Finance is a topic which has a wide spectrum. One of the interesting and important branches are understanding and managing investments. It can be small or large and can be made in different forms. It is instrumental to understand the different ways of investing in order to make the right investment decisions that suit an individual's purpose of investment. Upon referring to various studies about the spending and saving patterns of Indians, it is apparent that Indians largely rely on traditional methods of investments, failing to realize that savings can be optimally leveraged to maximize profits and that it can be done in a safe environment. Borrowing money or acquiring additional funds for various purposes can be done by methods other than directly borrowing funds from financial institutions such as banks. As a nation, India has faced multiple issues in the financial system impacting the micro and macro levels of investment. The idea behind this research paper is to find ways to utilize / mobilize savings and to find more secure ways of borrowing and lending funds. The objective is to find ways that can be used to maximize savings and availability of funds. If people find the right balance between saving and mobilizing funds, a secure financial future lies ahead for a developing country like India. This research focuses on how people have been saving over the years and the means of investment to expand their resources. It will also include study on how small traders acquire funds. This would give a general idea of how much information is available and how much more can be done. Further it would explain the financial concepts available and how it could be implemented.

Keywords: *Investment, Borrowings, Income, Savings, Portfolio, Fund management.*

TECHNOLOGY AND COVID-19 PANDEMIC

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This paper describes how robotics and autonomous systems, smart gadgets can be implemented which supports healthcare convenience and the healthcare staff during the COVID-19 pandemic.

For instance, robotic and tele-robotics systems can significantly diminish the risk of infectious disease transmission to frontline healthcare workers by making it possible to segregate, evaluate, monitor, and treat patients from a safe distance. We come up with various examples of where the medical, engineering, and science communities can gather together to aid the healthcare system, healthcare workers, and society during the ongoing pandemic. We can discover ethical, practical, and beneficial technological immediate results which can be tackled effectively in this crisis and even in future emergencies.

Keywords: *COVID-19, Healthcare, Robotics, Wearable Technology, Autonomous Systems*

DIGITAL INTERVENTION IN TEACHING

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Technology is one of the major inventions of man which has a massive impact on our daily life. It acts as an integral part of human life without which life is undoubtedly inevitable. The inclusion of technology in education is noticed over a period of years. The education system all over the world changed its traditional routes to modern ways. Technology with its attractiveness as a prime quotient has attracted everyone in teaching and learning easily and effectively. A country like India is not the early adopter of technology in the education sector but today it is one of the fastest growing nation towards digital teaching and learning. Now, due to the impact of COVID-19 traditional teaching and learning methods got hugely shifted to digital mode. Institutions and teachers are 'forced' to adopt digital teaching. This research paper focuses on the issues and challenges of digital intervention in teaching students. paper tries to disclose the problems faced by educators to teach students by adopting digital technology.

Keywords: *Technology, Digital Learning, Education, Intervention, Digital mode.*

IMPACT OF SOCIAL MEDIA ON THE PUBLIC - THE LEARNING OUTCOME DURING POST COVID-19

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Since the beginning of the lockdown in March 2020 and even after Covid-19, social media has played a huge role in everybody's life. The use of social media has drastically increased during these difficult times. Social media has helped people connect with their loved ones, stay updated on the latest news, and also fill up their spare time before and also after covid-19. Social media has acted as a platform that has helped play a big role in spreading information about the global pandemic. It has also become the biggest marketplace where businesses can woo customers. But social media has also had a negative impact on the public with the amplification of misinformation and also adversely affecting the mental health of the audience. The constant use of social media during covid-19 is said to have caused after-effects like depression, anxiety, insomnia, and low self-esteem among users. Social media is also being used as a stage to spread hate while remaining anonymous which causes certain stigmas, violence, marginalization, etc. This instills a sense of insecurity and distrust in the people. During these trying times, social media responsibility plays a very important role. It is very important to use social media artfully and carefully. This research aims to study the impact that social media has on its audience whether negative or positive. It also aims to provide clarity on the role that social media has played and its use after covid-19. This research helps understand the influence and effect that social media has had on the mental health of the public. Mental well-being is being considered a very important aspect after covid-19. This study helps highlight the drawbacks that social media has and how they impact its audience.

Keywords: *Social media, Covid-19, public, mental health, drawbacks, well-being.*

ANTI-BIOFILM ACTIVITY AGAINST STAPHYLOCOCCUS AUREUS THAT WILL HAVE A HIGHER IMPACT ON COVID-19

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Staphylococcus aureus bio-film is responsible for many hospital acquired infections usually transmitted between patients, hospital workers and by hospital equipments. Methicillin Resistance S.aureus(MRSA) and Vancomycin Resistant S.aureus(VRSA) became world's most prevalent pathogen due to the overuse of antibiotics and gained resistance is S.aureus among patients. Exposure of S.aureus bio-film to chlorhexaidine, Cis-2-Decenoic fatty acid and D-amino acids were less effective in disrupting the bio-films. Recombinant subunit protein vaccines, multicompotent vaccines and the combination of IsdA,B with SdrD and E vaccines are used as a new strategies against bio-film development. Phytochemicals from the plant extracts such as Coptidis chinense, Aerva lanata, Bacopa monnieri and Calliandra haematocephala showed Minimum Inhibitory Concentartion ranging from 32 to 128 mg/L and 93% reduction of MRSA bio-film at higher concentration. Combination of plant extracts phytochemicals with silver and gold nanoparticles used as an efficient anti-biofilm agents, with almost 50%-95% effective at various concentrations. Nosocomial infections caused by S.areus biofilm in co-morbidity patients are more prone to COVID-19.

