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Conference Proceedings

4th International Conference 7th to 9th April 2022

Building Resilient Organizations

IMPACT OF CURRENT EVENTS
ON THE FUTURE OF BUSINESS

Editors

Dr. Falguni H. Pandya
Dr. Sheelam Jain
Mrs. Niharika Atchyutuni

Publication Partner



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About the Conference

The world currently is in the mood to bounce back and rebuild itself. Humanity witnessed a pandemic of an apocalyptic proportion that was unprecedented and unimaginable by any standards. It showed us how fragile and vulnerable our systems had been. The message was clear and loud, to build strong and resilient systems that can withstand the test of time. Organizations and governance mechanisms should be robust enough to survive catastrophes of comparable magnitude, and still thrive. Subsequently, policy makers, economists, academicians, and other think tanks had to revamp their perspectives. While technology has emerged as a potent weapon, we need to do a lot more to build tougher organization systems and stronger economies.

What should be the stratagem for the future?

We witnessed the impact of the pandemic across various sectors like businesses, education, healthcare, governance etc. Establishments however large and professionally managed, had to learn new lessons to be agile in adapting to the new normal. Companies, big and small, had to innovate and adapt to match the mercurial events. It is by now apparent to all stakeholders that anticipation, innovation, adaptation and resilience are the ‘mantras’ for sustainability.

As the adage reads, ‘when the going gets tough, the tough gets going’ only those who have seasoned from man-made and natural calamities can endure. Organizations should improve the quality and pace of decision making by employing technology and data for the process. Moreover, they should look for innovative ways to accelerate the scope and scale of their business. Furthermore, they should reassess their priorities and focus on building businesses that contribute to a sustainable world.

To conclude, how can we build organizations that will endure predicaments both, natural as well as man-made?

This conference is aimed at contemplating and reflecting on future course of action in this context.

Editors

Dr. Falguni H Pandya
Dr. Sheelam Jain
Mrs. Niharika Atchyutuni

About Vignana Jyothi Institute of Management



VJIM, Hyderabad, a premier B-School, established in 1993, offers quality management education programs. It is approved by AICTE, accredited by NBA and rated National “A” by CRISIL. VJIM aims at grooming professional managers by providing learning opportunities centred on the stipulations of the industry. The cornerstone for this initiative: ‘delivering education modelled after international standards, steeped in Indian values,’ is facilitated by qualified faculty members with academic, industry and research expertise, and ably mentored by the Governing Council members. The institution enjoys 2000+ alumni in the corporate and entrepreneurship with 200+ students graduating annually. The faculty espouse innovative pedagogical tools and comprehensive research paradigms to deliver the curated content that adheres the graduates alacritous with the industry. Research at VJIM focuses on providing pragmatic solutions to tangible business predicaments and aims at associating conceptual erudition with the application dynamics of the industry. VJIM strives to partake in research with which the business world connects. Innovation and market relevance have been the VJIM’s hall mark.

About AMDISA

Supported by



AMDISA - *Association of Management Development Institutions* in South Asia is a network of Management Education and Management Development Institutions in South Asia. It has 303 members. Its mission is to “Promote management education and management development activities in South Asia, taking into account the economic, social and cultural context of the Region, with the firm dedication to world-wide exchange of experience and ideas in the fields concerned.”

AMDISA is the only Association which networks management development institutions across the eight South Asian Nations through exchanging information, facilitating inter-country research initiatives, conducting regional conferences, workshops, colloquia and programmes, and thereby providing a forum for interaction among academics and business leaders.

AMDISA launched the global benchmark quality assurance and accreditation system for Business Schools - SAQS. SAQS is the International Quality Assurance Program run by AMDISA as a service to the management education profession worldwide. SAQS emerged in an EFMD - AMDISA cooperation through a European Union funded Asia - Link project in 2003-04. It is inspired by EFMD's EQUIS criteria and is designed as an international accreditation system. It is a globally benchmarked system for mentoring, quality improvement, quality assurance and accreditation. SAQS accreditation processes lead to improvement through highlighting the need to meet internationally accepted quality standards. SAQS Accredited Quality Label is a recognition to the institution's commitment to Quality and Quality Assurance through continuous improvement. SAQS accreditation is institutional. Institution being defined as the organisational unit providing business and management education. So far 31 schools have been granted Accreditation - 1 from Bangladesh, 26 from India and 4 from Pakistan; and 10 schools have been granted Re-Accreditation - 9 from India and 1 from Pakistan. More schools in the region are expected to seek the academic guidance and strategic audit provided by SAQS in the near future.

AMDISA publishes a Newsletter three times a year and the South Asian Journal of Management, a quarterly double blind refereed journal. The South Asian Journal of Management (SAJM) is a prestigious publication and is indexed by two internationally acclaimed database services, EBSCO and ProQuest.

Message from the Director

Organizational resilience is all about bringing about a lasting shift in the way businesses are designed and managed so that they can cope better with future crises. The post-pandemic financial crisis has shown that massive efforts are needed to ensure that organizations can continue to operate in the face of adversity. In the aftermath of the 2020 pandemic and global economic crisis, nations and organizations throughout the world have realised their vulnerability. Changes such as these bring significant opportunities as well as risks. In response, organizations must take deliberate actions to prioritize resilience and not just focus on efficiency if they want to thrive and survive in the world of continual turbulence.



Organizations may take different approaches simultaneously to build resilience, but a successful strategy would be the one that will likely blend three pivotal factors namely, workforce resilience, operational resilience, and digital resilience. Businesses need responsive workforce i.e., employees who can sense and respond to changing customer needs and are able to design their work around doing that. Also, ability to do collaborative, comprehensive, and continuous planning and execution is crucial to build resilient systems across businesses. Lastly, adopting and managing digital technologies will be critical to business resilience in times of disruptions and innovations.

The paradigm shift from sustainable to resilient systems will be a long journey, although there is substantial guidance that can be gained from successes & failures, systems & strategies, risks, and opportunities experienced by different businesses across the world. Against this backdrop, a three-day International Conference was held at VJIM, Hyderabad from 7 to 9 April 2022 to provide a forum to discuss, deliberate and deliver relevant research, lessons and insights around building resilient organizations. The proceedings is an attempt to bring together some selected reviews, promising ideas, insightful analyses and original and unpublished research work that was presented during the conference.

Dr. Ch. S. Durga Prasad
Director, VJIM Hyderabad

Message from the Conference Team

Businesses across the globe have to adapt to contingencies to persevere. The main theme of the VJIM 4th International Conference: “Impact of Current Events on the Future of Business” focuses on the ramifications of the Covid-19 pandemic as well as other challenges such as wars, monetary crises, on human life, businesses, economies, and governance globally.

The resolve of the sub theme of the conference: ‘Building resilient organizations’ is to propitiate the victims as well as the vanquished. Ever since humankind initiated exchanging goods and services, beginning with the barter system and adopting productive business imperatives later on, there was a dire necessity for businesses to evolve sustainable as well as remunerative stratagems not only to overcome competition but also weather impediments.

Long standing establishments that have subsisted many a tribulation have to reconfigure their business plans to perdure a contagion unprecedented in the near history. Businesses such as travel, hospitality, retail markets, education, supply chains etc. faced the brunt of the buffet. Consequently, industry strategists, business pundits, and academic gurus have to reconnoitre efficacious approaches and strategies for organizations to sustain and subsist future cataclysms.

Economic upheavals, vulnerable governances, digital disruptions, human factors such as ageing population, scarcity of skilled labour, climate change, digitalization, automation, AI, ML, supply chain disruptions, energy crises etc. are all inevitable entities. Any nation or organization, big or small, needs to foresee these corporealities and redesign sustainable strategies. Just like big organizations, MSMEs also need powerful and robust supply chains to operate grow and transform their businesses. An efficient supply chain is pivotal for better inventory turnaround, optimization of business resources and enhancing speed and agility of the overall system.

Cognizant of the feedback of the Indian industry, India’s leading business school think tanks, the academic curriculum developers, are contemplating futuristic courses that will prepare the students on how to handle attrition, human resources in start-ups, competing in times of AI, ML and facets of healthcare management and blockchain. To achieve this objective, in the words of IIM Kozhikode director Debashish Chatterjee, ‘Discipline marries domain expertise.’

VJIM, an innovation driven business school, has been a harbinger of business paradigms that are pioneering and pragmatic for the industry. The 4th VJIM International Conference resonates our endeavour to build resilient organizations that will prevail both natural as well as man-made adversities.

Dr. Ch. S. Durga Prasad, Convener

Dr. Falguni H. Pandya, Editor & Co-Convener

Dr. Sheelam Jain, Editor & Co-Convener

Mrs. Niharika Atchyutuni, Editor & Coordinator

Dr. Vishal Kutchu, Coordinator

Mr. N. Srinivas Chakravarthy, Coordinator

Mr. Raghu Mantha, Coordinator

Preface

Humanity has been enduring cataclysms as well as propitiations from time immemorial. The tech animated 21st century world witnessed an adventitious adversary that wreaked havoc not only on human existence, but also on economies, businesses and governance. However, the indefatigable human fortitude de novo endured the Covid-19 juggernaut. To quote the Augustan poet Virgil: “Come what may, all bad fortune is to be conquered by endurance.”

In this milieu, the VJIM 4th International Conference 2022 has donned the title: “Impact of Current Events on the Future of Business.” The crux of the conference is: “Building Resilient Organizations.”

Organizations, however successful in innovating technologies, building brand image, customer base, market share etc. cannot subsist on their past splendours. The Covid-19 pandemic, an epiphany to the world during the first quarter of the 21st century, has exposed the vulnerability of superpowers, conglomerates and affluent economies. The writing on the wall by Charles Darwin is apparent: “It’s not the strongest or the most intelligent who will survive but those who can best manage change.”

Beyond a shadow of doubt, businesses in market economies will face competition, economic and political upheavals, natural and man-made catastrophes such as wars, pandemics, digital disruptions, as well as environmental tribulations. If our businesses have to weather these travails, we need to adopt the ‘triple R’ formulae: renovate, reconfigure, and resile. In 2022, enterprises will have to quickly reconfigure business structures and capabilities based on new technologies. With IT innovations redefining the workplace and hybrid workplaces continuing to gain momentum, organisations will further experiment with ingenious and new-fangled approaches.

In rapidly changing environments, one rule of thumb applies: If you don't adapt, you don't perdure. In the words of Psychology professor Salvatore R. Maddi: “Resilience or hardiness is the ability to adapt to new circumstances when life presents the unpredictable.”

This book is motivated by the yearning to explore sectoral and organizational experiences in the pursuit of anticipating, innovating and adapting during the unpredictable disruptions. The book, therefore, presents theoretical and research based practices related to the, challenges, opportunities and strategies for building resilient organizations.

Editors

Dr. Falguni H Pandya

Dr. Sheelam Jain

Mrs. Niharika Atchyutuni

Conference Team

❖ Dr. Ch. S. Durga Prasad, Director, VJIM

Dr. Ch. S. Durga Prasad has 32 years of experience in Academia, Industry and Research with sound knowledge of Cross-Cultural Management, Global Mindset, Entrepreneurship, Training & Development, Leadership, Organisational Behaviour, Human Resource Outsourcing and Psychometric Testing. He is an accomplished administrator with a track record of enhancing the institute's performance and developing operational policies, systems & controls, motivational schemes, and educational standards. He has to his credit research publications in reputed journals, paper presentations in National and International Conferences and book publications. Six research scholars have been awarded Ph.D under his guidance. He has organized international and national conferences, MDPs, FDPs, workshops and completed many corporate projects. He has designed & conducted several customised training programmes geared towards optimising knowledge and operational efficiencies of organisations.



❖ Dr. Falguni H Pandya, Sr. Assistant Professor, VJIM

Dr. Falguni Pandya has total 13 years of work experience as an academican and researcher. Her teaching and research areas are Investment Analysis and Portfolio Management, Derivatives, International Financial Management, Bond valuation and Corporate Finance and Economics. She has to her credit 36 publications in national and international journals of repute. She conducted workshops for research methodology and hands on experience in SPSS for PG students. She has organized national and international conferences, expert lectures, and seminars. She received best research paper awards twice and has authored a book, titled, “Security Analysis and Portfolio Management”, published by Jaico Publishing House.



❖ Dr. Sheelam Jain, Associate Professor (HR & OB), VJIM

Dr. Sheelam Jain has more than 19 years of experience in academics, research and industry. Her research interests in the field of HRM practices, organizational citizenship behaviour, workplace attitudes, mentoring, career development and employability skills facilitated her to publish 19 research publications in various journals (ABDC, ABS, Scopus indexed) and paper presentations in national and international conferences. She contributed as an Article Editor and Reviewer for SAGE Open and Reviewer for Journal Organizacija (Scopus). Her corporate exposure includes seven years of experience in the field of talent acquisition, performance management, training and development in IT industry and management consultancy. She is an All India topper of HRD course, gold medallist of Enhancing Soft Skills and Personality course and silver medallist for Train the Trainer course organized by IITs.



Conference Team

❖ Ms. Niharika Atchyutuni, Assistant Professor (HRM & OB), VJIM

Ms. Niharika Atchyutuni has a blended experience of 16 years across industry and academics. An alumna of MDI Gurgaon, she has chosen HR analytics as her research area. Her other topics of interest include digital transformation in organizations, sustainability, and happiness. She is a reviewer for an ABDC- B journal, Evidence Based HRM. She has research publications in reputed journals and has presented papers in national and international conferences. She has worked on consultancy projects in the MSME sector and has conducted management development programmes for reputed organizations. She is responsible for student training and placement preparation in her current institute.



❖ Mr. Nekkanti Srinivas Chakravarthy, Assistant Professor, Business Communication, VJIM

Mr. N. Srinivas Chakravarthy an MA in English & Linguistics and an MPhil in Applied Linguistics, is a seasoned professional with over 34 years of extensive experience in teaching English Language, Linguistics, (ESP-English for Specific Purposes- Business, Technical, Medical and Legal), British, American and Commonwealth Literature, as well as soft skills and CRT programmes in India and globally. In addition, he is a certified trainer for IELTS, TOEFL, SAT, GRE and GMAT by the Princeton Review, New Jersey, USA, American TESOL, Florida, USA and Cambridge English Language Assessment (CELA) U.K.



❖ Dr. Vishal Kutchu, Sr. Assistant Professor, VJIM

Dr. Vishal Kutchu has over 20 years of teaching experience. He teaches Financial Accounting, Corporate Finance, Financial Statements Analysis, Enterprise Valuation and Working Capital Management. He is also a visiting faculty at MANAGE, Hyderabad and NIAM, Jaipur. He has published papers in national journals and presented papers in national and international conferences. His current teaching interests includes using python for financial analysis and research interests include event studies and also case studies especially in accounting and enterprise valuation.



❖ Mr. Mantha Raghu, Librarian, VJIM

Mr. Raghu Mantha has twenty-two years of professional experience in handling academic libraries. He has submitted his Ph.D. thesis in the field of LIS. He has strong experience in handling the academic libraries and processes skills. In using library systems and Digital Libraries. He has also published two books' chapters published by IGI Global Publications, USA. He was Coordinator for a workshop on Transforming Libraries to Learning Resource Centres: Innovative Solutions for Academic Libraries. Earlier to that he has organized a workshop on DELNET Resources, services, and facilities & KOHA: An Open Sources at VJIM. He has published articles and presented papers in various Seminars and Conferences. Out of his passion he has done his executive program in Digital marketing. He is also Asst. Editor of Gavesana Journal of Management, VJIM's in-house journal.



Reviewer Board

❖ **Dr. Ramakrishna Yanamandra**, is an Associate Dean of Undergraduate Program and an Associate Professor in the School of Business of Skyline University College, Sharjah, UAE. He is a PhD in Supply Chain Management from Jawaharlal Nehru Technological University (JNTU), Hyderabad, India. His teaching, research and consultancy areas include Logistics and Supply Chain Management, Operations Management, Lean Management and Quality Management. He has presented in reputed international conferences and published articles in leading journals.



❖ **Dr. M. Jayasree** is Professor at GITAM School of Business GITAM (Deemed to be University) Hyderabad. A doctorate from Andhra University She has over 25 years of teaching experience in the area of Finance. She has research articles published in National and International journals which include ABDC, ABS, Scopus indexed and with Sage publications. Four research scholars have been awarded Ph.D under her guidance at GITAM HBS. She has been a chairperson at several international conferences and reviewer for ABDC listed journals. She is a case author and her cases are published with IVEY which are also listed on the Harvard Business Review. Her cases are subscribed across eight countries and also by IIM's in India.



❖ **Dr. N. Padmaja** is an Associate Professor in Statistics and Business Analytics. With more than 25 years of experience in teaching Applied Statistics, Business Research Methods, and Business analytics to post-graduate students. Leading various consulting and research assignments, Dr. Padmaja is actively involved in accreditation activities of the institute. Her research interest is in the field of Applied Statistics in Management Studies and Image Compression.



❖ **Dr. C. Madhavaiah** is Associate Professor Department of Management Pondicherry University. He has over 19 years of teaching experience in the area of Marketing Management and all sub-disciplines of Marketing, Business Research Methods, Management Information Systems, and Life Insurance. His research interests include Measuring service quality in various service contexts and customer satisfaction, Relationship marketing, new technology adoption behaviour of consumers, consumer misbehaviour, transformative consumer research (in healthcare services). He has over 70 research articles published in National and International journals which include Emerald, Inderscience, Sage, EBSCO, etc. and more than 60 paper presentations in National and International Conferences and one book publication. His six research scholars have been awarded Ph.D and five are in-progress. He has organised many management meets, national level conference and research methodology workshops.



Reviewer Board

❖ **Dr. Dharmendra Mehta** is Senior Faculty, and Former Director, in the FMS, Pt. Jawaharlal Nehru Institute of Bus. Mgt. Vikram University, Ujjain and Former HoD., S.S. in Commerce, Vikram University Ujjain. He has about 25 Years of PG Teaching, Research and Administrative Experience. He has published and presented research articles and papers in many reputed journals and conferences and has undergone STCs/FDPs/PDPs/and awarded COAs from World's Top Notch Academic institutions like IIT-Bombay, IIT Roorkee, BHU-Varanasi. He has earlier contributed in the Indian Journal of Accounting as an Associate Editor. Dr.Mehta has also authored / Co-edited a few books in the areas of Communication Skills, Knowledge Management, and IPR.



❖ **Dr. Jigna Trivedi** is a Professor in the Management Department at National Institute of Cooperative Management-NICM-SJPI, Gandhinagar. She is an alumna of IIMA-Faculty Development Programme-in Management (FDPM). She is a recognized guide at Gujarat Technological University (GTU), Ahmedabad. Under her able guidance, one of the candidates had been recently awarded her doctoral degree in Management from GTU, and five are pursuing the work. Her teaching interest areas consist of Accounting for Managers, Cost Accounting for Managers, Corporate Taxation, and Mergers and Acquisitions and her research interest consists of Micro Venture Capital Finance, Accounting and Finance, Entrepreneurship, and General Management.



❖ **Dr. Nityasundar Nanda** is Sr. Assistant Professor, Department of Finance, VJIM. An Economics graduate from Utkal University, Odisha, he completed his MBA in Finance from Indian Institute of Finance, Delhi in 2001. He has completed his PhD in Finance area with the title 'The Impact of Rating and Grading on Investment Decision: A Case study of selected Indian corporate' from Ravenshaw University. He worked in various B-Schools and University in Odisha and other part of India at different capacities from Lecturer to Associate Professor. His research interest is Stock market and Behavioural Finance. He is an External PhD Examiner to Bharatidashan University, Chennai. He has more than 20 research publication in reputed peer reviewed journals including ABDC, Scopus, Web of Science and UGC Care lists. He has attended more than 25 international/National conferences, MDPs/FDPs during his career.



❖ **Dr K Subramani** is Asst. Professor, Operations at VJIM. With a BE, MBA, Ph.D., he is having steel production experience 5 years and 11 years of teaching and consultancy experience in the operations stream. He had conducted more than 50 MDPs in the operational efficiency of production and service industries. He has been teaching logistics and supply chain-related subjects for more than one decade. He has written cases studies based on the operational issues in the service sector.



Reviewer Board

❖ **Dr. Sagyan Sagarika Mohanty** is Assistant Professor, Marketing at Vignana Jyothi Institute of Management. She has more than 14 years of academic experience in different management institutions in different states across India. She has number of seminar presentations as well as research Paper and case studies publications to her credit. Her research interest span both qualitative research, and case study development related to MSME sector.



❖ **Dr. Madhu Murdia** is Coordinator, Department of Travel, Tourism & Hospitality, JRNRV, Deemed to be NAAC accredited 'A' grade University, Udaipur, Rajasthan. She has 16 years of teaching experience and 5 Ph.D's awarded under her supervision. She has attended more than 42 National & International Conferences and have more than 35 research paper publications in UGC care listed, indexed and impact factor Journals.



❖ **Dr. A. Krishna Mohan** is working as Director of Admissions and Professor of CSE Department, University College of Engineering, JNTUK, Kakinada. He has more than 6 Years of Professional Software Development Experience and worked with MNC's like, Fuzitsu, Mastech, Cigna, HardFord Insurance, Citi Corp, TCS, Quest Diagnostics. He has IT Industrial Experience in Overseas like USA, Singapore etc. and 4+ years of Management experience in administrative role and also awarded as one of the efficient managers in TCS. With over 13 Years of teaching experience in a reputed Government University JNTUK, AP. India, he has to his credit 30 International Publications and four books namely, BigData Analytics, Python and Machine Learning, Application development with Android and Operating Systems and one patent.



Acknowledgements

The ICEFB-2022 organizing committee wishes to acknowledge the contribution of all the team members for their relentless efforts towards organizing the 4th International Conference on 'Impact of Current Events on the Future of Business'.

We would like to place on record the support of our Governing Council whose encouragement and support made it possible to organize this conference. We thank our President, Mr. D. Suresh Babu, General Secretary, Er. J. Seshagiri Rao and Chairman, Mr. K. Harishchandra Prasad for their inspiring leadership and continuous support throughout this endeavour.

Sincere gratitude to our academic partner AMDISA (Association of Management Development Institutions in South Asia) for being the supporting partner to present and promote the conference on a global platform.

We also acknowledge the team from Journal Press India, our conference partner to manage the conference through an interactive and responsive conference management system and being a single point of contact for all the participants.

We express our utmost sincere thanks to the chief guests, keynote speakers, experts and session chairs for their fantastic contributions to the conference.

Many thanks to the reviewer board members who have provided their valuable time and suggestions regarding the improvement of quality, coherence, and content presentation of chapters.

The conference could not have been successful without the constant cooperation of faculty members, and technical, administrative and accounting assistance of staff members of VJIM.

Thanks to our conference team without whose support the conference would not have been possible in thought as well as action. We place on record our sincere thanks to Mr. N. Srinivas Chakravarthy, Dr. Vishal Kutchu, Mr. Raghu Mantha, Mr. A. Adarsh and Mr. Samson. The unlimited appreciation goes to the researchers, academicians, business professionals and entrepreneurs from across the globe to come together on a single platform to deliberate, discuss and deliver on strategies, policies, experiences and research studies in the pursuit of building resilient organizations. The organizing team of ICEFB-2022 sincerely congratulates all presenters, authors and delegates for their interest, intent and immense support.

Editors

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Dr. Sheelam Jain

Mrs. Niharika Atchyutuni

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- Dr. S. Ananth, Independent Researcher, Economist & Columnist

Individual Acknowledgements

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- Dr. C. Madhavaiah, Associate Professor, Marketing, Pondicherry University
- Prof. M. Jayasree, Faculty, Finance, Gitam University, Hyderabad

Section A

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SECTION: A



ABSTRACTS

Workforce Analytics: Predicting Employee Attrition using Machine Learning Approach

Shobhanam Krishna* and Sumati Sidharth**

ABSTRACT

Any organization or company recognizes the importance of the workforce in achieving and sustaining a competitive edge. While focusing on maximizing profit, employee attrition rates should indeed be taken into account as an intruding factor. The purpose of this paper is to incorporate the notions of machine learning and predictive analytics into the development of a model for analyzing employee attrition in the industry. To assess the employee attrition rate, the current model employs a Machine Learning approach. The Logistics Regression algorithm is being used here specifically, which takes into account major parameters and reports model accuracy. The study's findings identified six variables as key motivators for employee attrition. It also revealed that the model has an accuracy of 84.12 percent, a precision of 84 percent, and a recall rate of 100 percent. The results obtained can be used by management to determine what changes should be made to the workplace in order to retain the majority of their employees.

Keywords: *Employee attrition; Feature Engineering; Artificial Intelligence (AI); Machine learning(ML); Logistics Regression (LR).*

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Sentiment Score for Finance Decision: An Analysis for Investment in Indian Commodity Market

Vishweswarsatry V. N., K. R. Pundareeka Vittala** and Pradeep Kumar Shinde ****

ABSTRACT

Unsupervised Learning technique of analyzing text has become the crux of majority companies to obtain the market sentiments towards its Company or product or service. Text mining of the data obtained through social networking websites and application are majority considered for decision making by many stakeholders like Company, Government, institutions, Investors etc. The objective of the research paper is to generate and cleanse the tweets of market Indices, obtain a frequency matrix and to categorize the texts through Contextual semantic analysis and finally to generate a sentiment score for decision making and the tool used is open source R platform. The methodology applied for the study is text analytics through opinion mining and generate scores for arriving at optimum decision making. The outcome of the paper is generating an accurate frequency bars and also a sentiment score which caters an appropriate source for large investors, speculators and other market participants.

Keywords: *Text analytics; Unsupervised learning; Semantic analysis; Frequency matrix.*

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Marketing Sustainability: A Study on Dynamics of Contemporary Supply Chain Practices

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ABSTRACT

As supply systems have gotten more complex than ever before, ruthlessness and the frequency of supply chain disruptions appear to be on the rise. Many experts believe Supply Chain Management (SCM) to be the actual depiction of a modern firm's competency because of its extensive breadth. To understand the dynamics played in SCM and estimating the relationship between those for paving the way for better customer relationships. The descriptive and analytical approach adopted to investigate the causal relations between the different entities in the supply chain management. The study is casual in nature and adopted a quantitative approach to study the sample so collected. The sample size was 31 people (Bangalore Urban area), data collected using convenience sampling, subsequently analyzed with inferential statistics with testing hypotheses. It is found that there is a highly positive covariance among the variables which impact the market sustainability. Analysis state that interrelated dimensions help grow the SC network of a company. The functional spaces, linkages, and various conceptual overlaps between operations management, manufacturing, logistics, marketing, and supply chain management are highlighted in this study paper, which contributes to the burgeoning SCM discussion.

Keywords: *Marketing and supply chain; Supply chain management and Marketing relationships; Business structures.*

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Lessons Learnt from COVID-19 for Business Continuity Management (BCM) in Banking Sector

Sowmya Vivek*

ABSTRACT

There has been extensive research on Business Continuity Planning however there is a gap in terms of study of BCP within the context of COVID 19. Having a BCP is expected to mitigate the operational impact of risk events however truth is that probably no business expected an incident to the magnitude of COVID 19. It is expected that business disruption caused due to COVID gave major lesson to be learnt and BCP is one area where there would have been shortcomings. However, there is lack of research on the effectiveness of BCP in banking sector during COVID and what were the possible shortcomings that needs to be addressed to strengthen the plan. Given this background this paper looks at effectiveness of BCP during the COVID 19 and possible shortcomings highlighted by COVID crisis. This research is of practical importance to banking sector as it highlights areas in the current BCM that needs to be revamped given the COVID experience.

Keywords: *Business continuity management (BCM); Business continuity plan (BCP); Covid-19; Operational risk management*

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Analysis of Influencing Factors on Knowledge Management in Armed Forces

Debajyoti Borah and Sumati Sidharth***

ABSTRACT

This study has been undertaken to identify the impact factors that act as barriers in implementation of knowledge management (KM) in Indian Armed Forces. The research methodology chosen for the study was Grounded Theory (GT). The study is founded on the conceptual framework developed by Holsapple and Joshi (2000). A number of negative influences which have been found to influence KM implementation were analyzed under three major categories. Amongst them the critical factors that are the major impediments to KM were identified. The barriers to KM that were identified as critical factors were interlinked in order to find the relationship amongst them. A model that depicts the process by which the critical factors combine and interact to create barriers to a KM system has been proposed. The practical application of this study for the military is that identification of the negative influences would be valuable in overcoming implementation barriers and, as a result, facilitate the implementation of a robust KM system.

Keywords: *Knowledge management; KM barriers; KM framework; Grounded theory; KM influences model.*

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The Financial Performance Analysis of Indian Pharmaceutical Companies: Implications from Pre to Post COVID Outbreak

Maddi Yasaswini and Lalita Mohan Mohapatra***

ABSTRACT

This study analyses the financial risk and performance of the pharmaceutical sector using firm level analysis. The study has selected five Indian pharma companies based on their market capitalization in the National Stock Exchange (NSE). The bankruptcy profile of the firms was measured for using Altman-Z score. The financial profit margins, liquidity and solvency ratios were also used to measure the risk associated with the firms. The time was divided into two distinct periods i.e., five years before the COVID and one year during the COVID period. This analysis is based on the secondary data from the Annual reports, moneycontrol.com, etc. The results indicate that the Sun Pharma leads the pharma sector in financial performance while Dr. Reddy's is not doing so well. The study is having policy implications for portfolio managers, regulators, and investors.

Keywords: *Pharmaceutical sector; Financial risk analysis; Altman Z-score; Profitability.*

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CSR as a Tool for Sustainable Development: An Empirical Study of Select Manufacturing Companies in India

Kalyani Mujumdar* and Dattatry Mane**

ABSTRACT

Corporate Social Responsibility (CSR) encompasses economic, legal, ethical, and philanthropic responsibilities that society has of organizations at a given point in time (Carroll, 1991). In India, mandatory CSR was implemented in 2014. The paper aims to examine how CSR by manufacturing companies supports sustainable development. Further, the paper examines the differences in CSR practices in public and private sector companies and the sectoral differences in CSR spend. The sample for the study comprises of manufacturing companies engaged in production of Aluminum, Cement, Construction and Engineering, Integrated Oil and Natural Gas and Iron and Steel. The research is based on secondary sources. The findings suggest that CSR is aligned to Sustainable Development. CSR supports education, healthcare, rural development, livelihood enhancement and environmental sustainability. Secondly, there is significant difference in CSR spend by private and public sector. Private sector companies spend more than PSUs. The Department of Public Enterprises (DPE) provides CSR guidelines to PSUs. Hence CSR spend by PSUs is better aligned to sustainable development. Further, there are significant differences in sector-wise CSR spend. Based on the sample, the Oil and Natural gas sector is the highest contributor to CSR. The empirical study has implications for CSR managers and policy makers.

Keywords: *Corporate social responsibility (CSR); Manufacturing sector; PSU; Skill development; Sustainable development.*

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Corporate Governance, Zero Leverage and Financial Constraint: A Financing Decision from Nepalese Non-Financial Firms

*Prem Prasad Silwal**

ABSTRACT

The paper reports empirical evidence on the zero-leverage phenomenon using binary logit model for Nepalese non-financial firms during the period of 2010 to 2021. There are two types of firms: financial constraint firms that have difficulty obtaining external financing, as foreseen by the financial constraint hypothesis, and financially unconstrained firms that uphold zero leverage as a result of a financing decision, as endorsed by the financial flexibility hypothesis. Our result shows that dividend-paying unlevered enterprises avoid debt to maintain financial flexibility and avoid underinvestment incentives. Such payout firms generally have larger profits, cash reserve and growth potentials. Contrary to the literature, large firms with more fixed assets, and lower median value of HP index demand more debt, in such firms the willingness of the creditor increase to grant debt, thus get better access over debt market. We also find the firm with greater corporate governance mitigate zero leverage policy as managers of such firms choose lower or debt free financing which entails to reduce risk and bankruptcy uncertainty.

Keywords: *Financial constraint; Zero leverage; Corporate governance; Financial flexibility; Growth potentials*

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Influence of Happiness Index in the Economic Upliftment of Women

Franklin John and Nilufar Sathiq***

ABSTRACT

A number of factors contribute to the economic upliftment of women; but the parameters which contribute to the happiness of women include family relation and friendship, income and growth at work, physical and mental health, religion, social issues, etc. Ensuring both upliftment and happiness of women contribute to the development of any society; An initiative undertaken by Kerala state to enhance the living standard of rural women is Kudumbashree; a three-tier structure formed of NHGs, ADS and CDS. The main objective of this paper is to understand the influence of Happiness Index Factors in the economic upliftment of women (the factors for it being education, work, financial ability, collective action, social relationships and unpaid care and work burden). Step wise multiple regression analysis was used to test the hypothesis. The results of the study highlight the influence of Happiness Index on the economic upliftment of women

Keywords: *Women empowerment; Kudumbashree; Economic upliftment; Happiness; Factors.*

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Nature and Causes of Poverty Leading to Inequality and Social Exclusion in Nepal

Janardan Paudel* and Khem Bahadur Chhetri**

ABSTRACT

Poverty is great enemy for countries, societies and families. It exists in every country and community all over the world. The countries which we say as developed countries, they are also victims of poverty. There is poverty in America, Romania, Hungary, Bulgaria, India and Nepal; and similarly in almost all countries. We find homeless and jobless people in every country of our globe. It is said that the people who cannot earn a dollar a day are under the category of poverty. Almost in all countries children are dying of hunger and malnutrition. Mothers cannot do breastfeeding to their children due to not getting sufficient diet for themselves. At work, women get less wages than male persons. There is discrimination in the payment for the same work between male and female workers. Small children are crying out for food to live but they have not got. The children of poor parents see schools from outside the gate but they have not got chance to go into the school premises and go inside the classrooms to take education. Many school- age children are found in the street playing or in different hotels washing pots to get something to eat from their masters. But the masters are not kind enough to satisfy their hunger. Although we talk about development and reduction of poverty, it will be only in documents of NGOs and INGOs. Nepal also has not been isolated from such type of dreadful situation of poverty. Nepal is a land of diverse regional and ethnic background. Nepal has got high Himalayas, high mountainous ranges, low mountainous ranges, valleys and plain terai regions with diverse ethnic groups. Although documents mention reduced poverty, it has not been in reality and there is an illusion among people about poverty. Taking all these points into consideration, this paper aims to show nature and causes of poverty in Nepal and also shows how people feel inequality and social exclusion in their own communities and country in Nepal. This is a qualitative study and the methodology followed for obtaining information is from document analysis and discussion with people. Some research articles are concerned to find the fact about poverty in Nepal. The analysis is made by using narrative technique and interpretation. This research paper shows about condition of poverty in Nepal.

Keywords: Poverty; Exclusion; Inequality; Education; Politics and government.

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A Systematic Review of Defining Strategic Human Resource Management and Elements of Sustainable Human Resource Management

Vasudha Kurikala and V. Parvathi ***

ABSTRACT

Human Resource Management has been evolving for over fifteen years. It helps to develop strategic human resource management. Not just 'business' goals but broad organizational goals in various areas are the foundation of sustainable HRM. The relationship between HRM and sustainability is central to this approach. Sustainable human resource management aims to create positive short- and long-term economic, social, human, and ecological significance. Sustainable Development Goals were set forward in the 2030 Agenda for Sustainable Development. Human resource experts can develop approaches, goals, actions, and management practices to attain various sustainability goals. This connection to sustainability has influenced studies outside of SHRM and necessitated the evaluation of other theories to get insight into Sustainable HRM.