Keywords- *Bio-film, vaccines, phytochemicals, nanoparticles, nosocomial infection.*

ARTIFICIAL INTELLIGENCE APPLICATIONS IN EDUCATION

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Though only a dream a while ago, artificial intelligence (AI) has become a reality, being now part of our routines and penetrating in every aspect of our lives, including education. It is still a field in its infancy, but as time progresses, we will witness how AI evolves and explore its untapped potential. Against this background, this paper examines current insights and future perspectives of AI in various contexts, such as natural language processing (NLP), machine learning, and deep learning. For this purpose, social network analysis (SNA) is used as a guide for the interpretation of the key concepts in AI research from an educational perspective. According to various international reports, Artificial Intelligence in Education (AIEd) is one of the currently emerging fields in educational technology. While it has been around for about 30 years, it is still unclear for educators how to make pedagogical advantage of it on a broader scale, and how it can actually impact meaningfully on teaching and learning in higher education. This paper seeks to provide an overview of research on AI applications in higher education through a systematic review. Out of 2656 initially identified publications for the period between 2007 and 2018, 146 articles were included for final synthesis, according to explicit inclusion and exclusion criteria. The descriptive results show that most of the disciplines involved in AIEd papers come from Computer Science and STEM, and that quantitative methods were the most frequently used in empirical studies. The synthesis of results presents four areas of AIEd applications in academic support services. The conclusions reflect on the almost lack of critical reflection of challenges and risks of AIEd, the weak connection to theoretical pedagogical perspectives, and the need for further exploration of ethical and educational approaches in the application of AIEd in higher education.

***Keywords**: Artificial Intelligence (AI), Natural language processing(NLP), Social Network Analysis(SNA), Artificial Intelligence in Education (AIEd) , Profiling and prediction , Assessment and evalution, Applications of AI.*

ECONOMIC EVALUATION OF ATMANIRBHAR BHARAT ROZGAR YOJANA (ABRY) IN GENERATING EMPLOYMENT DURING COVID-19 - RETRIEVAL PHASE IN INDIA

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India is one among the developing countries with second highest population next to China. The Government of India have made many policies towards the developmental process for both rural and urban areas such as IRDP, Jawahar Rozgar Yojana, Indira Awaas Yojana, Food for Work programme, and MGNREGP. Though, there are many income generation and poverty alleviation programmes that exist, there is huge drop in the same due to Covid-19 pandemic. It affected almost all the countries in the world, India was also one among them and have started the recovery process to come out the economic crisis due to lockdown. The government of India has announced stimulus package schemes worth rupees 20 lakh crores and started implementing the programmes. The Atmanirbhar Bharat Rozgar Yojana (ABRY) is one of the important and action-based plan to create employment opportunities in the formal sector of India. This particular scheme is launched especially for the Covid-19 retrieval phase and it will be operational for 2020 to 2023 period. In this scheme, the individual employee who do not have employee provident account and drawing monthly wage of 15000 rupees would be eligible. Moreover, any provident fund member holding Universal Account Number (UAN) with earning lesser than 15000 rupees and exited from employment in the lockdown period will also be covered under this scheme. The present study aims to bring out the progress of the scheme in terms of implementation and also evaluates the pros and cons of the Atmanirbhar Bharat Rozgar Yojana (ABRY).

Keywords: *Atmanirbhar Bharat RozgarYojana (ABRY), Employment, Employee, Income.*

FORENSIC ACCOUNTING: A NEW PARADIGM FOR NICHE CONSULTING

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This paper reviews the literature on fraud and forensic accounting. For the purpose of this review, forensic accounting involves the process of understanding, identifying, detecting and communicating fraud patterns and schemes to stakeholders to aid any investigation process or activity. Accounting standards allow managers to exercise discretion in financial reporting. However, there are concerns that managerial discretion can be abused and could be used to engage in and to hide fraudulent practices. Hence, the need for forensic accounting. Nonetheless, the quality of any forensic activity would require the fraud expert or investigator to be knowledgeable on how perpetrators engage in fraud, its manifestation, how it is disguised and how to detect fraud. Motivated by this concern, this review examines prior studies on forensic accounting and draw implications for academic research and policy. Forensic accounting academics emphasize the need for forensic accounting education. However, little is known about whether forensic accounting education has unintended consequences. The literature is quiet on this issue. Thus, this review discusses this concern as a gap in the recent literature. Further, this review addresses a thought-provoking issue on whether all fraud cases should be given equal investigative priority. Just as medical doctors do not consider all illness to be life-threatening and therefore, do not commit significant resources (or the same amount of resources) to each category of illness. Similarly, using this analogy, it is easy to understand why regulators react differently to several reported fraud cases. Finally, this review makes a contribution to the forensic accounting literature.