Keywords: *Features; Long-term growth goals; Strategic human resource management (SHRM); Sustainable HRM.*

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Effectiveness and Efficiency of Last Mile Operations with Reference to Third Party Logistics Service Provider

Anusha Kanagala, D. Srinivasa Reddy** and Pavan Kanagala****

ABSTRACT

The last mile is the high-priced part of the supply chain. The efficiency in LAST MILE operations depends on multiple factors like density, time frames, congestion, fragmentation, shipment size and homogeneity. The last mile operations bring disruptive innovation in the field of logistics by reducing cost, pollution, improving mileage. To analyze the effectiveness and efficiency in execution of last mile operations of Third-Party Logistic Service Provider. The research is conducted with SLR and Bibliometric analysis using VoS Viewer to understand the research carried out in the area of study. And, the primary data collected from third party logistics service provider was also analysed. The study identified the major challenges in execution of last-mile delivery are with App interface, bad scans and delivery feedback score that are cutting down the efficiency. The paper suggests for usage of alternate technologies, co-ordination, and supply chain design in delivery can overcome the deficiencies in last mile operations. Future scope, analyse the challenges in implementation of last mile operations for small and medium 3PL companies to fetch the advantage.

Keywords: *Last mile delivery; Inbound operations; Outbound operations; Logistics.*

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An Integrated Framework to Fine-Tune and Fortify Analytics Governance

Niharika Atchyutuni and Sudharsan Sezhian***

ABSTRACT

Analytics has evolved as a powerful tool to support organizations in predicting business outcomes and planning strategies based on the insights gained. Analytics governance has the potential to streamline, formalize and optimize the application of analytics. Robust governance frameworks that are comprehensive, that can encompass data, information technology and analytics application are vital for this. A thorough analysis of extant literature reveals a lack of focus on analytics governance. Another downside is the limited empirical evidence on the effectiveness of these models or frameworks. This article aims to conceptually synthesize the existing literature on governance frameworks related to data, information technology and analytics. A comprehensive framework with four governance components namely systems, structural, people and process with twelve mechanisms has been designed. Thus this article uses conceptual analysis to assemble the theoretical framework of analytical governance. The authors aim to develop a reliable and valid instrument to empirically test the effectiveness of this framework in the future, as it can be of immense help and value to organizations employing analytics.

Keywords: *Analytics; Governance; Data; Framework; Systems; Structures; People; Processes.*

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Exploring the Feasibility and Enablers of Continued Work from Home for Telecommunication Network Operations Employees Owing to COVID-19

Girijesh Srivastava and Harjeet Khanduja***

ABSTRACT

Ensuring Network Availability is one of the key contributors to superior Customer Experience for telecom organizations. Telecom operators promise up to 99.5% network uptime. In ensuring this high level of network uptime, Network Operations Center (NOC) act as the first line of defense. Therefore, NOC is one of the most critical sub functions within the Network function of a telecom organization. NOCs have traditionally been run by employees working from Office (WFO). However, with the onset of COVID-19 pandemic and subsequent lockdowns, telecom operators were forced to shift NOC operations from the WFO model to the Work from Home (WFH) model. As the lockdown kept getting extended due to the worsening COVID-19 situation, telecom operators were forced to consider the possibility of continued WFH. Our study explores the technical and behavioral feasibilities of continued WFH for the NOC employees. Basis the primary data collected through semi-structured interviews with employees working at different job levels in the NOC of different telecom operators, we report the operational overview of a telecom NOC, their journey of WFH, challenges being faced by them in WFH, and the feasibility of continued WFH. We also present our recommendations for formulating a Work from Home Policy to enable continued WFH.

Keywords: *Work from home; Remote working; Telecommunications; Network Operations; COVID-19 Pandemic.*

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Health Insurance in India: An Exploratory Study to Understand Customer Service and Satisfaction

Pradeep Kautish* and Neeraj Arora**

ABSTRACT

Innovative and market-driven cashless health plans have transformed the insurance industry. Strategic interventions for health insurance firms include its role in creating customer service echelons in the form of rapid medical access and hassle-free claim settlement for covered individuals. Its significance in the service business is recognized in areas with a direct relationship with customer satisfaction. Adequate claim settlement and compensation can improve service features and quality. This study is an early research effort focusing on policyholders who had used cashless hospitalization in the previous financial year, and their experiences were documented to assess the level of satisfaction with cashless insurance ideas in Indian health plans. This article examines the applicability of cashless proposition in health insurance and its function in fostering values for policyholders and a health plan. Insurance firms can use the study findings to improve their cashless health care service features and improve customer satisfaction by improvising its effectiveness.

Keywords: *Cashless; Claim; Medical healthcare; Insurance; Service.*

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The Contributions of Promotional Strategies on Product Success: A Case of Jambo Food Products Company Limited

Anitha Saruma and Viswa Nadham N.***

ABSTRACT

The study examined the contributions of promotional strategy on product success on market penetration strategy on product success in Jambo Food Company Ltd. in Tanzania. The study employed qualitative research approach and targeted eleven management officials who were purposively selected. Data collected by using a checklist. Initial direct quote was used in the analysis of themes. From the findings of this study, it was established that promotional strategy is important because it facilitates creation of brand awareness, getting more customers, providing information about products and services provided, keeping local customers, increasing amount and frequency of use, identification of targeted customers. Traditional advertising, personal selling, sales promotion, public relations, social media and e-commerce used to promote a product. Products penetration strategy was found very important because it helped in the improvement of marketing effectiveness, increasing brand awareness, enabling multiple distribution channels, change of pricing rates, launching products. The study recommends that Company should adapt to the environment and establish a market strategy and it is important to do due diligence and sort out legal, tax and finances and develops a promotional strategy through advertising, publicity and sales promotion affected market share and profitability.

Keywords: *Promotional strategy; Penetration strategy; Product success; Brand building; Food market.*

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Effect of First Lockdown Announcement on the Indian Stock Market: An Investigation of Select 40 Companies across 9 Sectors

Srijanani Devarakonda, Lakshmi Rawat** and Pankaj Sahu****

ABSTRACT

In the present study we examine the impact of announcement of first lockdown after the outbreak of Covid -19 on the Indian Stock Market. We examined the daily abnormal returns for 60 days event window, with 30 days pre-announcement and 30 days post announcement of the event. With an estimation period of 250 days before 30 days pre-event. Abnormal returns have been calculated using Market Model with Nifty index as proxy for market returns. To test the significance of Average Abnormal Returns, paired sample t-test has been used. The results indicate that there was a statistically significant impact on the stock prices of the Pharma companies on account of the announcement of the lockdown due to Covid – 19. Although, there was some disturbance observed among the other sectors it was not found to be statistically significant.

Keywords: *First lockdown announcement; Covid-19; Market model; Event study; Average abnormal returns.*

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Building Resilient Organizations through Digital Transformation: A Study of the Insurance Sector in India

Padmaker Jadhav, Jayashree Veluthakkal** and Sagyan Sagarika Mohanty****

ABSTRACT

Organizations that have been succeeding and growing had well-established process in place. Their routines could be a towering task of manoeuvring a competitor or a mundane one of filling in data sheets. Nonetheless, it was always a time-tested and reliable process. The ever-changing VUCA conditions saw many organizations break down as they could not withstand the storm of the crisis. The covid virus influx has changed the face of the world and amongst all other walks of life, businesses were also hit very badly. Businesses realized the need to flow with the ever-changing demands of the environment. Resilience became the much-spoken word. Organizational resilience was built over a period of time, but some of the best developments in resilience has incurred during times of unexpected changes and adversities. The Covid conditions have made the situations even more dynamic for the companies across sectors and the insurance sector has not been left behind. Digital transformation came as the answer to many companies during these days of crises. The insurance sector has also adopted this transformation. This paper attempts to throw light on the digital transformation adopted by the insurance sector to build resilience.

Keywords: *Resilience; Transformation; Digital; Insurance; VUCA.*

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A Pandemic Hope: Freddo Café

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ABSTRACT

Al Mal Tiempo, Buena Cara (“When the Going Gets Tough, the Tough Gets Going”) is a suitable quote for the situation many around the globe during the pandemic and endemic times. A shining light has been thrown in the dark by Mr. Vijay Kumar, who has been doing his café business for a long time. He has renovated his café to show optimism in doing business. His turnover has been multi-folded after he renovated the existing retail outlet and its business strategy. An aspiring entrepreneur in the field of F&B, with suitable international qualifications and a wide variety of experience. Vijay Kumar has been a successful consultant in establishing the food and beverages industries for more than a decade throughout India. His expertise and domain acumen successfully helped him to run a small business shop in a successful manner without hassle even during the pandemic. He has firmly believed in sustaining his business and engaged his hope through a calculative investment, a few lakhs in renovating the retail outlet and promoting the café shop as a turnaround success of a high-profit small venture. Even after doing a tremendous job, he was not feeling fulfilled and yet to achieve more. He wanted to take Freddo as a Franchise Model to the next level of his entrepreneurial journey. But he has apprehensions over his idea whether this model will succeed or not? He is worried that venturing into a business model will fit in and succeed similarly to the existing business with the same intensity.

Keywords: *Entrepreneurship; Small business; Franchising management.*

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An Overview of Financial Risks & Role of Reserve Bank of India in the Management of Risks in Indian Banking Sector

Manoj Sangiseti and Pechetty Venkata Purna Kumari***

ABSTRACT

The financial stability of the banking sector is undoubtedly the backbone of any economy. Massive bank failures not only hurt the domestic economy but also put the whole world at risk. The fall of Lehman Brothers in 2008 is a prime example of this. In this environment, it is important to focus on the financial stability of domestic financial institutions. With the 1991 economic policy, the banking industry became a fast-running free feature economy. The banking industry suffers from a wide range of losses. The present study is based on secondary data and focuses on measures taken by the RBI to identify and mitigate various risks in the Indian banking industry such as liquidity risk, interest risk, credit risk, interest rate risk, etc. actions taken. This paper discusses the role of Reserve Bank of India in addressing the risks like BASEL Norms in addition to conceptualization of various risks.

Keywords: *Indian banking sector; Types of risks; Risk management practices; BASEL norms efficiency.*

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Antecedents and Consequences of Co-Creation Experience: A Study on Luxury Salons in Taiwan

Cedric Hsi-Jui Wu*, Revanth Kumar Guttana**, Hsiu Yuan-Hu***
and Ferry Tema Atmaja****

ABSTRACT

The role of luxury salon in Taiwan's economy is markable and is on surge in recent years. Yet research in this context has attracted less attention. As customer shifts to experiential value salon services are considered as co-creation because customers personalize and co-innovate their needs with the hairstylist. Continuous co-creational dynamic facilitates co-creation experience fulfils customer needs. Highlighting the importance of co-creation experience, this research aims to explore the antecedents and consequences of co-creation experience using S-O-R framework in the context of luxury salons in Taiwan. This study proposed organizational, customer and environmental factors as antecedents and anticipated customer economic value and customer satisfaction as consequences of co-creation experience. From the proposed, this paper has identified that organizational socialization, customer involvement and environment design predominantly influence co-creation experience, while perceived support for customer and customer participation were not antecedents to co-creation experience in the salon context. Results also revealed that customer economic value and customer satisfaction as consequences of co-creation experience, with a positive relationship between customer economic value and customer satisfaction. By doing so, this paper offers valuable theoretical and practical contributions while discussing limitations and future scope for research.

Keywords: *Co-creation experience; Antecedents; Consequences; Luxury salon.*

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Performance Analysis of Direct-Growth Equity Linked Saving Schemes (ELSS) at Covid -19 Period: A Study of Public Sector Mutual Funds

*Kothamaram Venkata Rami Reddy*and Atluri Sree Ram***

ABSTRACT

Investors can make good returns by investing in different types of mutual fund schemes. For tax savers, ELSS funds are more advantageous than other schemes because investors are getting more benefits like tax saving, long-term wealth creation, etc. The study considered statistical tools such as the Mean, Standard Deviation (SD), and linear trend to analyse the top five public sector ELSS funds in India at the time of pre, during, and post Covid-19 periods from 10-01-2019 to 31-03-2021. During the study period i.e., in the Covid-19 crisis, the study finds that public sector ELSS funds were performed extremely well in comparison to the benchmark (S&P 500). Among the selected funds, Canara Robeco Equity Tax Saver Fund (D-G) was performed moderately compared to other ELSS funds. This is the first attempt to empirically assess ELSS funds' performance by considering monthly absolute returns at the covid-19 period.

Keywords: *Direct-growth; Equity linked savings scheme; Performance analysis; Public sector mutual funds.*

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SECTION: B



ARTICLES

Digital Literacy: An Investigation into the Perceived Challenges and Opportunities of Women GenX & Baby Boomers

*Lakshman Kumar**, *Guru Basava Aradhya S.***, *Avijit Saha**** and *Venkat Narayanan*****

ABSTRACT

Digital literacy is said to be one of the most common knowledge that every person is supposed to imbibe in themselves because of the current requirement of it in the fast-moving digital world. The aim of the study is to understand the perceived digital literacy and usage of social media among the women of Generations X and Baby Boomers. The purpose is to develop and test model for understating the relationship among the said sample population with constructs. This study is descriptive in nature and by using quantitative techniques to analyse the data which is collected by administering structured questionnaires to 90 respondents. Since objective is to develop a model, therefore SEM is adopted using Lavaan (Rstudio) and validated with most appropriate model indices. The empirical evidence from the study indicates that there exists the significant usage among the urban sample population for knowledge and leisure. The business corporation can compile and most suitable strategy for focusing on the selected audience for the rural and urban conglomerate in the digital era using the findings. The model could be elevate the understanding of the perceived risk among the target audience.

Keywords: *Generation X; Baby boomers; Digital literacy; Digital apps; Rural areas; Semi – urban areas; Urban areas.*

1.0 Introduction

Digital devices these days are all over the world and we can see every individual indulging in the usage of digital devices. Modern society requires the knowledge of digital devices, in other words, it has become like an obligation for every age group to use and have the knowledge of digital devices. People who belong to the age groups coming under Gen X (born between the years 1965 and 1979) and Baby Boomers (born between the years 1946

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and 1964) are very less likely to use digital devices mainly because of the lack of knowledge about using the digital devices. Usage of digital devices requires digital literacy.

The main issue with the digital usage of Gen X and Baby Boomers is that they are not fond of it as they have all grown up without the help of these devices in their lifetime. The current situation in the world is constraining them from using digital devices which they are not comfortable with. Every daily activity demands for the usage of these devices be in banking activities, bill-paying activities, medical activities, etc.

Research mainly deals with the study and analysis of the usage of digital devices among the women in Gen X and Baby Boomers cohort and to study if the women in their old age are trying to adapt to the new technology-driven world or not. We collected the data by surveying women belonging to Rural, Semi-urban, and Urban areas and tried to compare their usage and knowledge in digital literacy. The purpose of the study was to examine the digital literacy in old aged people and to what extent they can understand the usage of digital devices. We have also tried to study the amount of time they spend using these digital devices and the purpose for which they are used.

1.1 Objectives of the study

From the above analysis and research gap, this research formulated objectives as below.

- To understand the perceptions of Gen X and Baby Boomers towards digital apps usage
- To analyse the usage of social media among women of Gen X and Baby Boomers
- To examine the impact of digital literacy on social media usage of the selected population

2.0 Review of Literature

Oh *et al.*, (2021) in their study attempted to collect and evaluate the digital literacy among older adults, the search yielded around 1561 studies from different countries like the USA, Germany, Italy, China, etc. they aimed at identifying and critically appraise the studies that involved the assessment of literacy in digital devices among the older people and also concentrated. It was said in the study that there have to be more and more studies that have to measure digital literacy among older adults. Digital literacy is said to have a very strong association with the utilization of Information and Communication Technologies (ICT) that helps to promote both the physical and mental well-being among all those old ages adults.

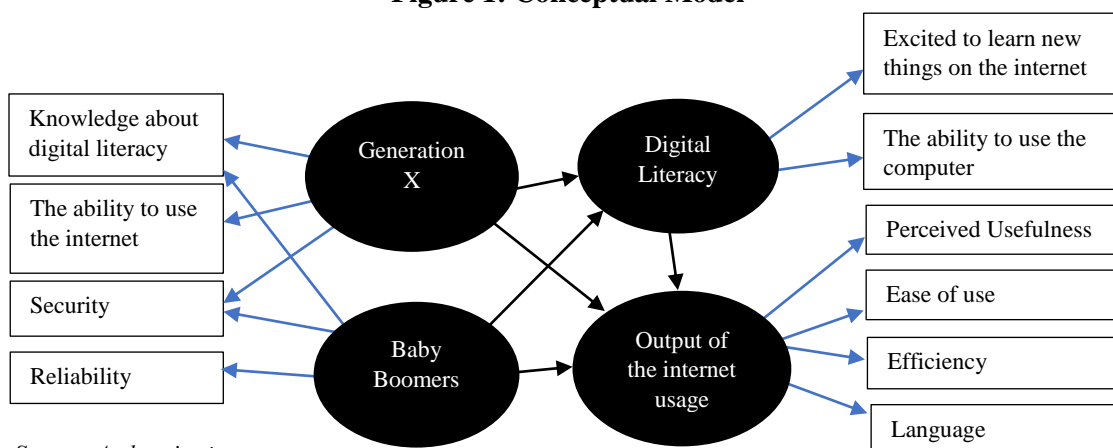
Betts *et al.*, (2019) in their paper studies the perception that older adults have on digital technology. The sample consisted of seventeen older adults who were aged between 54 years to 85 years and it explored how the older population understood the technology in their lives, and this was done by forming two focused groups which lasted for almost 90 minutes. The theme of the session was to understand the thirst for knowledge in older people and the wish for the sessions conducted on digital technology. The study focused to understand the older adults as to what they think digital technology was and the conclusion they got was that most of the older population only had computers and telephones as digital devices. It also was noted that some of them were successful users and had a wide knowledge of digital technology.

Castilla *et al.*, (2019) in their study discusses the elderly people who were mostly having a traditional approach to learning and were not through social networks or the internet and found that people with not much ICT experience feared to use the social network. It was also concluded that after eight sessions most of the population under study were able to use the software application independently.

Schreurs *et al.*, (2017) argued in their study following the fact that the old population mainly those who are 60 years and above lack a lot of skills when it comes to the use of digital technology. A survey was conducted for this study in which the older people were interviewed, the investigation showed that the older population lacked the skills, a very limited social and institutional systems are making it very difficult for the older adults to increase or learn the digital technology. The survey was conducted with 23 individuals and it was a face-to-face interaction, based on the analysis of the received data they have formed a model which stresses the relationship between digital literacy and experience. However, they find it very challenging to bring in digital literacy in older adults as they lack the skills to learn and understand, there is a lack of enthusiasm in them.

O’Keeffe (2014) in their study emphasized that in the recent future the necessary skill for living shall be digital literacy. Modern society has now included digital media, devices, and technologies as one of its components. Without digital presence the modern society shall cease to exist it seems and hence there needs to be learned. The study attempted to understand the digital literacy rate of Baby Boomers and their understanding and usage pattern of digital devices. The study found that the selected sample of the baby boomers has only basic functional digital know-how, this paved the way to explore the other facets viz., risk, ease of use and reliability of the digital social media. This study cognizes the need for those segments which are unattended by scholars for a long time. Hence the segments such as Women GenX and Baby Boomers studied under this study. The above review and existence of research gap, the below conceptualization and development of model.

Figure 1: Conceptual Model



Source: Authors' primary source

3.0 Research Methodology

The research explains the fact that Gen X and Baby Boomers lack knowledge in digital literacy this is mainly because of the reason that they (Gen X and Baby Boomers) were never dependent on technology during their young age. They mainly worked with papers and typing machines where there was no touch of technology in their daily life.

The empirical research is based on the usage of digital devices and the digital literacy among the women of Gen X and Baby Boomers' cohorts in Rural, Semi-Urban, and Urban areas in Bangalore South (since of the research gap to understand the segments of semi-urban and rural).

The data is collected from the Women belonging to the age group of Gen X and Baby Boomers by survey method using a structured questionnaire with the random sampling method. The research primarily focuses on

- Understanding the various perception of usage of digital apps and usage of social media among women of Gen X and Baby Boomers.
- Understanding the mutual relationship existing between digital literacy and social media usage among the selected population.

The study was taken for 75 days. To validate the researcher's claim, the linear regression method was utilized to establish a certain relationship between the usage of social media among the women of Gen X and Baby Boomers.

To establish a measured structured model which is to corroborate the conceptualization model, A Structural Equation Model is validated.

3.1 Data collection method

In this research, the data collection technique used was the random sampling technique to collect the required data. The sample size of the research conducted was 90 respondents in rural, semi-urban, and urban areas in Bangalore district altogether. There were 30 respondents from rural areas, 30 respondents from Semi-Urban areas, and 30 respondents from urban areas.

Some of the rural areas include Shettigehalli, Sugur, Rangapura, Banachigere, Semi-Urban areas include Anekal, Attibele, and urban areas include places in Bangalore South.

3.2 Sampling plan

The study assumed a 95% confidence level and equal responses from all the respondents and an error of 5% of the true value.

The samples were collected from a cross-section of people staying in that area. It comprises respondents with different demographic dimensions.

3.3 Need for the study and Statement of the problem

We got to understand after the research that many old-aged people (Gen X and Baby Boomers) especially women that they lacked the basic literacy itself which was a problem for

them to be aware of digital devices and to become digitally literate. It was an implied behavior in almost all the women among the respondents to lack interest in using digital devices or social media applications.

3.4 Questionnaire design

Through the literature review, the questions related to the perceived use of digital literacy amongst women of Gen X and Baby Boomers' cohorts. Responses in the statements of the questionnaire were measured on a five-point Likert scale ranging from 1 to 5 with 1 indicating very good and 5 indicating very poor, in another statement 1 indicating very excited and 5 indicating not at all excited, and also in few statements 1 indicating Strongly agree and 5 indicating strongly disagree. The questionnaires also consist of a ranking scale and other categorical scales. The collected data were statistically processed subsequently findings were inferred.

4.0 Analysis and Discussion

Table 1: Demographic Analysis

Variables	Particulars	Frequency (No. of respondents)	Percent (%)
Age	35-45 years	27	30
	46-55 years	32	35.6
	56-65 years	17	18.9
	66-75 years	10	11.1
	75 years and above	4	4.4
Place	Rural	30	33.33
	Semi-urban	30	33.33
	Urban	30	33.34
Educational Qualification	Primary / Higher Education	48	53.3
	Diploma / Certification	4	4.4
	Bachelor Degree	11	12.2
	Postgraduate Degree	12	13.3
	None	15	16.7

Sources: Primary data

The above table helps in understanding the demographic factors that influence the Perceived use of digital literacy amongst women of Gen x and baby boomers.

The table shows that 30% of the respondents are between the age of 35 to 45 years, 35.6% of the respondents are between the age of 46 to 55 years, 18.9% of respondents are aged between 56 to 65 years, 11.1% of respondents are aged between 66 to 75 years and 4.4% of the respondents are aged 75 years and above. It is interpreted that respondents from the age group 46 to 55 had more participation in our survey.

The table shows that there is an equal number of participants, i.e., 30 respondents from rural, semi-urban, and urban areas who took part in our study.

In our study, the majority of respondents (53.3 percent) had a primary or higher education as their educational qualification, followed by a bachelor's degree (12.2 percent) and a postgraduate degree (13.3 percent), diploma holders (4.4 percent), and illiteracy (16.7%).

4.1 Descriptive Analysis:

4.1.1 Computer literacy

Computer literacy refers to the ability to use computers and associated technologies effectively. Skill levels can range from having a basic understanding of how to use a computer and also can be used to carry out tasks like running the OS and using computer software (Indeed Editorial Team, 2021).

According to a survey, respondents in Gen X and Baby Boomers age groups prefer that their ability to use a computer be very poor in rural areas, moderately poor in semi-urban areas, and urban areas computer literacy among women of Gen X and Baby Boomers was very good.

4.1.2 Internet literacy

Internet literacy is described as the ability to use the internet to find information when it is required. Respondents in Gen X and Baby Boomer age groups in Rural and Semi-Urban areas have a very limited understanding of how to use the internet and responses shows very good internet literacy among women of Gen X and Baby Boomers in Urban areas.

4.1.3 Digital Devices

Respondents (Gen X and Baby Boomers) in Rural, Semi-Urban, and Urban areas are more familiar with smartphones, additional that respondents from urban areas are also more familiar with laptops.

4.1.4 Purpose of using the devices

In my study, 97.8 percent of respondents use their digital devices for calls, 46.7 percent for social media, and 34.4 percent and 27.8 percent use digital devices for texting and music, 26.7 percent for sending or receiving e-mail, and 15.6 percent prefer to play games, respectively.

4.1.5 Digital literacy

Digital literacy is explained as the ability of a person to read, understand and interpret the digital media contents in their day-to-day life. At present the world population is digitally exposed with digital texts, sounds and images and expend most of their time with digital contents. So the ability to interpret these available digital contents in their daily lives and

corresponds to applying the new knowledge in their environments becomes very important. (Jones-Kavalier & Flannigan, 2006).

According to the data collected from the respondents (Gen X and Baby Boomers), their knowledge of digital literacy (the ability to use digital devices or apps) is very poor in Rural and Semi-Urban areas and we received contrasting responses from Urban areas.

4.1.6 Time spent using digital devices

Older women adults (Gen X and Baby Boomers) do not prefer digital devices. They hardly ever use it unless it is necessary. Respondents (Gen X and Baby Boomers) prefer to use digital devices for less than 3 hours per day in Rural and Semi-Urban areas and on average, respondents use digital devices for 5 -8 hours in Urban areas.

4.1.7 Excited to learn new on the internet

Learning something new is always an exciting endeavor (Kim, 2021). Respondents in Gen X and Baby Boomer age groups in semi-urban and urban areas are very excited to learn new things on the internet, whereas in rural areas respondents are not at all excited.

4.1.8 Digital devices are easy to use

Respondents (Gen X and Baby Boomers) in rural areas disagree with the statement that digital devices are easy to use, whereas Semi-Urban and Urban respondents have ease in using digital devices.

4.1.9 Social media for knowledge purpose

Very few people use social media for knowledge purpose, most of the people uses social media for entertainment. Respondents from Rural and Semi-Urban areas did not agree with the statement that social media or digital devices are helpful for knowledge purposes, whereas urban respondents believe that social media can be used for knowledge purposes.

4.1.10 Familiarity with social media apps

There are so many social media apps for a person to get connected in this 21st century. Respondents (Gen X and Baby Boomers) in Semi-Urban and Urban were familiar with apps like Facebook, WhatsApp, Telegram, Instagram, LinkedIn, Twitter, and YouTube and in Rural areas, they are restricted to Facebook, WhatsApp, and YouTube only.

4.1.11 Helpfulness of social media

Social media is a boon as well as a curse (Saini, 2020). People can utilize it according to their needs and wants. It has made lives simple as they get everything in one place but on the other hand, there are scenarios where people were badly affected by the excess use of social media.

Among the respondents from Rural, Semi-Urban, and Urban areas it was found that old adults (Gen X and Baby Boomers) found that social media was not helpful for them in any way.

4.1.12 Knowledge to pay bills and transfer money through smartphones

Activities like paying electricity bills, water bills, phone bills, etc. which were paid going to the concerned places during the olden days are now been paid through one button.

Women respondents from Rural and Semi-Urban areas belonging to Gen X and Baby Boomers are not at all aware of online bill payments and transferring money, whereas Urban areas had respondents being well aware of bill payments and transferring money using smartphones.

4.1.13 Download and use apps on digital devices without anyone's help

In our research, we wanted to test was the ability of an old aged person to install and use the applications in their digital devices, normally it is not an easy task for people who are not digitally literate.

Among the responses we received it was found that respondents from Rural and Semi-Urban areas were not capable of downloading and using the applications all by themselves and the Urban area's response was contradicting.

4.1.14 Capability of using a digital device

Normally it is implied that Gen X and Baby Boomers are not very capable of using a digital device even if they have the interest to use it. This incapability would be mainly because of their lack of knowledge about digital devices or their educational qualification.

From the responses we received in Semi-Urban and Urban areas, we were able to understand that women in Gen X and Baby Boomers age group are capable of using the digital devices, and contradicting to the above statement in Rural areas none of the respondents were capable of using the digital devices.

4.1.15 Interest in using a digital device

Old adults are not using many digital devices maybe because of the digital less lifestyle that they had led during their young age (Lancaster University, 2018).

Responses received reveals that women in the age group of Gen X and Baby Boomers from Semi-Urban and Urban areas were interested in using digital devices, whereas respondents from Rural areas lacked the interest in the usage of digital devices.

4.2 Statistical analysis

The objective is to ascertain the relationship between the usage of social media among the women of Gen X and Baby Boomers and in alignment, the below is hypothesis is to understand the impact of women Gen X on social media usage.

$$H_{10} : \beta_1 = 0$$

H1a : $\beta_1 \neq 0$.

H1₀: There is no impact of digital literacy on social media usage among the women Gen X

H1_a: There is an impact of digital literacy on social media usage among the women Gen X

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.470 ^a	.221	.212	1.28304
Note: a. Predictors: (Constant), age				
b. Dependent Variable: usage				

Table 3: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	41.136	1	41.136	24.989	.000 ^b
	Residual	144.864	88	1.646		
	Total	186.000	89			
Note: a. Dependent Variable: usage						
b. Predictors: (Constant), age						

Table 4: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.989	.301		6.606	.000
	Age	.599	.120	.470	4.999	.000
Note: a. Dependent Variable: usage						

From the above test result, the P-value is less than 0.05 (sig 0.000) & R square moderate level of 0.221 (Cohen, 1992; Snyder & Lawson, 1993; Thompson, 2002), the null hypothesis being rejected & accept the alternative hypothesis. Hence, it can be inferred that there is a significant relationship between the usage of social media among women of gen x and baby boomers.

The other objective is to establish a measured structured model which is to corroborate conceptualization as stated earlier in theoretical discussion. One of the methods to validate the hypothesis in the structural equation model is incremental fit indices (McDonald & Ho, 2002; Hooper *et al.*, 2008).

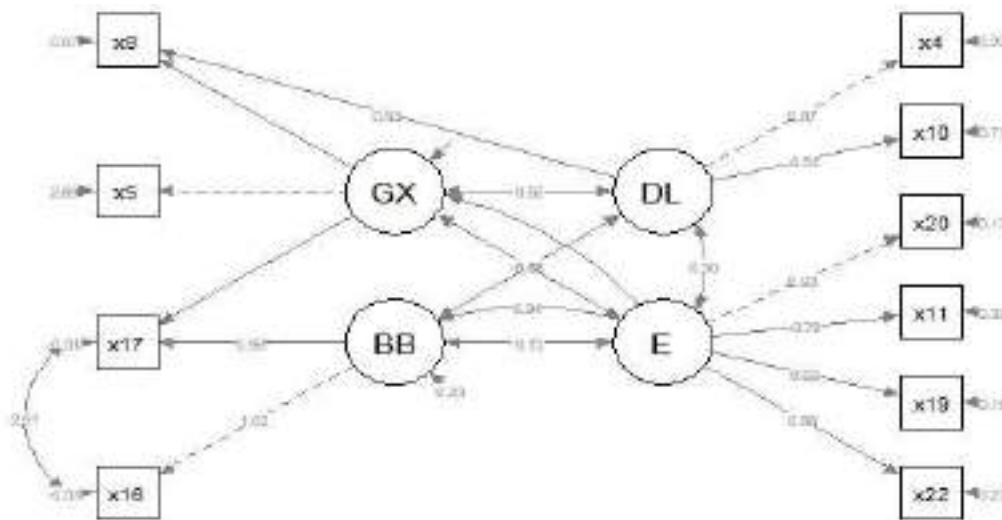
H2₀: $r = 0$

H2_a: $r \neq 0$

- H2₀: There is no correlation among the output of internet usage viz., perceived usefulness, ease of use, efficiency, and language
- H2_a: There is correlation among the output of internet usage viz., perceived usefulness, ease of use, efficiency, and language

Sl.no.	Model Fit Indices	Threshold level	Actual result	Analysis
1	Absolute Fit Indices 1. P value 2. Relative χ^2 3. SRMR	<0.05 (Barrett 2007) <2.0 to > 5.0 (Wheaton et al 1977; Tabachnick & Fidell 2007) < 0.08 (Hu & Bentler 1999)	0.00 5.00 0.071	Fit model
2	Incremental Fit Indices 4. NFI 5. CFI	> 0.80 (Bentler and Bonnet, 1980) > 0.90 (Tabachnick & Fidell 2007)	0.90 0.91	Fit model
3	Parsimony Fit Indices 6. PGFI	< 0.5 (Mulaik et al, 1989)	0.35	Fit model

Figure 2: Path analysis



Where,

Aberration	Description	Aberration	Description
x20	Perceived Usefulness	x8	Knowledge about digital literacy
x11	Ease of use	x4	The ability to use the computer
x16	Reliability	x5	The ability to use the internet
x19	Efficiency	x10	excited to learn new things on the internet
x22	Language	DL	Digital Literacy
x17	Security	GX	Generation X
BB	Baby Boomers	E	Output of the internet usage

From the above table and figure result, the null hypothesis can be rejected by accepting alternative hypothesis as all mentioned variables are correlated & fulfilling the model fit indices. Therefore, it can be inferred that there is a significant correlation between digital literacy and social media usage among the selected population.

5.0 Findings

- This study helps us to understand the perceived use of digital literacy amongst women of Gen X and Baby Boomers. The survey is confined to women from the age group of Gen X and Baby Boomers and data from Rural, Semi-Urban, and Urban areas have been collected. A few of the findings from this study are as shown below.
- Women in Gen X and Baby Boomers age groups in Rural and Semi-Urban areas have very limited knowledge about computer literacy and internet literacy whereas respondents from Urban areas have to contradict opinions on the knowledge of computer and internet literacy.
- The smartphone was found to be the most commonly used digital device among the respondents, with the majority of respondents using it for calling and a small percentage using it for social media, as well as sending and receiving money, emails, listening to music, and texting. According to the findings, the majority of respondents spent 0-3 hours on digital devices.
- In our study Facebook, WhatsApp, and YouTube were found to be the most familiar social networking apps among women of Gen X and Baby Boomers in Rural, Semi-Urban, and Urban areas. Respondents from Rural and Semi-Urban areas were not using social media for knowledge or learning purposes; they found it not beneficial, whereas in urban areas respondents were using social media as a source of gaining knowledge and they believe spending time on social media was helpful.
- Respondents from Rural and Semi-Urban areas (Gen X and Baby Boomers) have very limited knowledge of paying bills and transferring money via smartphones due to a lack of understanding of the procedure, whereby it was antithetical when it comes to Urban areas.
- In continuation of the above descriptive analysis, there is significant impact of age and level of education on the level of usage of digital platforms.
- The study also identifies the relationship between the efficiency, language, security and reliability having plays a vital role in determining the internet usage pattern.
- It can also be noted that GenX (0.53) and Baby Boomers (0.13) differs in digital literacy, notwithstanding the GenX have more 'ability to use the internet' (2.69)
- The model suggest that the perceived risk is very important with which the respondents (0.93) were curious on usage of digital platforms.
- The hypothesis testing throws an insight that 'there exists a relationship of the women Gen X on social media usage' (r -square of 0.22).

- The inferential statistics also points that there is a significant correlation between digital literacy and social media usage among the selected population viz., the ability to use the computer The ability to use the internet & excited to learn new things on the internet

6.0 Suggestions

According to the findings, women in Gen X and Baby Boomer age cohorts in Rural and Semi-Urban areas lack knowledge of digital literacy and the use of social networking apps. To overcome this scenario, the government, non-governmental organizations (NGOs), and Corporate Social Responsibility (CSR) activities should take the initiative to implement digital knowledge in Rural and Semi-Urban areas. This can be accomplished by providing smartphones, tablets, and laptops to schools and colleges in underserved areas, and the government can hold free workshops and training programs to educate people about the importance of digital literacy in today's fast-paced digital world.

7.0 Implications for Business Decision Makers

The lack of digital literacy is found mostly among women of Gen X and Baby Boomers in Rural and Semi-Urban areas. The primary problem with digital usage is that they lack in understanding it because they have all grown up without the help of technologies at a young age. As per the research studies and results, respondents from Rural, Semi-Urban, and Urban areas have a different perspective towards digital literacy and usage of digital apps.