Keywords: *Forensic Accounting; Fraud; Forensic Education; Fraud Triangle.*

GLOBAL IMPACT ON EDUCATION POST COVID-19

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The present study indicates the global impact of the e-learning process during COVID 19. The implementation of lockdown and social distancing has been enforced as one of the preventive measures to spread the novel corona virus infection which has resulted in complete paralysis of global activities. Especially the education system which is completely shut and to proceed with the academic schedule, there is a shift from the regular learning process to electronic learning. This can be recognized with an increased number of online classes, conferences, meetings, etc. It can be noted that the world is completely dependent on information technologies during this crisis. Hence, the present study provides an insight into the process of electronic learning and its advantages along with the updated version of its usage. There has been less number of scientific reports on this particular situation of the impact of e-learning during COVID 19. The present study is a collection of the components of e-learning tools and a survey that how effective is the online mode along with the future perspective on education using information science and digital platforms like Zoom, Cisco Webex, Microsoft teams, Google meet etc.

***Keywords**: Digital platforms, Education, information technology, electronic learning.*

A STUDY ON IMPACT OF COVID-19 ON STRATEGIC HUMAN RESOURCE POLICIES WITH SPECIAL REFERENCE TO IT SECTOR

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Unforeseen events caused by Covid-19 have enforced companies around the world to accelerate transition to online business. Human resource operates as the heart of these transformations helping organizations to operate in difficult situations and external crisis. Human Resource Management needs to manage people in companies during the crisis in order to enable business continuity and ensure work life balance. Strategic Human Resource policies focuses on making communication deliberate as it will be easy for the staff to ask questions via channel of communication that creates consistency, reconsidering leaves and policy conditions for staff. Providing guidelines to staff informing the team about the new development in employment laws and benefits. Following social distancing in order to slow down spread of Covid-19 thus implementing remote work strategies. Human resource policy also emphasizes on keeping in constant communication with the employees on their physical and mental health. Upgrading the skills of the employees in the field of technological operations. This study is made in an attempt to examine the problems faced by the IT Sector and how the Human Resource Policies will help in re-modelling the framework.

Keywords: *Strategic Human Resource Policies, Strategies, Communication, Technological Operation.*

ROLE OF SHG's IN PROMOTING ENTREPRENEURSHIP IN CHITRADURGA CITY

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SHG's which has been marked as the system of emancipating women from the traditional setup to the forefront of the development process. SHG's not only initiate savings increase, financial assistance, confidence and social status but also facilitates entrepreneurship. Because to start up and operate enterprises the SHG's in Chitradurga, they were using group savings fund, easy access of financial assistance from micro finance, making use of local material and creating jobs. Thereby ushering economic development and independence to women and their families. This study revealed that the participation of women is influenced by many factors like leadership factors, economic factors, social factors, cultural factors and psychological factors.

Keywords: *Women Entrepreneurship, Self-help groups, Micro finance, empowerment, financial independence.*

TECHNOLOGY AND DIGITAL INTERVENTION IN LIBRARY AND INFORMATION CENTRES

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This research focuses on various technologies adopted in Library and Information centres from whole courtiers. The primary objective is to decrease the time that lapses between searching the documents and actual reading. Thus, a mechanism by which these bridges are often narrowed down is of paramount importance as access to information is expensive especially to those with limited internet access. The research focuses on the implementation of new technologies in the Library system. Based on this study the researcher tried to make library professionals aware of these emerging technologies and assist them in taking some initiatives for using appropriate application in libraries.

Keywords: *Big Data, Mobile Apps, IoT, RFID, Robotics Technologies, Information Centres.*

A COMPARATIVE STUDY ON MAJOR BENEFITS, CHALLENGES AND STRATEGIES FOR MANAGING INVESTMENT AND SPENDING PATTERN DURING PRE AND POST PANDEMIC

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The entire world faced a drastic situation where it had come to a halt in situation which was beyond imagination due to the pandemic that the world faced. India being a densely populated country with insufficient medical facilities was left with no option but to follow the policy of lockdown. The complete and partial lock down that the economy faced affected both sides of business - demand and supply. Likewise, there are a number of sectors like Aviation, Real Estate, Tourism, Education, Automobiles etc., which did not do good. Therefore, the economic impact of COVID-19 is on variables like growth, international trade, financial markets, unemployment, income, poverty and many more. Many of them lost jobs, pay cuts, and had to manage families by utilising their savings. While financial planning allows individuals to meet life goals by prudent management of money and finances, it may be observed that learning to manage money wisely could be the first step towards the bigger goal. Both these areas call for ascertaining the need, efficiency, and time frame before getting started. Hence the researchers would like to enumerate the various strategies that can be implemented by every person by dividing their income into three parts – Savings, Expenditure and Investments. The study is based on primary data that was collected from the salaried and business class to ascertain their pattern of savings and investments. The major findings of the study suggested that most of the savings undertaken by people are towards their children for their education, marriage and medical emergencies. They do not want to take up the risk of investment with the fear of loss.