Respondents (Gen X and Baby Boomers) from Rural and Semi-Urban areas lack knowledge about digital literacy and the use of social networking apps. Many people in Rural areas are uneducated, so they face language barriers and are insecure about using digital devices. Older adults (Gen X and Baby Boomers) from Rural and Semi-Urban areas believed that using digital devices and social media was not beneficial to them in terms of acquiring knowledge or learning. In contrast to that, respondents in the Urban area considered digital devices and social media to be beneficial, and they were gaining knowledge by using them for learning purposes. The extensively used and familiar social media apps among women of Gen X and Baby Boomers were Facebook, WhatsApp, and YouTube.

The overall study states that respondents in Urban areas were digitally literate, excited about learning new things on the internet, and more positive about spending time on social media to gain knowledge, while respondents in Rural and Semi-Urban areas were apathetic and pessimistic about digital technology.

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A Study on the Influence of Customer Relationship Management on Service Quality and Customer Loyalty

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ABSTRACT

India is one of the largest restaurant industries in the world. It attracts venture capitalists, marketing Gurus social media specialists and experienced chefs across the world. According to Indian Restaurant Congress, Indian food service industry is worth nearly 75 thousand crore and it is growing at a healthy compounded annual growth rate of 17%. This food service industry is likely to reach 1, 37,000 crore by 2015. For many years the food business seen as a tempting and lucrative opportunity reflected to the fact opening a restaurant tops the wish list of many people in India. Due to the demand and expectations of the customers and government norms made the industry move towards organizing on its own. But still 70% of the current food service industries are in unorganized sector. According to the president of Franchise India, expects the organized food service industry will grow at a rate of 20-25% per annum. If this is the scenario, we want to understand what a customer really expects from a restaurant, the answer will help the owner to develop a sustainable innovative restaurant. We are trying to develop a modal between service quality and customer loyalty to understand how these can be used for innovation and sustainability of the restaurant in the industry. The research will cover selected restaurants in Palakkad and Coimbatore for the purpose. The outcome of the study will throw some light on this industry which will be helpful for the upcoming entrepreneurs in this food service industry.

Keywords: *Customer relationship management; Service quality; Customer loyalty.*

1.0 Introduction

Customer relationship management is an approach to manage a company's interaction with current and potential customers. It uses data analysis about customers' history with a company to improve business relationships with customers, specifically focusing on customer retention and ultimately driving sales growth. CRM is a process or methodology used to learn more about customers needs and behavior in order to develop stronger relationship with them. The ultimate goal is to transform customer relationships into greater profitability by increasing repeat purchase rates and reducing customer acquisition costs. The food processing industry in India is a sunrise sector that has gained prominence in recent years.

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Availability of raw materials, changing lifestyles and relaxation in policies has given a considerable push to the industry's growth. This sector is among the few that serves as a vital link between the agriculture and industrial segments of the economy. Strengthening this link is of critical importance to improve the value of agricultural produce; ensure remunerative prices to farmers and at the same time create favorable demand for Indian agricultural products in the world market. A thrust to the food processing sector implies significant development of the agriculture sector and ensures value addition to it. The Indian food processing industry holds tremendous potential to grow, considering the still nascent levels of processing at present. In the current times, restaurants have taken over the task for social gatherings, offering novelty and convenience at the same time. Independent outlets therefore continue to dominate the industry in India.

Service quality is a comparison of expectations with performance. A business with high service quality will meet customer needs whilst remaining economically competitive. Improved service quality may increase economic competitiveness. This aim may be achieved by understanding and improving operational processes; identifying problems quickly and systematically; establishing valid and reliable service performance measures and measuring customer satisfaction and other performance outcomes.

The concept of customer loyalty has been considerable attention in the marketing literature over the past few years. In any industry, as the competition is becoming intense, the need for retaining the existing customers has become a top priority for all business. Researches show that it costs five times more to acquire a new customer than to retain an old one.

2.0 Scope of the Study

The scope of the study confined to provide a better understanding to identify the role of CRM on customer loyalty and service quality in hotel industry. Based on the results it is understood that CRM is considered to be among the best strategies and practices for hotels to improve their performance and ultimately to ensure their long-term business survival. It is also found that Regular guests are offered personalized services and privilege cards to avail special facilities and discounts. CRM helps in getting a holistic view of the customer and helps in offering customized products and enhanced value depending on the worth of the customer.

2.1 Objectives of the study

- To study the influence of the State on Service Quality, CRM and customer loyalty dimensions.
- To study the influence of the frequency of visits to restaurants on service quality, CRM and customer loyalty dimensions.

2.2 Limitations of the study

The study has covered a very small portion of the population. Hence generalization of the study may not be possible. Due to time constraints the sample were collected only from 2 restaurants in Coimbatore and four from Palakkad.

3.0 Review of Literature

According to Bhattacharya *et al.*, (2011), states are aiming at establishing a concrete understanding of the relationship of customer satisfaction and image of the firm with customer loyalty. Taking into consideration the fierce competitive market which the restaurant sector is witnessing the researchers believe that the current study will serve as a significant help to both academicians and marketers equally. The investigation was carried out to understand which variables of customer satisfaction and image positively determine customer loyalty towards in the fast food market. The study used a data collected from fast food outlets in the city of Chennai with the implications from the findings being that loyalty is positively influenced by image of the restaurant and customer satisfaction towards housekeeping, food & beverages, reception and price”.

According to Haghighi *et al.*, (2012), there are some factors affecting customer loyalty in the restaurant industry. Data was collected using questionnaire distributed in 10 randomly selected branches of Boof Chain Restaurant in Tehran. In each branch, 40 customers were selected for the study. Ultimately, the research sample consisted of 268 customers. Structured equation modeling was used for data analysis and hypothesis testing. The obtained results show that food quality, service quality, restaurant environment, and perception of price fairness had a positive impact on customer satisfaction, but the impact of restaurant location on customer satisfaction was not confirmed. Also, food quality, service quality, and perception of price fairness had a positive effect on customer trust. The results show that food quality is the most important factor affecting customer satisfaction and trust in Boof Chain Restaurants.

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4.0 Research Methodology

A structured questionnaire was developed and tested for collection of data. For the research, the researcher focuses on primary data. A stratified random sampling is used for sample selection. The respondents were met and collected data in person when they were coming out of the restaurant for the study. The collected data was analyzed and using one way-ANNOVA analysis variance.

4.1 Data analysis

Table 1.1: One Way-ANOVA between the State on Service Quality, CRM and Customer Loyalty Dimensions

Dimensions	Anova					
	State	Mean	Sd	Df	F	Sig
Reliability	Tamil Nadu	3.45	.759	1 894	1.072	.301
	Kerala	3.40	.753			
	Total	3.43	.757			
Responsiveness	Tamil Nadu	3.29	.765	1 893	.026	.872
	Kerala	3.28	.795			
	Total	3.29	.776			
Tangibility	Tamil Nadu	3.55	.776	1 894	1.587	.208
	Kerala	3.48	.734			
	Total	3.53	.761			
Assurance	Tamil Nadu	3.48	.706	1 893	.125	.724
	Kerala	3.46	.741			
	Total	3.47	.719			
Empathy	Tamil Nadu	3.43	.688	1 894	1.415	.235
	Kerala	3.37	.794			
	Total	3.41	.729			
Key customer focus	Tamil Nadu	3.45	.691	1 894	.326	.568
	Kerala	3.42	.734			
	Total	3.44	.707			
Technology	Tamil Nadu	3.59	.645	1 894	1.069	.301
	Kerala	3.54	.691			
	Total	3.57	.662			
Business process	Tamil Nadu	3.27	.717	1 894	1.361	.244
	Kerala	3.22	.768			
	Total	3.25	.736			
Knowledge Management	Tamil Nadu	3.48	.704	1 894	.038	.845
	Kerala	3.47	.744			
	Total	3.47	.719			
Behavioural	Tamil Nadu	3.29	.732	1 894	3.016	.083
	Kerala	3.20	.774			
	Total	3.26	.749			
Attitudinal	Tamil Nadu	3.61	.697	1 894	.779	.378
	Kerala	3.57	.696			
	Total	3.59	.696			

Source: Author's Primary Collection and Calculation

4.2 Interpretation

From the above analysis of one way ANOVA between the State with the dimensions of Service Quality, Customer Relationship Management and Customer Loyalty, it is interpreted that all the calculated F values are less than the table value. Hence we accept the null hypothesis at 95% confidence level.

Table 1.2: One way-ANOVA between the Frequency of Visits to Restaurants on Service Quality, CRM and Customer Loyalty Dimensions.

ANOVA						
Dimensions	Frequency of visits	Mean	Std. Deviation	df	F	Sig
RELIABILITY	Less than 2 Times	3.12	.835	4 891	5.446	.000
	2-4 Times	3.41	.861			
	5-7 Times	3.48	.691			
	8 and above Times	3.34	.829			
	5	3.55	.569			
	Total	3.43	.757			
RESPONSIVENESS	Less than 2 Times	3.07	.964	4 890	3.822	.004
	2-4 Times	3.21	.866			
	5-7 Times	3.37	.692			
	8 and above Times	3.28	.855			
	5	3.38	.584			
	Total	3.29	.776			
TANGIBILITY	Less than 2 Times	3.46	.823	4 886	4.295	.002
	2-4 Times	3.49	.674			
	5-7 Times	3.53	.785			
	8 and above Times	3.31	.756			
	5	3.66	.801			
	Total	3.53	.761			
ASSURANCE	Less than 2 Times	3.27	.833	4 890	2.893	.021
	2-4 Times	3.45	.845			
	5-7 Times	3.51	.658			
	8 and above Times	3.42	.814			
	5	3.56	.475			
	Total	3.47	.719			
EMPATHY	Less than 2 Times	3.09	.737	4 891	7.166	.000
	2-4 Times	3.44	.791			
	5-7 Times	3.42	.655			
	8 and above Times	3.25	.786			
	5	3.53	.636			
	Total	3.41	.729			
KEY CUSTOMER FOCUS	Less than 2 Times	3.22	.832	4 891	5.668	.000
	2-4 Times	3.55	.780			
	5-7 Times	3.42	.676			
	8 and above Times	3.25	.695			
	5	3.46	.567			
	Total	3.44	.707			

ANOVA						
Dimensions	Frequency of visits	Mean	Std. Deviation	Df	F	Sig
Technology	Less than 2 Times	3.38	.727	4 891	6.328	.000
	2-4 Times	3.61	.684			
	5-7 Times	3.60	.611			
	8 and above Times	3.33	.782			
	5	3.65	.565			
	Total	3.57	.662			
Business Process	Less than 2 Times	3.22	.773	4 891	2.094	.080
	2-4 Times	3.22	.824			
	5-7 Times	3.15	.716			
	8 and above Times	3.39	.718			
	5	3.30	.627			
	Total	3.25	.736			
Knowledge Management	Less than 2 Times	3.27	.833	4 891	2.725	.028
	2-4 Times	3.45	.845			
	5-7 Times	3.50	.658			
	8 and above Times	3.44	.825			
	5	3.56	.468			
	Total	3.47	.719			
Behavioral	Less than 2 Times	3.21	.788	4 891	2.711	.029
	2-4 Times	3.20	.829			
	5-7 Times	3.16	.741			
	8 and above Times	3.39	.744			
	5	3.34	.631			
	Total	3.26	.749			
Attitudinal	Less than 2 Times	3.50	.703	4 891	2.240	.063
	2-4 Times	3.53	.754			
	5-7 Times	3.71	.703			
	8 and above Times	3.56	.718			
	5	3.63	.603			
	Total	3.59	.696			
Cognitive	Less than 2 Times	3.37	.786	4 891	1.382	.238
	2-4 Times	3.33	.796			
	5-7 Times	3.36	.659			
	8 and above Times	3.40	.849			
	5	3.47	.483			
	Total	3.39	.700			
Affective	Less than 2 Times	3.22	.784	4 891	1.680	.152
	2-4 Times	3.37	.728			
	5-7 Times	3.41	.651			
	8 and above Times	3.24	.794			
	5	3.36	.615			
	Total	3.35	.697			

ANOVA						
Dimensions	Frequency of visits	Mean	Std. Deviation	Df	F	Sig
Word of Mouth	Less than 2 Times	3.25	.748	4 891	2.413	.048
	2-4 Times	3.47	.809			
	5-7 Times	3.39	.633			
	8 and above Times	3.40	.719			
	5	3.50	.465			
	Total	3.44	.677			
Complaining Behavior	Less than 2 Times	3.26	.839	4 891	1.498	.201
	2-4 Times	3.36	.853			
	5-7 Times	3.25	.719			
	8 and above Times	3.30	.813			
	5	3.41	.558			
	Total	3.34	.748			
Trust & Commitment	Less than 2 Times	3.01	.702	4 891	2.575	.036
	2-4 Times	3.27	.975			
	5-7 Times	3.12	.702			
	8 and above Times	3.23	.906			
	5	3.26	.590			
	Total	3.22	.801			
Price	Less than 2 Times	3.09	.859	4 891	6.422	.000
	2-4 Times	3.37	.916			
	5-7 Times	3.43	.743			
	8 and above Times	3.22	.876			
	5	3.56	.754			
	Total	3.39	.842			
Corporate Image	Less than 2 Times	3.12	.652	4 891	7.011	.000
	2-4 Times	3.45	.704			
	5-7 Times	3.45	.521			
	8 and above Times	3.35	.682			
	5	3.51	.423			
	Total	3.43	.602			

Source: Author's Primary Collection and Calculation

1. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Reliability dimension of service quality, the calculated F value is 5.446 (Sig =0.000) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.
2. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Responsiveness dimension of service quality, the calculated F value is 3.822 (Sig =0.004) that is greater than the table value. Hence we the reject null hypothesis at 95% confidence level.
3. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Tangibility dimension of service quality, the calculated F value is 4.295 (Sig =0.002) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.

4. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Assurance dimension of service quality, the calculated F value is 2.893 (Sig =0.021) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.
5. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Empathy dimension of service quality, the calculated F value is 7.166 (Sig =0.00) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.
6. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Key Customer Focus dimension of CRM , the calculated F value is 5.668 (Sig =0.000) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.
7. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Technology dimension of CRM, the calculated F value is 6.328 (Sig =0.000) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.
8. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Business Process dimension of CRM , the calculated F value is 2.094 (Sig =0.080) that is less than the table value. Hence we accept the null hypothesis at 95% confidence level.
9. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Knowledge Management dimension of CRM , the calculated F value is 2.725 (Sig =0.028) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.
10. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Behavioral dimension of Customer Loyalty , the calculated F value is 2.711 (Sig =0.029) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.
11. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Attitudinal dimension of Customer Loyalty , the calculated F value is 2.240 (Sig =0.063) that is less than the table value. Hence we accept the null hypothesis at 95% confidence level.
12. The table of one way ANOVA between the frequency of visits to the restaurant with the Cognitive dimension of Customer Loyalty, the calculated F value is 1.382 (Sig =0.238) that is less than the table value. Hence we accept the null hypothesis at 95% confidence level.
13. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Affective dimension of Customer Loyalty , the calculated F value is 1.680 (Sig =0.153) that is less than the table value. Hence we accept the null hypothesis at 95% confidence level.

14. The analysis between the frequency of visits to the restaurant with the Word of Mouth of Customer Loyalty, the calculated F value is 2.413 (Sig =0.048) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.
15. The ANOVA table between the frequency of visits to the restaurant with the Complaining Behavioral dimension of Customer Loyalty, implies that the calculated F value is 1.498 (Sig =0.201) that is lesser than the table value. Hence we accept the null hypothesis at 95% confidence level.
16. Analysis of one way ANOVA between the frequency of visits to the restaurant with the Trust and Commitment dimension of Customer Loyalty , the calculated F value is 2.575 (Sig =0.036) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.
17. From the above analysis one way ANOVA between the frequency of visits to the restaurant with the Price dimension of Customer Loyalty , the calculated F value is 6.422 (Sig =0.000) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.
18. It is evident from the analysis of variance between the frequency of visits to the restaurant with the Corporate Image dimension of Customer Loyalty , the calculated F value is 7.001 (Sig =0.000) that is greater than the table value. Hence we reject the null hypothesis at 95% confidence level.

5.0 Conclusion

All the service industries invariably of their businesses have accepted service quality as one of the major factor which affects the satisfaction level of customers. A satisfied customer will bring or introduce new customers to the business .When compared to other service industries restaurant industry has discussed less on service quality on the business. When this study was started we had a small doubt, is service quality prevailing in un - branded restaurants? Because branded restaurants have their own standards of service delivery. These un- branded restaurants are run by family members based on their own wish and they will have their own idea of running business. And we thought that there will be a great difference between two states on service perceived. Fortunately the study has shown us customers are expecting and perceiving the service quality dimension invariably of the state which they belongs to. It was a welcome finding of this study except tangibility dimension all other dimensions are accepted equally by respondents of both the states.

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Tourism Industry – A Pandemic Struggle of Sustenance

Sheetal Renosh and Alex Rajesh**

ABSTRACT

Kerala Tourism Industry is struggling to come back with value addition on available resources. This study aims to determine how the tourism industry can be better targeted to improve the situation. The study indicates the COVID-19 crisis impact and measures taken by the stakeholders. The main income of Idukki has declined. Measures were taken by the hospitality industry, food, and beverage, or the spice industry defined as the extent to which tourists feel the desire to travel Idukki. To test the hypothesis direct interview method was used. Respondents were randomly divided into hotels, resorts, spice farmers, and tourist guides and asked to respond on the impact of Covid-19 and measures taken by them to improve the situation. The results showed a drastic decline in income since 2020 while the industry is coming back. These results suggest that any business needs preparation for the uncertainty both short term & Long term. Businesses always should consider multiple income sources.