Key words: *Investment, Spending pattern, Financial Planning, Savings, Expenditure, Investment.*

SUSCEPTIBILITY OF CANCER PATIENTS TO CORONAVIRUS

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The COVID – 19 epidemic in the year 2020 has been considered as one of the most devastating disease. The first outbreak of the COVID – 19 was originated in Wuhan, China in the year 2019 and is spread throughout the world. The virus strain called SARS CoV – 2 is responsible to cause the deadly disease and the symptoms range from respiratory problem to massive death. These deadly strains have spike proteins associated to them, these strains in turn bind with the ACE - 2 receptor. Through this the strain invades the host body and brings the malfunctioning of various organs and finally leading to death. Surprisingly, it is mostly affecting the Homo sapiens and not affecting in any other living species as it is a zoonotic virus. The Coronavirus spreads primarily through the droplets released from an infected patient through cough, sneeze or speech; when a normal host comes in contact with the infected surfaces that might be a chance of getting affected with the mortal strain. However, it majorly affects the less immunogenic patients as they lack the capacity of withstanding the process of replication of the virus strain in-vitro; but in most cases the severity of disease can be associated with any individual due to their age factor or pre-existing diseases / disorder. As innumerable cases are being reported in cancer patients due to the lack of immunogenicity, patients are susceptible to any kind of infections and diseases as they have an immunocompromised defense system. This may be caused due to certain medicine, drugs, chemotherapy, radiations, surgery and also conditions like diabetes, malnutrition etc. This review article describes in brief about the multidisciplinary complications under gone by the cancer patients irrespective of their cancer type during the pandemic.

Keywords: *SARS CoV – 2, ACE - 2 receptor, Homo sapiens, zoonotic virus, immunogenicity.*

IMPACT OF COVID ON MAKE IN INDIA

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The COVID -19 pandemic has turned the world upside down and many richest countries also are facing economic recession phase and India has recorded its lowest figures in the last quarter of the fiscal year. Many MNC companies, manufacturing and supply industries also are struggling to cope up amidst the hard times. Indian Government is taken a few initiatives to encourage and boost the economy through 'Make in India'. The initiative, started by PM Modi in 2015 aims to make India self-reliant. While it is a topic of debate if it has achieved its goal, it is certainly a booster to uplift the economy. A sample of 50 members were chosen from the general public and were asked about their perception about the Make in India initiative on the economy in the post COVID situation. The data has been collected using primary source through questionnaire method and the secondary data is collected from Make in India website.

Keywords: *MNC companies, self-reliant, fiscal year, Make in India, recession.*

TECHNOLOGY ENABLED E-RETAILING AND ITS IMPACT DURING COVID-19 ON ONLINE SHOPPING IN INDIA: A SYSTEMATIC ANALYSIS

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This paper contains a brief description of e-retailing and the technology aspects which affect online shopping. The paper is an analysis of online retail scenario in the country during Covid. It details the expansion of the online retail and particularly apparel retail during the pandemic. Technology available today has played a big part in allowing the customer to shop online while experiencing the satisfaction of an in-store experience. This paper discusses technologies such as recommendation lists, products review, zoom and enlargement features for products, virtual try-on and augmented reality apps which improve OCE (online customer experience) while shopping. All ecommerce sites such as Amazon, Flipkart, Myntra and others are using these technologies to drive online sales by providing enhanced customer experience. This has resulted in increased online sales during the pandemic. The paper is a literature review of some of the technology tools and their impact on e-satisfaction, An exploratory study was also conducted on respondents in Bengaluru with the help of depth interviews to assess the influence of technology on online shopping.

Keywords: *e-retailing, customer experience, virtual try-on's, Online customer experience (OCE), e-satisfaction, Covid-19.*

EFFECT OF MOTIVATION FACTORS ON EMPLOYEE PERFORMANCE DURING PANDEMIC AND ITS IMPLICATION POST PANDEMIC

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Covid-19 pandemic and the consequential lockdowns has not only affected the health of people globally but has also significantly changed the way companies and organisations around the world operate, giving rise to new ways of working which has tremendously affected the lives of employees dependent on these organisations. Employees are expected to work with no guarantee of job security, lowered financial compensations and in remote locations away from offices. This study aims to understand the effect of employees motivational forces on his performance during the pandemic and its significance. It also focuses on how the employees view the strategies adopted by organisations to survive and its effect on their performance. Through convenience sampling method a questionnaire was distributed among employees working for different organisations in different departments. The correlation analysis of the work performance and significance of internal motivational forces while working in pandemic suggest that there is low positive correlation between the variables. It is also found that there is also a low positive correlation between the satisfaction of the employee towards the way the employer has handled the crisis and considering that it is his responsibility to help the organisation navigate through the crisis. There is anxiety and worry in the minds of employees towards their family and their work leading to mental stress. It is necessary for the organisations to adopt effective communication networks and empathetic conversations with the employees to understand and also help them understand the future strategies of the organisations to positively affect their work performance and commitment towards the organisation.