Keywords: *Tourism; Industry; Pandemic; India; Covid, Kerala.*

1.0 Introduction

Overall tourism industry sustains millions of livelihoods directly or indirectly. Tourism plays in progressing the Justifiable Development including its association with conservational goals and culture. Therefore, any hit on the industry impacts the livelihoods of concerned people and their families associated with the industry.

The crisis showed the industry the opportunity to reconsider how tourism networks in societies, other commercial segments, and our natural resources and ecologies; to quantify and manage it better; to safeguard a reasonable supply of its benefits, and to develop the transition towards a nature friendly and resilient tourism industry.

The brief provides recommendations in five priority areas to cushion the massive impacts on lives and economies and to rebuild tourism with people at the center. It features examples of government support to the sector, calls for a reopening that gives priority to the health and safety of the workers, travelers, and host communities, and provides a roadmap to transform tourism.

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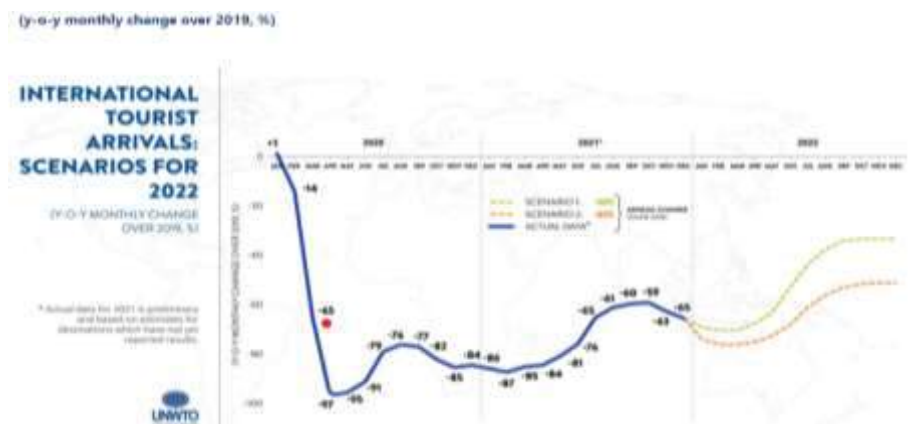
2.0 Economic Impacts (Ref – UNWTO)

- Tourism is one of the world’s major economic sectors. It is the third-largest export category (after fuels and chemicals) and in 2019 accounted for 7% of global trade.
- For some countries, it can represent over 20% of their GDP and, overall, it is the third-largest export sector of the global economy.
- Tourism is one of the sectors most affected by the Covid-19 pandemic, impacting economies, livelihoods, public services, and opportunities on all continents. All parts of its vast value chain have been affected.
- Export revenues from tourism could fall by \$910 billion to \$1.2 trillion in 2020. This will have a wider impact and could reduce global GDP by 1.5% to 2.8%.
- Tourism supports one in 10 jobs and provides livelihoods for many millions more in both developing and developed economies.
- In some Small Island Developing States (SIDS), tourism has accounted for as much as 80% of exports, while it also represents important shares of national economies in both developed and developing countries.

3.0 Impact on Livelihoods

- As many as 100 million direct tourism jobs were affected, in addition to sectors associated with tourism such as labour-intensive accommodation and food services industries that employ 144 million workers worldwide. Small businesses (which shoulder 80% of global tourism) are particularly vulnerable.
- Women, who make up 54% of the tourism workforce, youth, and workers in the informal economy are among the most at-risk categories.
- No nation will be unaffected. Destinations most reliant on tourism for jobs and economic growth are likely to be hit hardest: SIDS, Least Developed Countries (LDCs), and African countries. In Africa, the sector represented 10% of all exports in 2019.

Figure 1: International Tourist Arrivals in 2020 and 2021 and Scenarios for 2022



Source: UNWTO Statistics

4.0 Indian Perspective

The Ministry of Tourism is promoting the development of domestic tourism. The Tourism Authority has launched the Dekho Apna Desh initiative which has developed various promotional activities like webinars, online pledges, and Quiz programs to generate awareness among the public about the country and its tourism destinations/products. The initiative also is keen on promoting lesser-known destinations. DekhoApnaDesh is aiming for a mass reach via social media platforms and the website of the Ministry and also by the Domestic India Tourism offices.

Table 1: Foreign Tourists’ Arrival – India 2021

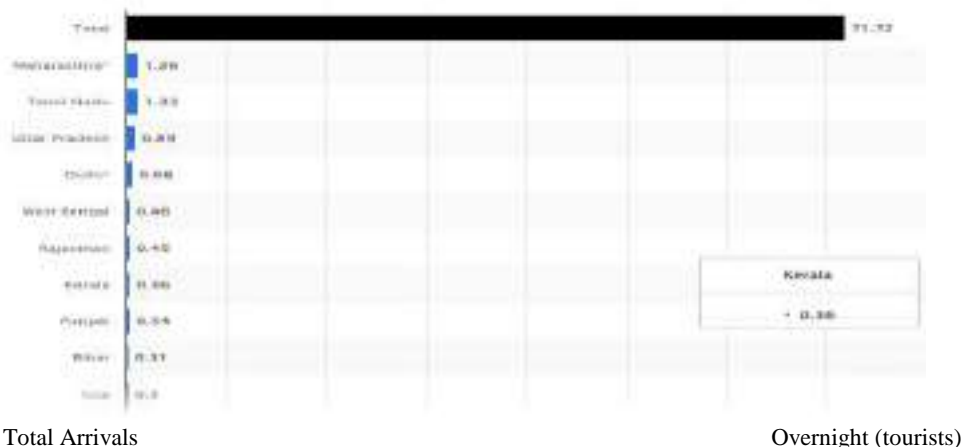
Month	Foreign Tourists Arrivals 2021
Jan	83822
Feb	99640
Mar	123179
Apr	69442
May	10307
Jun	29397
Jul	64566
Aug	84955
Sep	106704
Oct	181325
Total	856337

Source: Tourism Statistics – Incredible India – www.tourism.gov.in

The India Tourism Statistics 2022 is expected to release soon on the Ministry’s website. Below are the statistics of India Tourism Statistics 2021

The total number of Foreign Tourist Arrivals (FTAs) in India in 2020 was 2.74 million, with an Annual Growth Rate of -74.9%

Figure 2: Number of foreign tourist visits in India in 2020, by leading states (in millions)

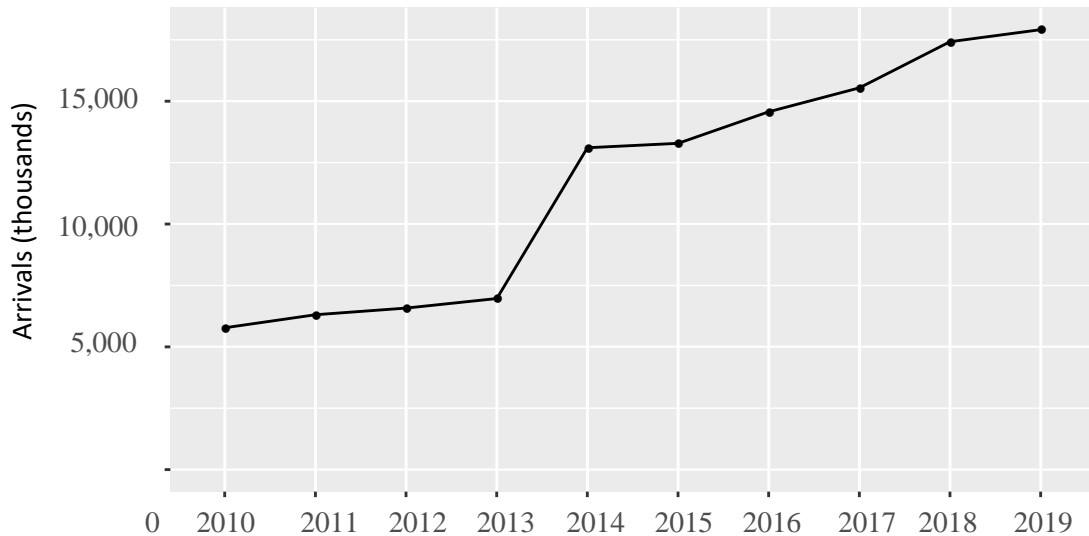


Source: Tourism Statistics – Incredible India – www.tourism.gov.in

The total number of Indian Nationals Departures from India in 2020 was 7.29 million with an Annual Growth Rate of -97.3%

The estimated foreign exchange earnings from Tourism in INR is 50136 Crore with an Annual Growth Rate of -76.3% and in US\$ is US\$ 6.958 Billion.

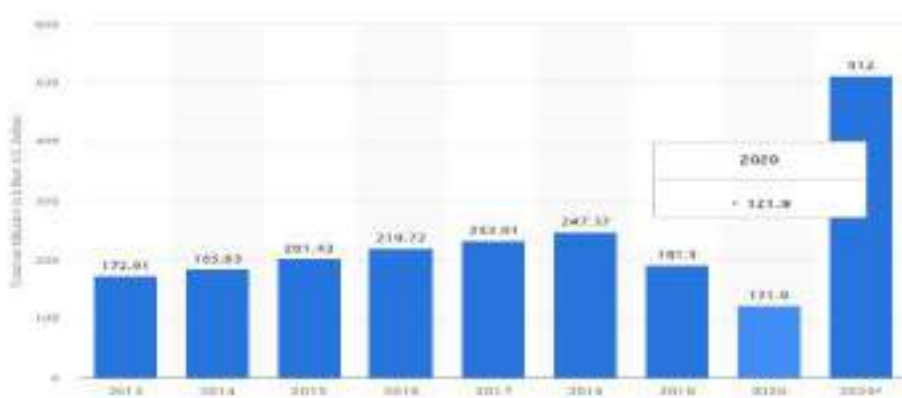
Figure 3:



Source: Tourism Statistics – Incredible India –www.tourism.gov.in

In 2020, the state with the highest number of foreign tourists in India was Maharashtra, with over 1.26 million visits. In the same year, the number of foreign tourist arrivals in India was around 71 million.

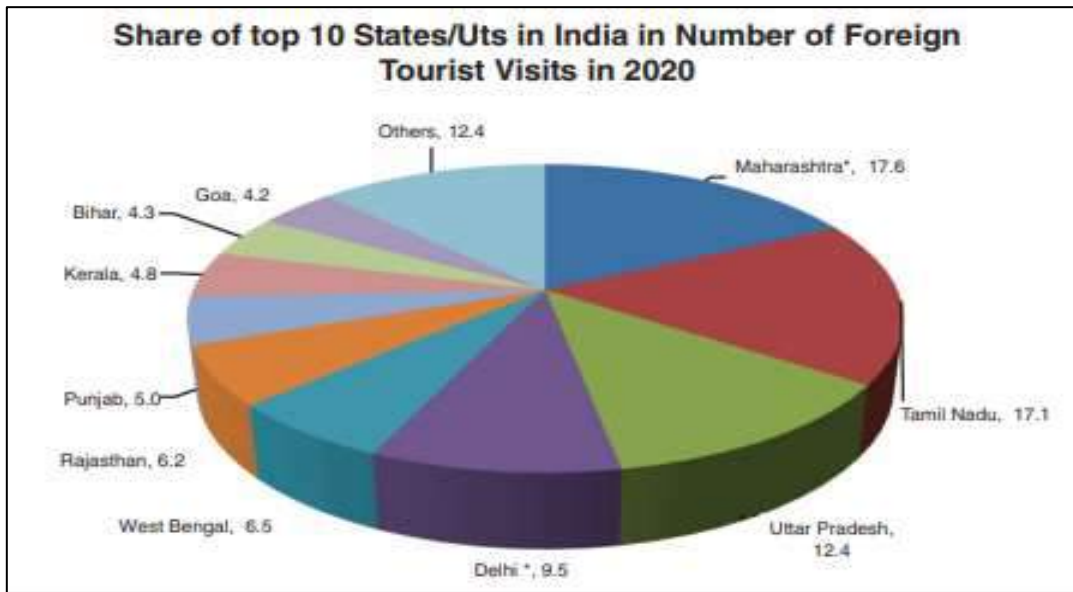
Figure 4: The Total Contribution of Travel and Tourism to GDP in India from 2013 to 2020, with an Estimate for 2029(in Billion U.S. Dollars)



Source: Tourism Statistics – Incredible India – www.tourism.gov.in

In 2020, the travel and tourism industry in India contributed around 122 billion U.S. dollars to the country’s GDP. In 2017, the country welcomed over 10 million foreign tourists, generating foreign exchange earnings of over 27.31 billion U.S. dollars.

Figure 5: Kerala Significantly Contributes to the Indian Revenue from its Tourism Sector



Source: Tourism Statistics – Incredible India –www.tourism.gov.in

5.0 Contribution of Idukki District in Kerala Tourism

The district has tremendous tourist potentialities and revenue earning possibilities. The Periyar Wild Life Sanctuary at Thekkady is in the district and it ranks the foremost among the places of tourist attractions in Kerala.

Situated around Periyar Lake, is a paradise to tourists situated in the jungle of the Western Ghats. The wildlife sanctuary spreads around 673 sq. km and is located at a height of 900 to 1800 meters above the mean sea level area.

The wild animals generally seen are elephants, bison, sambur, monkeys, and wild bear. Tigers are foraging in the area but to have a glimpse of them is a matter of luck for the visitors.

Side attractions are tea gardens are located around this place. Peermade, 43 km. below Thekkady on the road to Kottayam. The Tourist Bungalow at Peermade offers excellent facilities and good cuisine. The destination is perfect to hike and trek

Kerala's Tourism Development Corporation has provided different types of accommodation for visitors.

Table 2: Attractions in Idukki

1	Hill View Park	13	Meesapulimala	25	Pothanmedu View Point
2	Kulamavu Dam	14	Ayyappancoin Hanging Bridge	26	Eravikulam National Park
3	Idukki Arch Dam	15	Malankara Dam	27	Cheeyappara Waterfalls
4	Painavu	16	Valara Waterfalls	28	Vagamom
5	Nandukani	17	Anchuruli Waterfalls	29	Paruthumpara
6	Anakkara	18	Cheruthoni Dam	30	Kanthalloor
7	Keezharkuthu Falls	19	Panchalimedu	31	Vattavada
8	Periyar National Park	20	Ramankkalmedu	32	Kuttikanam
9	Thommankuthu Falls	21	Anamudi Shola National Park	33	Chathuranga View Point
10	Mangaladevi Temple	22	Powerhouse Falls	34	Chathurangapara
11	Murikkady	23	Anamudi Peak	35	Suryanelli
12	Thumpachi Kalveri Samuchayam	24	Mattupetti Dam		

Source: Department of Tourism, GoK

Table 3: Kerala Tourism at a Glance

Domestic Tourist Arrival (Nos) in 2020	49,88,972
Domestic Tourist Arrival (Nos) in 2019	1,83,84,233
International Tourist Arrival (Nos) in 2020	3,40,755
International Tourist Arrival (Nos) in 2019	11,89,771
Total arrivals (Nos) in 2020	53,29,727
Total arrivals (Nos) in 2019	1,95,74,004
Total Earnings Generated (crore) in 2020	₹11,335.96 crore
Total Earnings Generated (crore) in 2019	₹45,010.69 crore
Foreign Exchange Earnings (crore) in 2020	₹2799.85 crore
Foreign Exchange Earnings (crore) in 2019	₹10271.06 crore
Earnings from Domestic Tourists (crore) in 2020	₹6025.68 crore
Earnings from Domestic Tourists (crore) in 2019	₹24785.62 crore

Source: Department of Tourism, GoK

Ernakulam is the leading district based on foreign tourist arrivals to Kerala with a contribution of 41.58%. The leading district of Ernakulam and second-standing district Thiruvananthapuram contribute 80.11% of the total Tourist Arrivals to Kerala. Other leading districts are Idukki, Alappuzha, and Kottayam. Tourist arrivals to these five districts constitute 93.81% of the total arrivals to Kerala.

The tourism sector rebounded strongly in 2019 after the 2018 floods and witnessed 8.52 percent growth in foreign tourist arrivals and 17.81 percent growth in domestic tourist arrivals as compared to 2018 figures. The foreign exchange earnings from tourism in the year 2019 was ₹10,271.06 crore and domestic tourist earnings was ₹24,785.62 crore. Total earnings including direct and indirect means in 2019 was ₹45,010.69 crore showing an increase of 24.13 percent over 2018. One of the sectors that are the hardest hit by the Covid-19 pandemic is the tourism sector. The loss in earnings in tourism is in the range of ₹20,000 crores to

₹25,000 crores over the nine months of 2020. The Government announced a Covid loss assistance scheme to support the stakeholders in the tourism industry for the revival of the tourism sector.

The State Government has announced one-time financial assistance of ₹10,000 to 328 tourist guides who are rendered jobless because of the pandemic and a one-time maintenance grant of ₹80,000 to ₹1.20 lakh to houseboats based on the number of rooms in them. The relief was also provided to the homestays, which have been moved from the commercial category to the residential category. This allows the facility some relief in the house tax amount to be remitted to the local bodies. Administrative sanction of ₹32.80 lakh had been given to assist approved tourist guides. After construction works were allowed as per the guidelines, there was a concerted effort to complete the infrastructure creation project at major tourism.

6.0 Crisis Managed Well

The pandemic had forced the industry stakeholders to discover and analyze other suitable technologies to restart the industry and aim to get consumer trust. Initially, along with the industries, even the Government was in a shock and was vigorously struggling to bring in strategies to improve the situation. Confidence was that the tourism industry has previously been quick to bounce back from the shocks of epidemics, pandemics, and global crises. However, governments soon realized that the impact of COVID-19 is one of its kind and there is no evaluation to a future date that could say that the industry will come back to the same capacity as in past. It was a phase when the concerned authorities were on the notion that the pandemic is causing a permanent setback for the industry.

The measures Government and the authorities collectively took to build an atmosphere in which they attract investors. Bringing out the dead funds was one of the strategies. Investors got a variety of opportunities such as relaxing related laws, funding of loans for special projects, etc. Governments realized the importance of including and promoting the local businesses by infusing their business to the tourism businesses. This improved the feeling of belongingness to the local vendors and Small-medium businesses. It was observed that local economies proactively contributed by working together and through social work for the betterment of their locality. Be it Cleaning the premises to rebuilding and restructuring the business to improve, attract, and built confidence among the customers. On that note, the rural segment of the industry saw a better phase of recovery as compared to the urban segment.