***Keywords**: Pandemic, Stress, Intrinsic Motivation, Extrinsic Motivation, Performance.*

A STUDY ON HOW COVID-19 HAS AFFECTED THE WORKING PATTERNS OF EMPLOYEES BEHAVIOUR FROM ACTUAL WORKPLACE TO WORK FROM HOME

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The outbreak of COVID 19 has created turbulent situation all over the world. The business and economic activities of the globe came to a stagnant position. The imposition of social distancing and lockdown around all places made HR's and Business analysts think of new norms that would make their business sustainable in the economy. The new norms during the pandemic made people to adopt themselves to the new normal environment of business of Working from Home concept. The businesses have implemented the work from home concept wherever possible, in different industry as to ensure that their business is operational in a minimum way. This research paper studies how Work from Home has had an impact on employees/staff working styles in the COVID time with relative variables like ability to maintain balance between personal and professional life and if they are undergoing increased stress which affects the personal life routine. It also analyses the effect on employees behaviour in Pre and Post COVID times. Primary data is collected with the help of questionnaire from employees who are currently working from home during the pandemic. Secondary data is also collected and used for the study. The data collected is analysed with the help of SPSS and MS Excel and the method used to collect primary data is Random Sampling method.

Keywords: *COVID 19, lockdown, pandemic, new normal, work from home, employee behaviour.*

DIGITAL MARKETING: A CATALYST IN FOOD AND BEVERAGE INDUSTRY DURING COVID 19

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Digital marketing is about connecting with the audience and future customers at the right place and the right time. Every citizen of the country has now the leverage of using a device which has an access to the internet. Which makes it easier for marketers to connect with their consumers without having to meet them personally. One of the biggest industries of India, Food and Beverage which includes, restaurants, cafes, food manufactures, catering and food delivery services use the medium of digital marketing to promote and attract consumers to their platforms. The growth of digital marketing can be seen throughout the years. During the period of pandemic, many digital marketers found new ways to connect with their customers by using various campaigns, display/video advertisements and many more tactics. This study focuses on how accessible it is for marketers to influence its future customers by meeting them where they spend the most time on: INTERNET. The sample size for this study is 50, sampling method used is Simple Random Sampling.

Keywords: *Digital marketing, food and beverage, food marketing, internet, customers.*

A STUDY ON IMPACT OF COVID ON SPENDING PATTERNS OF PEOPLE RESIDING IN BENGALURU CITY

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Spending patterns refers to the allocation and expenditure of income based on the needs and desires of people. Covid-19 has impacted almost every aspect of our lives. Many of them had lost their jobs and experienced a salary cut because of the outbreak. Due to this many have limited their spending habits by purchasing only daily essential items. A recent study has shown that people have reduced almost 40% of their overall spending during the pandemic when compared to that of the last year. Most of them have adopted the new normal where they save more and spend less because the financial uncertainty that is getting stronger each day. This study mainly aims at knowing to what extent Covid-19 has affected the spending habits of individuals residing in Bengaluru city and also to determine consumer shifting spending habits towards different category of goods and services before and during the pandemic. The sampling size for the study is 50 and only primary data is collected with the help of a questionnaire from the people residing in the stated city. The collected data will be analysed using SPSS software and the method used to collect data is simple random sampling method.

Keywords: *Spending patterns, essential items, financial uncertainty, pandemic, income.*

A STUDY ON THE IMPACT OF ONLINE TEAM BUILDING AND EMPLOYEE LOYALTY ON ORGANIZATIONAL PRODUCTIVITY DURING THE PANDEMIC

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The road to operational excellence in a company depends upon how an organization leads its workforce with managing teams, transformation for a revolution and learning through it in every new step. It provides a clear picture of the organization's performance on the whole. During this process it is also easy for the valuers to assess the performance of an employee and his/her loyalty towards the ongoing process. The pandemic has directly had an impact on productivity since it required people to be stuck to their homes working for hours together and it also influenced the employees to be stranded in their homes even if they had virtual communication and it somehow affects the motivation and major part of their creativity. This study is based on analyzing the gap between management levels that may be formed or that brings down the motivation of the employees that affects productivity of an organization due to work from home during the pandemic. The study was made with 50 respondents on the aspects of effectiveness of online team building, productivity before and after the pandemic and the strategies to keep up the productivity.

***Keywords**: KPI, productivity, employee loyalty, team building, performance, work from home, pandemic, organizational excellence.*

IMPACT OF COVID-19 ON DIGITAL TRANSFORMATION IN SMALL BUSINESSES

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Covid-19 had many outbreaks which led to many countries going in for cum adopting lockdown. In India many sectors have had an impact and most of the small business sectors did get affected. And due to rampant of the corona virus the business owners are finding difficulty to stay in the platform of traditional marketing, and to go about in new digital marketing to sell their products and services. A descriptive research was conducted on a sample size of 33, while using the Likert scale to examine whether the digital transformation has been adopted by the small businesses, the study was concentrated in the city of Bengaluru.

Keywords: *COVID-19, impact, digitalize, business, transformation, marketing, small enterprises.*

A STUDY ON PROBLEMS FACED BY TEACHERS DURING ONLINE TEACHING

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Online teaching is the process of educating others via the internet. Various methods can be used, such as one-on-one video calls, group video calls and webinars. The pandemic has affected the educational system worldwide, leading to the near-total closures of schools. Online learning has become a critical lifeline for education, as institutions seek to minimize the potential for community transmission. Many schools across the world began conducting classes via videotelephony software such as Zoom, Microsoft teams and other platforms. Technology can enable teachers and students to access specialized materials well beyond textbooks, in multiple formats and in ways that can bridge time and space. This study is mainly undertaken to understand the problems faced by secondary school teachers during online teaching, to find out if this online teaching has affected the mental health of the teacher and also to check if the gender of the teacher is affecting their online teaching. The primary data will be collected through circulating the questionnaire to the secondary school teachers and the sample size is 30. Method used to collect data is simple random sampling method. SPSS software or MS Excel will be used to analyze the primary data collected from 30 secondary school teachers through questionnaire method.

Keywords: *Online teaching, secondary school teachers, covid-19, Mental health*

A STUDY ON IMPACT OF COVID-19 ON AIRLINE INDUSTRY ASSOCIATED WITH PASSENGER AIR TRAFFIC, REVENUE AND EMPLOYMENT IN INDIA.

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Indian airlines has traditionally grown hand-in-hand with economic growth and has emerged to be a fast growing industry. After the outbreak of Covid-19, which led to freezing flight operations all over the globe where there was a global slump in travel demand and reduction in flight capacity resulted in drastic losses for the airline industry. This paper talks about the possible impact on airline industry in India during the pandemic and various factors which influences the same. This study primarily focuses on passenger air traffic, revenue and employment. Through convenient sampling method a group of employees working in different airline companies was surveyed to understand the effects of covid-19 on the key factors of the industry. The overall analysis of findings from this study suggests that there was immense impact on the industry in terms of fall in revenue, passenger traffic and employment. Recovery in air travel is expected to be gradual once the Covid-19 threat diminishes but once vaccine is invented and easily available in the market then people may start traveling for business trips initially, followed by tourism, personal trips, one cannot predict what figure and what things to be changed in new normal but expected to take 18 to 20 months to recover.

Keywords: *Airline, Covid-19, Revenue, Employment, Passenger air traffic, India, travel industry.*

A STUDY ON IMPACT OF COVID ON E-COMMERCE SECTOR WITH REFERENCE TO BENGALURU CITY

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E-commerce has made life simpler for many individuals, one can get goods and services at their doorstep, which cuts on cost and time. It is observed that there is massive growth in the e-commerce sector as people are getting more knowledgeable about the applications available and the easy access to internet has made it possible, even during the pandemic situations. Covid-19, one of the deadliest viruses has created havoc across the world. This contagious disease which was first detected in Wuhan started spreading all over the world. This study aims to analyse how the recent pandemic has affected the e-commerce sector. The primary data is collected from the general public residing in Bangalore city as well as secondary data from various sources. The method used to collect data is random sampling method using a questionnaire and the sample size is 50. The data collected will be analysed using the statistical software SPSS and Microsoft Excel and using the statistical tools such as descriptive statistics and hypothesis testing.

Keywords: *E-commerce, pandemic, havoc, contagious, massive, growth.*

INTRAPRENEURSHIP - A MYTH

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Intrapreneurs' are driven by their entrepreneurial endeavours, but they prefer to work within the safe confines of the organisation, rather than working individually. For decades, organisations have sought innovation through the idea of "intrapreneurship". Intrapreneur is often more a myth than a reality. Organisation's need a company-wide innovation management system, designed to encourage innovation at all levels. Innovation should be recognised as a permanent function of a successful company. If the companies wants to innovate consistently, they need dedicated innovative professionals to carry out the functions of development and discovery. But this innovation division should not be isolated from the rest of the business, which leads to limited success, because they are disconnected from a larger system. Organisations need to create innovation careers rather than just creating innovative jobs. Studies have revealed that, employees are the organisation's most cherished and innovation asset. While the myth of the intrapreneur is certainly attractive, relying on just a few talented individuals to come up with innovative ideas is not an effective strategy for most organisations. Organisation's need a strategic plan for institutionalising and professionalising innovation across all the departments. This acts as the only way for nurturing innovations, needed for the future health of the business.

Keywords: *Myth, Intrapreneurship. Organisation, Innovation, Management, Entrepreneur.*

IMPACT OF COVID19 ON THE FASHION INDUSTRY

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The ongoing pandemic of COVID-19 has directly and indirectly impacted each and every aspect of life across the globe. There is not a single industry which has not seen its share of drop in bottom line due to lockdowns and restrictions by the government in an attempt to stop the spread of this disease; (i.e.) fashion industry, which has also been significantly impacted by this global pandemic is not among the first few industries which come to mind when one thinks of the ill effects of Covid-19. The impact of this pandemic on fashion industry was immediately seen as soon as the closure of non-essential retail was announced by all the state governments (and central). While evaluating different aspects of the industry we discover the impact in four different aspects viz. Impact on actual business, Impact on the people of fashion, Impact on suppliers and Impact on environment. In addition to the devastating repercussions of the pandemic & the havoc it has unleased on many people who are part of the industry, this paper also tries to shed light on the immediate responses taken by the fashion industry to tackle this enormous challenge. The study attempts to explore the possibilities of the shortfall in the earlier strategies of the industry and how the world over is trying to cope with the 'new normal'.