The support from the government, and more importantly the role of the local businessmen with local belongingness, showed a new way for the transformation of the tourism industry. The challenge for large-scale industries was to connect with local supply markets to minimize the costs. Their overall operations on the other hand had to revive. This included sourcing more resources locally, be it food, raw materials, service providers, or the

composition of the workforce. Now the focus of the tourists is less popular, less inhabited regions that gave a sense of safety as far as the pandemic spread is concerned.

Flexibility from all sides of the value chain changed the tourism industry into the version that elements sustainable tourism, climate action, societal well-being, and involvement of local people. COVID-19 has to lead to positive outcomes for the tourism industry.

Post-Covid relaxation in the imposed restrictions is helping the industry to come back at a faster pace. The issues faced were somewhat handled by the stakeholders. Restrictions on overseas travel for international students, business travelers, political leaders, etc., were solved using technologies like video-conferencing.

Concerning NCBI article published in December 2020 ref below figure. Future researchers may test the resilience-based framework. More or less the study talks about the revival of the tourism industry where the major lockdown and restrictions are a boon to the industry and not a curse. It's only that the industry came to a halt but in many ways, the industry has transformed into a post-pandemic version of itself giving way to the small-scale business which is the major part of the industry.

The tourism industry is always considered a major cause and carrier of the novel coronavirus that triggered the outbreak of COVID-19. The unmanageable practices of the industry didn't help the cause of justifiable living worldwide. The pandemic had nearly brought the global tourism industry to a pause. All stakeholders in the industry worked together to make the industry adequately strong to deal with the disaster. Based on the studies conducted to understand the tourism industry in the context of COVID-19, NCBI proposed a resilience-based framework for the industry. Through such frameworks, researchers were confident that the suggested resilient approach from governments, market players, technology innovators, and the workforce employed in the industry, the tourism sector may end up evolving in a much more sustainable way post-pandemic. The statement is true to that fact that considering same factors with the current development the Kerala tourism has shown. The involvement of local communities was immensely critical in this journey, as the restrictions on international travel took a longer halt than anticipated. Such developments had widened not only the base of the tourism industry but also opportunities for less-developed tourism spots to grow further. The large-scale tourism segment needed a restart to survive in post-pandemic times. Still, acting in line with our resilience-based framework, small-scale players certainly emerged victoriously and ensure the well-being of the society at large while also facilitating sustainable tourism.

A resilience-based framework for the new global economic order suggested after a study by NCBI

7.0 Few Things the Industry Learned During the Crisis

7.1 Budgeted branding

While many industries are prioritizing cutting budgets to reserve finance, they might forget that marketing needs to be funded. Travel entities essentially should continue to show

presence in the market. Any activity can be emotionally marketed to stay in minds of the customer.

7.2 Easy channel for contact

As travelers around the world, are messed up with their travel plans. It is important to have an easy channel for contact so that clients reach them easily.

- Consider Competition and Collaboration: The businessmen, directly and indirectly, a part of the tourism industry should join hands together to cooperate, create strategies, etc to attract and serve the travellers.
- Easy contactless transactions: Easy contactless transactions in terms of reservations, delivery, etc to be considered.
- Digital media: Using digital media for marketing, payments, etc. is considered to be the reliable safe, and cheap medium for transactions.
- Emotional Marketing: The business units have learned to do emotional marketing and have learned to open up their stories to clients. This gives a personal touch to the traveler's memory.
- Learning and strategy building: The pandemic lockdown has given way for businessmen to think differently and strategize plans like to invest in one place or different areas to have a plan to move forward and the tools to make an impression and stand out in the crowd.
- Safety, Hygiene, and Health: As we are aware health and its safety must be the prime factor to consider hereafter.
- Online presence: The market is at your fingertips. Presence online is essential to brand, to know client behavior, Target audience, Competitor actions, and so on.
- Regular touch with Government or commercial assistance: There is a need to cut down expenses and also avail Government schemes that are beneficial for business.
- Partnering with influencers: As social media marketing is in trend and is much more efficient to reach the target audience. This is one of the options.

8.0 Role of Kerala Government

The State Government has announced one-time financial assistance of ₹10,000 to 328 tourist guides who are rendered jobless because of the pandemic and a one-time maintenance grant of ₹80,000 to ₹1.20 lakh to houseboats based on the number of rooms in them. The relief was also provided to the homestays, which have been moved from the commercial category to the residential category. This allows the facility some relief in the house tax amount to be remitted to the local bodies. Administrative sanction of ₹32.80 lakh had been given to assist approved tourist guides. After construction works were allowed as per the guidelines, there was a concerted effort to complete the infrastructure creation project at major tourism spots.

9.0 Conclusion

Kerala Tourism has much more to offer after a comeback right from the variety of cuisines on the plate to the revamped thought of warm hospitality and emotional connection with the traveler. Indeed, the industry is open for all and the God's own country has started to yield with the new thinking.

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The Impact of Financial Leverage on Firm's Profitability

Krithi Rajendran*

ABSTRACT

Risks and returns are two key considerations while firms make decision. Since economic environment is becoming more open, the diversity of finance is promoted; therefore, the studies on the impact of leverages on firm operation and corresponding solutions are significant. There have been several researches focusing on this topic to find out the relationship between financial leverage and firm performance. Finance is a body of principle and theories, which deals with the raising, and acquiring of funds on reasonable terms and use of money by the acquirer

Keywords: *Financial leverage; Firms' profitability; Firm performance; Operating leverage.*

1.0 Introduction

The indispensable intention to carry out a research is to acquire knowledge. Information is the base for knowledge. The preparation of a research report is the end result of a study. The project is based on the study of financial leverage and the work was carried at "The Western India Plywoods Ltd"- Kannur. The work provided the researcher, an opportunity to understand the financial strength and weakness, EBIT, EPS, etc.

Finance is a body of principle and theories, which deals with the raising, and acquiring of funds on reasonable terms and use of money by the acquirer.

In the money oriented economy, finance is one of the basic foundations of all kinds of economic activities. It is a master key, which provides access to all the sources for being employed in manufacturing and merchandising activities. It is rightly said that, "business needs money to make more money". Efficient management of every business enterprise is closely linked with efficient management of finance. Hence, a well-knit financial system directly contributes to the growth of the economy. This project report gives an overview of the analysis of financial leverage.

1.1 Leverages

Leverage is used to describe the firm's ability to use the fixed cost asset or magnify to the returns to its owner. A high degree of leverage implies that there will be a large change in profit due to a relatively small change in sales and vice versa. So higher the leverage higher the risk and higher is the expected return.

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James Horne has defined leverage as “ the employment of an asset or funds for which the firm pays a fixed cost or fixed return otherwise we can say how one variable affects the other variable”. The firm is not required to pay fixed return, there will be no leverages.

Leverage refers to the relationship between two inter related variables, with reference to business firm; these variables may be cost output, sales and revenue earnings before interest and taxes, EPS etc.

Leverages can be divided into the following category:

- Operating leverage
- Financial leverage
- Combined leverage

2.0 Objective of the Study

- To examine the pattern of operating, financial and combined leverage and its impact on the overall profitability of WIP ltd.
- To find out those factors affecting profitability in order to increase profit.

2.1 Limitations of the study

Every study has got its own limitations towards it. Though I tried to come out of limitation it persisted. Some of the limitations during the study;

- As the figures are taken from the balance sheet and the profit and loss account, the decision made is restricted to the figures mentioned in the report or the data gathered.
- Financial management is a critical and vital area in the administration of the company. But one cannot get all information some facts are kept secret.

It does not look into areas such as marketing performance, investment decisions, and purchasing decisions

3.0 Literature Review

A lot of research has already been conducted on the impact of financial leverage on firm profitability. Titman & Wassels (1988) concluded in his study that firms which use their earnings instead of taking outside capital earn more profit because of less leverage as compare to the firms which rely more on outside capital which increase their leverage. Firm performance can be depicted by the price of its stock. If stock price of the firm is high than firms prefer to issue equity instead of taking outside capital that helps them to maintain their leverage. Wald (1999) in his research study argued that debt to assets ratio has significant negative relation with the firm profitability. He did his study on the firm’s capital structure which operates in United State, United Kingdom, Japan, France, and Germany. He used firm size, growth and firm’s riskiness as explanatory variables.

According to Sheel (1994) in his study also supported the negative relation between debt to assets ratio and firms past profitability. He used cross sectional regression analysis to

study the leverage behavior of 32 firms in two industry groups, Hotel industry and manufacturing sector was examined. His findings confirmed that all leverage determinants except firm size are significant in explaining leverage variations in debt behavior. Eunju & Soocheong (2005) studied the relationship between profitability, financial leverage and size of the firm in restaurant industry. He took study period from 1998 to 2003 by using ordinary least square method. The aim of this study was to analyze the association between financial leverage and restaurants firm profitability and risk. For the sake of the achievement of objective of this study, he made three hypotheses. The first hypothesis was restaurant firms using a lower level of financial leverage have higher profitability. If a restaurant firm has a higher level of financial leverage than it has to spend large amount as interest expense despite the business situation. Second hypothesis was; firms with a higher level of financial leverage are riskier than those with a lower level of financial leverage. In his study he applied return on equity as a measure of profitability and financial leverage as a ratio of long term debt to total assets and total assets as firm size. Results of the study suggested that the restaurant firms having large assets were more profitable than small firms and the sign of financial leverage variable was negative which indicated that firms with higher debt rates were less profitable.

Mangalam & Govindasamy (2010) analyzed and understand the impact of leverage on the profitability of the firm by investigating the relationship between the leverage and the earning per share. He analyzed leverage in three ways which were financial leverage, operating leverage and combine leverage. For analysis purpose he took seven public limited companies listed on the Bombay stock exchange. These were ACC Cement, Chettinad Cement, India Cements, Dalmia Cement, Ambuja Cement, Birla Cement and Prism Cement. He took the period of seven years for analysis. He used Analysis of Variance (ANOVA) as analysis tool in his study. He evaluates the hypothesis of relationship between degree of financial leverage and earnings per share. Operating leverage is caused due to fixed operating expenses in a firm. It is the firm's ability to use fixed operating costs to magnify the effects of changes in sales on its earnings before interest and taxes. Financial leverage is caused due to fixed financial costs in firm. It is the ability of the firm to use fixed financial charges to magnify the effects of change in EBIT on the earning per share. It involves the use of funds obtained at a fixed cost in the hope of increasing the return to the shareholders. The financial leverage employed by the company is intended to earn more return on fixed charge funds than their costs. There is a close relation exists between the financial leverage and earnings per share of the company. If degree of financial leverage is high and the return on investment is greater than the cost of debt capital, then the impact of leverage on EPS will be favorable. The impact of financial leverage is unfavorable when the earning capacity of the firm is less than what is expected by the lender. The results suggest that there is a significant negative relationship exists between financial leverage and earnings per share. The leverage effect is positive when the earnings of the firm are higher than the fixed charges to be paid for the lenders. The leverage is an important factor which is having impact on the profitability of the firm and the wealth of the shareholders can be maximized when the firm is able to employ more debt.

4.0 Research Methodology

The quality of the project work depends on the methodology adopted for the study. Methodology, in turn, depends on the nature of the project work. The use of project methodology is an essential part of any research. In order to conduct the study scientifically, suitable methods & measures are to be followed.

4.1 Research design

The type of research used for the collection & analysis of the data is “Historical Research Method”.

The main source of data for this study is the past records prepared by the firm. The data regarding firm history & profile are collected through the study of secondary sources and discussions with individuals.

4.2 Profitability ratios

The primary objective of a business undertaking is to earn profits. Profit earning is considered essential for the survival of the business. Generally, profitability ratios are calculated either in relation to sales or in relation to investments.

4.3 Gross profit ratio

Gross profit ratio also known as gross margin. Gross profit is the result of the relationship between prices, sales volume and costs. The formula for computing gross profit ratio is as follows:

$$\text{Gross Profit Ratio} = \text{Gross Profit/Sales} \times 100$$

Table 1: Profit to Net Sales Ratio

Gross Profit (Rs in '000)	Net Sales (Rs in '000)	Ratio
195043	290753	67
430439	637186	68
506945	754202	67
566987	877470	64
598236	843842	71

Sources: Company's annual report

4.4 Interpretations

In the beginning the gross profit ratio was 67 percentage and it decreased to 64 percentage. It is because of the increase in the cost of goods without corresponding increase in the sales.

4.5 Operating leverage

Operating leverage means the tendency of the operating profit to vary disproportionately with sales. A firm have high degree of operating leverages it employs a

greater amount of fixed cost and a smaller amount of variable cost and vice versa. If there is high degree of operating leverage a small change in sales will have a large effect of operating profit.

Table 2: Operating Leverage

Contribution	Operating Profit	Operating Leverage
71014	23065	3.07
155905	72722	2.14
198391	101951	1.94
248641	134969	1.84
248027	144974	1.71

Sources: Company's annual report

4.6 Interpretations

In the financial year the ratio of operating leverage is declining.

4.7 Financial leverage

It is tendency of the net residential income to vary disproportionately with operating profit. It shows the change that takes place in the taxable income as a result of change in the operating income. It signifies the existence of fixed interest or fixed dividend bearing securities in the total capital structure of the company.

Table 3: Financial Leverage = Operating Profit/ PBT

Operating Profit	PBT	Financial Leverage
23065	2270	10.16
72722	14831	4.90
101951	46285	2.20
134969	90238	1.49
144974	101152	1.43

Sources: Company's annual report

4.8 Interpretations

In the financial year the ratio of financial leverage is declining from.

4.9 Combined leverage

Operating leverage measures the percentage change in the operating profit due to percentage changes in sales. Financial leverage measures the percentage change in taxable profit on amount of percentage in operating profit. The combined leverage shows the effect of change in sales over taxable profit.

Table 4: Combined Leverage = Operating Leverage* Financial Leverage

Contributions	PBT	Combined leverage
71014	2270	31.28
155905	14831	10.51
198391	46285	4.28
248641	90238	2.75
248027	101152	2.45

Sources: Company's annual report

4.10 Interpretations

In the ratio of financial leverage is declining.

5.0 Conclusions

The WIP Ltd., achieved 100% utilization of raw materials due to its integrated production system. Therefore, it would be apt to call WIP Ltd., a company with a conscience'. WIP Ltd. stands for superior product performance and provides value for money to its customers. It is backed by WIP's commitment to harness the latest technology in wood processing industry and continuously upgrade its processes and machinery. Due to the high quality maintained, the company has found a ready market both India and abroad. The company does not aim at competing with the local manufactures but wants a main player in the plywood export.

In this competitive market the firm is showing a good performance. This firm has maintained its solvency in majority period. Inventory or stock is a main part of current asset. Closing stock is not a liquid or quick asset. Therefore the firm should try to reduce the stock. The management of stock level is a very tedious work. All the financial ratios of the firm (liquidity ratios, activity ratios and profitability ratios) shows good increasing trend.

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Impact of Big Five Personality Traits on Employee Commitment and Employee Performance

Shemi Varghese*

ABSTRACT

The corporate universe of today is a wild and serious spot. Firms are continually searching for better approaches to improve effectiveness and along these lines acquire a serious edge over its adversaries. There are numerous components influencing the level of accomplishment that a firm can accomplish, the nature of the labour force is one such main consideration influencing the achievement of an association, which is the reason firms try hard to guarantee that their workers are the top and successful. One method of ensuring that organizations pick the perfect individuals for their labour force is by assessing the workers' personalities. The target of this investigation is to perceive how Big an effect personality quality has on the presentation of representatives in the working environment. There are numerous variables influencing the exhibition levels of representatives, issues at home, wellbeing related issues or the work. climate all affects the efficiency of representatives. The worker's personality traits decide how that individual will manage any issues at home or at work. Personality qualities will likewise decide how much exertion the representative will apply at the working environment. As the personality of workers has a particularly big effect on the association's profitability, we have chosen to lead this investigation.

Keywords: *Employee commitment; Big five personality traits; Employee productivity.*

1.0 Introduction

Personality qualities mirror individuals' trademark examples of considerations, emotions, and practices. Personality traits suggest consistency and strength—somebody who scores high on a particular quality like Extraversion is required to be amiable in various circumstances and over the long haul. In this manner, traits brain science lays on the possibility that individuals contrast from each other as far as where they remain on a bunch of fundamental Personalities measurements that persevere over the long run and across circumstances.

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The most broadly utilized arrangement of traits is known as the Five-Factor Model. This framework incorporates five wide qualities that can be recalled with the abbreviation Sea: Receptiveness, Uprightness, Extraversion, Pleasantness, and Neuroticism. Every one of the traits from the Enormous Five can be partitioned into features to give an even more fine-grained examination of somebody's Personality. Moreover, some Personalities scholars contend that there are different qualities that can't be totally caught by the Five-Factor Model. Pundits of the Personalities idea contend that individuals don't act reliably starting with one circumstance then onto the next and that individuals are extremely impacted by situational powers. Accordingly, one discussion in the field concerns the overall force of individuals' qualities versus the circumstances where they end up as indicators of their conduct.

Personality has been considered as a factor in the Personality related investigations explicitly for anticipating the employee performance. It is a conduct which separates one individual from another and gives discernment whether an individual will do some work, in contrast with others. Besides, the Personalities, applicable to Personality, are viewed as steady a lot all through the work life in a Personality conduct model.

Attention to that the Personality hypotheses look at the differences and likenesses in an individual. The likenesses can be utilized to foresee one's presentation and conduct, as they give the aggregate ascribes of human instinct. While the fluctuations give the proportions of person's presentation and are utilized to depict human exhibitions and practices. Specialists in the field of Personality are of the view that the people truth be told have a steady and long-haul trait that influences practices at work. Regarding research on Personality, a few researchers caught that Personality is the viable apparatus that predicts employee performance. The strategy is generally received at the hour of work force determination system.