Keywords: *Covid19, Fashion Industry, Sustainable Fashion, Artisans, Fashion Supply Chain.*

A STUDY ON THE EFFECT OF COVID-19 PANDEMIC AMONG ENTREPRENEURS DOING ONLINE BUSINESS IN BENGALURU.

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An entrepreneur, a person who converts an opportunity into action by investing their time, money, skills and effort to the process of getting their product or service into the market place and also to meet their targets. They are usually said to be optimistic, dynamic and risk takers, with this context COVID-19 is a human health pandemic that has significantly affected the economy and the society through lockdown worldwide to control the spread of the disease, which created a huge impact on entrepreneurs providing unique problems and opportunities in the market due to the restrictions on travel, mobility social distancing and public gatherings. The purpose of this study is to analyze the effect of covid-19 pandemic among entrepreneurs doing online business in Bengaluru city catering to customer needs in daily life, which would help them access from their comforts. The sample size consists of 20 entrepreneurs across the city with wide range of online business sector.

***Keywords**: Covid-19, Entrepreneurs, Online Business, Opportunities, Bengaluru.*

A STUDY ON IMPACT OF COVID 19 ON RESTAURANTS

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Eating out of home has become more established nowadays. Busy lifestyle and much more pressure on their work has reduced the time devoted for having food. On the other hand, it is not easy to plan and prepare for a meal daily and it requires lot of time to hang around all day in the market. Fewer people only know the basic cooking techniques; as a result they prefer to have more snacks or having quick and easy meals rather than cooking at home. The spread of the coronavirus across India has had a lethal effect on human lives, livelihoods and the economy. While entirely appropriate, this prolonged government imposed shutdown has crushed the restaurant industry. India's organised dine-in restaurants are on course for a 40-50% cut in revenue this financial year because of the disruptions caused by COVID-19 pandemic, which have led to outlet closures, job cuts and trickle-down effect on the food supply chain. To understand the impact of COVID 19 on restaurants, a study was conducted among individuals in Coimbatore city among various age groups. This study aims to analyse the frequency of dining out after the impact of COVID 19 and the factors influencing them. The results of this study will help to understand the reasons for dining out during COVID 19 pandemic. It will also give an insight on the frequency of dining out.

Keywords: *Pandemic, Dining out, Lockdown, Factors, Restaurants, Livelihood.*

EFFECT OF COVID-19 ON PHARMACEUTICAL INDUSTRY

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Medicines and health products are important for addressing health problems and improve quality of lives. They form an indispensable component of health systems in the prevention, diagnosis, and treatment of disease and in alleviating disability and functional deficiency. Drug education enables children, youth and adults to develop the required knowledge, skills, and attitudes to appreciate the benefits of living healthy, promote responsibility towards the use of drugs and relate these to their own actions and those of others. The need for new drugs is obvious for old and new infections, as well as for the chronic diseases and there is enormous potential of new drugs. A drug is a chemical that interacts with proteins in the body to affect a physiological function. This is the general idea behind all medicine. Once these chemicals are absorbed into the systemic circulation they bind with certain proteins and this changes the functioning of the cell slightly. For example, anticancer drugs bind to proteins on the surface of cancer cells, which stimulates the cells to die. In this case cell death is the physiological action of the drug. No drugs are specific to interacting with just one type of cell or one type of protein and this is what causes side effects. Using an anticancer drug as an example, the medication works by binding to very rapidly dividing cells, such as cancer cells, however hair cells are also rapidly dividing and that is why one of the side effects of anticancer drugs is hair loss. With all these stated constraints one can understand the need and importance of drugs which was impacted due to the COVID-19 pandemic on the people those who rely on drugs.

***Keyword**: Pandemic, Health products, Medicines, Pharmacy, Physiological, Side effects.*

A STUDY ON IMPACT OF COVID -19 ON NEWSPAPER INDUSTRY IN COIMBATORE CITY

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As the number of COVID-19 patients increased, a lockdown was declared by the Central and State Governments. This hit the country's print media. As mentioned, the lockdown had an adverse impact on production of newspapers and magazines. There were also problems with the distribution system. As a result, the print media across the country was disrupted. Fear of the corona virus spreading through newspapers was expressed on social media. Many readers stopped handling newspapers. Transportation of newspapers was also shut down due to the lockdown. In this unfavourable situation, the management had no choice but to stop the production of newspapers. Indian readers are much habituated to newspapers. Most of the Indian readers trust the information coming from the newspapers. Although information is available through electronic and web media, the credibility of print media in the country is still highly regarded. To understand the impact of COVID 19 on newspaper, a study was conducted among individuals in Coimbatore city among various age groups. This study aims to analyse the reading and buying behaviour of individuals during pandemic. It also analyses the user's preference towards E – versions of newspaper. The results of this study will help to understand the impact of COVID19 on newspaper and also about E-Versions.

Keywords: *Covid19, Newspaper, Lockdown, E-Versions, Readers, Buying behaviour.*

ARTIFICIAL INTELLIGENCE HIRING SYSTEM VS CONVENTIONAL RECRUITMENT SYSTEM

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Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving. Each new tool that evolves helps machine learning developers in taking lesser time on prediction problems. AI is changing our way of thinking, which means we started thinking of various problems as a prediction problem. We were already using autonomous vehicles in controlled environment like factories, where the vehicle could be programmed by using programming conditions. Here is a major question: Will AI affect companies' strategy and business models? If you think of AI as a prediction tool, which helps you to make some decision, it may not clear how it will affect pure strategy, because it is just another tool to help decision-making. Recruitment is the complete procedure of drawing in, shortlisting, selecting and connecting with appropriate possibility for employment inside an association. A good recruitment process can reduce the time involved in, searching, interviewing and recruiting the candidate, it also reduces your costs for training the candidate. This study aims at understanding the opinions of respondents in terms of AI and conventional system of recruitment. The responses help in estimating the overall views of respondents on the shift from conventional to modern practices. Responses of the questionnaire is further used to analyse the data and reach conclusion.

Keywords: *Artificial Intelligence, cost effective, prediction tool, recruitment.*

FUTURE OF WORK IN INDUSTRIAL REVOLUTION 4.0 – THE GIG ECONOMY- TRENDS, POTENTIAL AND CHALLENGES

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In today's fast-paced world with the advent of smartphone technology how people live, work, and pass time has completely changed. Social media networks have shrunk a hitherto disconnected world with hyper-connectivity providing enough scope for people to engage in activities through the operation of the Gigs that connect end-users with service providers at the tap of a button or a missed call. The outgrowth of Industrial Revolution 4.0 has been the emergence of the Gig Economy resulting in a growing number of freelancers and workers increasing in the economy. This is also coupled with work choices reflecting flexible and meaningful work, fluctuating economic environment, and the millennial workforce. The conceptual study analyses the emergence of the Gig Economy as a result of the Industrial Revolution 4.0, gives a snapshot of Gigs as a new form of the workforce, looks into the trends and developments across US and India, studies the problems and issues associated with Gig workers.

Keywords: *Industrial Revolution 4.0, Gig Economy, Temporary workers, Freelancer Workforce.*

A STUDY ON THE IMPACT OF COVID-19 PANDEMIC ON MASS MEDIA

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The outbreak of COVID 19 and sudden imposition of nationwide lockdown has resulted in a shift of media usage among individuals. This paper aims to study the impact of COVID-19 on Media Industry (Print media, Social media, Broadcast media, and Digital media) and to understand the influence of mass media on lives of individuals during the pandemic. This research paper is quantitative in nature. The data collected in this research paper was collected through primary and secondary sources. For this study, the method used to collect the data was Simple random sampling method, where the size of the sample was 54 respondents, comprising of age group between 18 to 41 years and above, from varied occupational backgrounds. The results show that mass media emanated a drastic shift more likely towards Social media and need for abundant content on Electronic media, which negatively affected the print media that has steadily stepped out of tract over time. During the pandemic, the individual usage of media platforms has increased due to the phases of nationwide lockdown, boredom, entertainment, purpose of news consumption etc. Majorly the plunge in print media crept in to avert the novel disease by reducing the consumption of any sort of print presented content during the phase was traced and instead, individuals largely consumed information from social media & digital media.

***Keywords**: Media Industry, Print Media, Broadcast Media, Social Media, Digital Media, Pandemic, Electronic Media, Entertainment, News Consumption.*

THE COVID 19 EPOCH, HOME, BUT AWAY FROM HOME

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The concept of 'Work from Home' which was earlier considered as a detour from normal routine – travelling to work, has now become the new normal for many professionals, especially in the case of corporate employees. The organizations which were earlier not acknowledging WFH option, have now made it an official mandate. Companies are providing home-office 'allowances' to make the transition smoother for their employees. This paper attempts to deduce the experience of professionals working from home when compared to those working from office. The study found that although many employees stayed at home or returned to their respective hometowns, they were unable to spend adequate time with their family. Professionals at all levels from Junior Analysts to Senior Partners of various firms expressed their concern about the long hours they spend working amid pandemic. In addition to this, willingness to work from home also is dependent on the presence of children at home, comfortable space to work, quiet environment to attend calls or focus on work, frequency of power shortage and good internet connectivity. Most of the professionals believed that although they were provided with the necessary facilities to work from home and saved considerable amount of money and time traveling to and from office. The sense of work life balance seemed to be fading. They did not prefer this lifestyle as they were unable to spend quality time with their family or take those mini coffee breaks to rejuvenate, as the companies use various software's to monitor their login status throughout the day. The whole circumstance gave them a sense of being away from home, while they were at home.

Keywords: *WFH, allowances, lifestyle, professionals, organisations, transition.*