2.0 Literature Review

Xu & Thomas (2011). Associations try to have connected with workers and spend impressive assets to gauge and improve representative commitment. Hypothetically, administration is a vital forerunner of commitment, yet there is no exploration straightforwardly connecting pioneer practices and supporter commitment. The reason for this paper is to research the proof for such a connection. Exploration was led with an enormous New Zealand protection association, utilizing information from direct reports. A pilot study was first directed, in which the JRA three sixty-degree input instrument was factor investigated. Thusly, a linkage investigation was led to build up the relationship of the resultant authority factors with JRA's worker commitment measure. Three elements rose out of the JRA three sixty: underpins group, performs viably, and shows honesty. Connection and relapse results indicated that supports group was the most grounded indicator of commitment; semi-partial relationships demonstrated that the three administration factors covered in their associations with commitment, with upholds group anticipating most interesting change.

Ones *et al.*, (1993): Led a thorough meta-examination dependent on 600 and 65 legitimacy coefficients across five lakhs 76 thousand and 400 and sixty information focuses to explore whether respectability test validities are generalizable and to gauge contrasts in legitimacy because of expected directing impacts. Results show that trustworthiness test validities are for foreseeing position execution and counterproductive practices at work, for example, burglary, disciplinary issues, and truancy. Regardless of the impact of mediators, honesty test validities are positive across circumstances and setting

Oreg & Berson (2011): We inspected the part of pioneers' very own credits and ground-breaking authority practices in disclosing representatives' aims to oppose a Big- scale authoritative change. Through a staggered investigation of information from 75 school administrators and five 86 educators, we found that instructors' expectations to oppose the authoritative change were adversely identified with their directors' receptiveness to change esteems and ground-breaking initiative practices, and decidedly identified with their chiefs' dispositional protection from change. Moreover, directors' ground-breaking authority practices directed the connection between educators' dispositional obstruction and aims to oppose the change.

Goulet & Singh (2002): Contrasted with different types of work responsibility, there is a lack of examination on vocation responsibility. In this article, the writers look to address this general hole in the writing by expanding on past exploration on the associates and precursors of vocation responsibility and adding “new” factors to the system. All the more explicitly, they examine the impacts of a couple of recently contemplated factors, for example, work inclusion, authoritative responsibility, and occupation fulfilment, and they add two more individual elements (need for accomplishment and hardworking attitude) just as some situational factors (hierarchical vulnerability/dread of occupation misfortune and occupation fit) that, to the most amazing aspect their insight, have not been explored in past exploration. Besides, they analyse the impacts of extra-work factors (family association and number of wards) on vocation responsibility. At last, they control for various key segment factors. The creators find help for the speculations that work association, hierarchical responsibility, and occupation fulfilment are decidedly identified with vocation responsibility and discover some help for a comparative impact for need for accomplishment and hardworking attitude. Moreover, as anticipated, dread of losing one's employment was adversely identified with vocation responsibility, though “work fit” was decidedly related. The extra-work factors didn't have any critical consequences for profession responsibility.

Goddard *et al.*, (2007): Against a foundation of sweeping primary change in the financial area, this article audits the new scholastic writing on advancements in European banking. European financial business sectors have gotten progressively coordinated lately, however boundaries to full combination, particularly in retail banking, remain. European reconciliation has potential ramifications for fundamental danger and stances different difficulties for the current administrative structure. The banks' reactions to the changing serious climate incorporate the quest for systems of broadening, vertical item separation and union. European reconciliation has suggestions for rivalry in financial business sectors, for

the idea of long-haul borrower-loan specialist connections, and for the connections between possession structure, innovative change and bank proficiency. The article closes by evaluating ongoing writing on the credit direct in the money related transmission instrument, and loan fee go through.

Wang *et al.*, (2003): Personality zing work connections from the business' viewpoint and dependent on the inducement-contribution structure, this investigation analysed the connection between work connections and firm execution in a heterogeneous example of firms in the biggest arising economy on the planet, i.e., the Individuals' Republic of China. It likewise broke down the unforeseen part of both the company's essential direction and its proprietorship structure. The outcomes showed that it is the blend of an elevated level of expected commitments combined with a level of gave actuations (organization-focused work relationship approach) as opposed to a level of either expected commitments or gave promptings alone that is basic for firm execution. Further, we found that it isn't the organization-focused however the underinvestment work relationship approach that offers an upper hand if the firm seeks after the miner methodology or if the firm is a homegrown exclusive undertaking.

Anderson *et al.*, (2014): Inventiveness and advancement in any association are indispensable to its fruitful presentation. The creators audit the quickly developing assemblage of exploration around there with specific regard for the period 2,000 and two to 2,000 and thirteen, comprehensive. Thinking about both innovativeness and advancement as being necessary pieces of basically a similar cycle, we propose another, integrative definition. We note that investigation into imagination has normally inspected the phase of thought age, while development examines have generally additionally incorporated the last period of thought execution. The creators examine a few fundamental hypotheses of innovativeness and development and afterward apply a complete degrees of-investigation structure to survey surviving examination into singular, group, hierarchical, and staggered advancement. Key estimation qualities of the explored considers are then noted. Taking everything into account, we propose a directing system for future examination including eleven topics and sixty explicit inquiries for future investigations.

Yousef (2000): This article researches the potential intervening part of hierarchical responsibility in the connections of initiative conduct with the work results of occupation fulfillment and occupation execution in a non-western nation where multiculturalism is a prevailing aspect of the labour force. It additionally investigates the directing impacts of public culture on the connections of administration conduct with authoritative responsibility, work fulfilment and occupation execution in such a setting. Results recommend on the side of numerous western examinations that the individuals who see their bosses as embracing consultative or participative administration conduct are more dedicated to their associations, happier with their positions, and their exhibition is high. The outcomes additionally show that public culture directs the relationship of administration conduct with work fulfillment.

Barrick & Mount (1991): This examination researched the connection of the "Big Five" personality measurements Extraversion, Enthusiastic Solidness, Suitability, Principles,

and Receptiveness to Experience to three occupation execution standards work capability, preparing capability, and staff information for five-word related gatherings experts, police, chiefs, deals, and talented/semi- skilled. Results demonstrated that one component of personality, Principles, indicated predictable relations with all employee performance models for every single word related gathering. For the leftover personality measurements, the assessed genuine score connections fluctuated by word related gathering and model sort. Extraversion was a substantial indicator for two occupations including social connection, supervisors and deals across standard kinds. Likewise, both Receptiveness to Experience and Extraversion were legitimate indicators of the preparation capability measure across occupations. Other personality measurements were likewise discovered to be substantial indicators for certain occupations and some rule types, yet the greatness of the assessed genuine score connections was little. Generally, the outcomes outline the advantages of utilizing the five-factor model of personality to gather and impart experimental discoveries. The discoveries have various ramifications for examination and practice in staff brain science, particularly in the subfields of work force choice, preparing and advancement, and execution evaluation.

Tokar *et al.*, (1998). We give a specific audit of the writing on personality and professional conduct. We outlined the personality parts of the examination as far as the Five-Factor Model of personality at whatever point conceivable, to upgrade blend across the writing. groups of writing inspected incorporated the connections of personality to decision related cycles , interests, goals, perspectives and qualities, development, and dynamic, general profession measures pursuits of employment, vocation movement and changes, numerous jobs, profession responsibility, coinciding, and coaching), word related fulfilment and prosperity work fulfilment, word related pressure, strain, and burnout, and authoritative results employee performance, other alluring and unwanted results. Neuroticism, extraversion, and honesty arose most often in relationship with professional conduct. We sum up different subjects and give suggestions to future examination in this space.

Mueller & Plug (2006). The creators receive the Five-Factor Model of personality structure to investigate how personality influenced the profit of an enormous gathering of people who moved on from Wisconsin secondary schools and were re-met. Each of the five fundamental qualities extroversion, appropriateness, good faith, neuroticism, and receptiveness to encounter had measurably Big positive or negative profit impacts, and together they seem to have had impacts tantamount to those normally found for psychological capacity. Among men, generous profit points of interest were related with threat the front-side of suitability, enthusiastic dependability the front-side of neuroticism), and receptiveness to encounter, among ladies, with good faith and receptiveness to encounter. Overall, men alone were remunerated for that quality.

Cogliser *et al.*, (2012): Utilizing an example of 200 and 23 undergrad business understudies allocated to 71 virtual groups, this examination investigated the connections between the Big Five personality factors, pioneer development, group reliability, peer appraised part execution commitments, and group execution. As anticipated, suitability and

scruples were decidedly identified with the assignment and social-arranged elements of pioneer development, individually. Despite assumptions, passionate strength was not identified with one or the other element of authority rise. Proof of the anticipated connections between emanant authority and companion appraisals of part commitments to group execution was gotten for task-yet not social-arranged practices. At the group level, amassed social-situated initiative practices anticipated total impression of group reliability. Just amassed task-arranged emanant administration practices anticipated virtual group execution.

3.1 Objectives of the study

- To study the influence of Big five personality traits and Designation of the respondent.
- To study the relationship between Big five personality traits and Employee productivity.
- To study the relationship between Big five personality traits and affective commitment.
- To study the relationship between Big five personality traits and Continuance commitment.

3.2 Hypothesis

H0: There is no influence of big five personality traits and Designation of the respondent.

H0: There is no relationship between big five personality traits and Employee productivity.

H0: There is no relationship between big five personality traits and affective commitment.

H0: There is no relationship between big five personality traits and Continuance commitment.

3.0 Research Methodology

The current study was undertaken for the purpose of exploring the impact of employee commitment on employee performance impact of Big five personality traits. The population of this research study was comprised of bank employees in different designation of clerk, officer, manager positions scheduled bank employees of India. Primary data was collected from 641 Bank employees. Simple random sampling method was used for the selection of respondents. Questionnaire was administered to collect Primary data. Employee performance and employee commitment were taken as dependent and independent variables respectively. Analysis of data was carried out by applying SPSS Version 23. One way ANOVA analysis test were carried out to establish link between employee commitment and employee performance, and also to find out the predictor of bank employees' productivity. This study has great value for the managers and academicians as it will help them in designing an integrated and comprehensive system for creating commitment among the employees for improving performance of organization.

4.0 Data Analysis and Interpretation

4.1 One way-ANOVA between the big five personality traits and Designation of the respondent

H01: There is no influence of big five personality traits and Designation of the respondent.

Table 1: One way-ANOVA between the Big Five Personality Traits and Designation of the Respondent

Variable		Mean	Std. Deviation	df	F	Sig
Conscientiousness	Clerk	1.66	0.315	4	0.26	0.91
	Officer	1.65	0.231	636		
	Manager	1.66	0.283			
Agreeableness	Clerk	1.66	0.248	4	0.56	0.7
	Officer	1.66	0.247	636		
	Manager	1.63	0.250			
Neuroticism	Clerk	3.76	0.577	4	1.48	0.21
	Officer	3.71	0.592	636		
	Manager	3.83	0.421			
	Total	1.28	0.140			
Openness	Clerk	1.65	0.278	4	0.1	0.98
	Officer	1.65	0.374	636		
	Manager	1.67	0.296			
	Total	0.56	0.099			
Extraversion	Clerk	1.75	0.330	4	4.86	0.01
	Officer	1.72	0.284	636		
	Manager	2.02	0.266			

Source: Primary Data

Interpretation

- One way-ANOVA between the Uprightness and Assignment we find that the determined F esteem is 0.257 which is not exactly the table worth. Consequently, we acknowledge the invalid speculation at 95% certainty level. From the above examination it is derived that there is no impact of Enormous five principles and Assignment of the respondent.
- One way-ANOVA between the Suitability and Assignment we find that the determined F esteem is .556 which is not exactly the table worth. Thus, we acknowledge the invalid theory at 95% certainty level. From the above examination it is induced that there is no impact of Suitability and Assignment of the respondent.
- One way-ANOVA between the Neuroticism and Assignment we find that the determined F esteem is 1.483 which is not exactly the table worth. Subsequently, we acknowledge the invalid theory at 95% certainty level. From the above investigation it is surmised that there is no impact of Neuroticism and Assignment of the respondent.

- One way-ANOVA between the Transparency and Assignment we find that the determined F esteem is 0.104 which is not exactly the table worth. Subsequently, we acknowledge the invalid theory at 95% certainty level. From the above investigation it is surmised that there is no impact of Receptiveness and Assignment of the respondent.
- One way-ANOVA between the Extraversion and Assignment we find that the determined F esteem is 4.860 which is more noteworthy than the table worth. Consequently, we reject the invalid speculation at 95% certainty level. From the above examination it is induced that there is an impact of Extraversion and Assignment of the respondent.

4.2 One way-ANOVA between the Factors Influence Big Five Personality traits and Employee Productivity

H02: There is no relationship between Big five personality traits and Employee productivity

Table 2: One way-ANOVA between the Factors Influence Big Five Personality Traits and Employee Productivity

Variable		Mean	Std. Deviation	df	F	Sig
Conscientiousness	Employee	1.66	0.318	10	0.942	0.49
	Productivity			627		
Agreeableness	Employee	1.65	0.246	10	0.484	0.90
	Productivity			627		
Openness	Employee	3.76	0.552	10	0.854	0.58
	Productivity			627		
Neuroticism	Employee	1.65	0.297	10	0.484	0.90
	Productivity			627		
Extraversion	Employee	1.74	0.320	10	11.74	0.00
	Productivity			627		

Source: Primary Data

Interpretation

- One way-ANOVA between the Conscientiousness and employee productivity we find that the calculated F value is .942 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Big five conscientiousness and employee productivity of the respondent.
- One way-ANOVA between the Agreeableness and employee productivity we find that the calculated F value is .484 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Agreeableness and employee productivity of the respondent.
- One way-ANOVA between the Neuroticism and employee productivity we find that the calculated F value is .854 which is less than the table value. Hence, we accept the null

hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Neuroticism and employee productivity of the respondent.

- One way-ANOVA between the Openness and employee productivity we find that the calculated F value is .484 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Openness and employee productivity of the respondent.
- One way-ANOVA between the Extraversion and employee productivity we find that the calculated F value is 11.739 which is greater than the table value. Hence, we reject the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is an influence of Extraversion and employee productivity of the respondent.

4.3 One way-ANOVA between the Factors Influence Big Five Personality traits and Affective Commitment

H03: There is no relationship between big five personality traits and affective commitment.

Table 3: One way-ANOVA between the Factors Influence Big Five Personality Traits and Affective Commitment

Variable		Mean	Std. Deviation	df	F	Sig
Conscientiousness	Affective commitment	1.66	0.317	19	1.01	0.4
				621	9	4
Agreeableness	Affective commitment	1.65	0.245	19	1.37	0.1
				621	5	3
Openness	Affective commitment	1.65	0.297	19	0.73	0.7
				621	5	8
Neuroticism	Affective commitment	3.76	0.245	19	0.55	0.6
				621	1	9
Extraversion	Affective commitment	1.74	0.320	19	9.40	0.0
				621	4	0

Source: Primary Data

Interpretation

- One way-ANOVA between the Conscientiousness and Affective commitment we find that the calculated F value is 1.019 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Big five conscientiousness and Affective commitment of the respondent.
- One way-ANOVA between the Agreeableness and Affective commitment we find that the calculated F value is 1.375 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Agreeableness and Affective commitment of the respondent.

- One way-ANOVA between the Neuroticism and Affective commitment we find that the calculated F value is .735 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Neuroticism and Affective commitment of the respondent.
- One way-ANOVA between the Openness and Affective commitment we find that the calculated F value is .551 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Openness and Affective commitment of the respondent.
- One way-ANOVA between the Extraversion and Affective commitment we find that the calculated F value is 9.404 which is greater than the table value. Hence, we reject the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is an influence of Extraversion and Affective commitment of the respondent.

4.4 One way-ANOVA between the Factors Influence Big Five Personality traits and Continuance Commitment

H04: There is no relationship between big five personality traits and Continuance commitment.

Table 4: One way-ANOVA between the Factors Influence Big Five Personality Traits and Continuance Commitment

Variable		Mean	Std. Deviation	df	F	Sig
Conscientiousness	Continuance	1.66	0.317	19	0.423	0.986
	Commitment			621		
Agreeableness	Continuance	1.65	0.245	19	0.854	0.641
	Commitment			621		
Openness	Continuance	1.65	0.297	19	0.789	0.721
	Commitment			621		
Neuroticism	Continuance	3.76	0.551	19	1.264	0.201
	Commitment			621		
Extraversion	Continuance	1.74	0.320	19	1.004	0.454
	Commitment			621		

Source: Primary Data

Interpretation

- One way-ANOVA between the Conscientiousness and continuance commitment we find that the calculated F value is 0.423 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Big five conscientiousness and continuance commitment of the respondent.

- One way-ANOVA between the Agreeableness and continuance commitment we find that the calculated F value is 0.854 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Agreeableness and continuance commitment of the respondent.
- One way-ANOVA between the Neuroticism and continuance commitment we find that the calculated F value is .789 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Neuroticism and Age of the respondent.
- One way-ANOVA between the Openness and continuance commitment we find that the calculated F value is 1.264 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Openness and Age of the respondent.
- One way-ANOVA between the Extraversion and continuance commitment we find that the calculated F value is 1.004 which is less than the table value. Hence, we accept the null hypothesis at 95% confidence level. From the above analysis it is inferred that there is no influence of Extraversion and continuance commitment of the respondent.

5.0 Findings

The purpose of this study was to examine the association between employee commitment and employee performance impact of Big five Personality traits dimensions among the staff of scheduled banks in Kerala. There is no impact of Enormous five principles and Assignment of the respondent. It is surmised that there is no impact of Neuroticism and Assignment of the respondent. It is inferred that there is no influence of Neuroticism and Age of the respondent. It is inferred that there is no influence of Extraversion and continuance commitment of the respondent. It is inferred that there is no influence of Big five conscientiousness and continuance commitment of the respondent. It is inferred that there is no influence of Big five conscientiousness and Affective commitment of the respondent. It is inferred that there is no influence of Agreeableness and employee productivity of the respondent.

6.0 Conclusion

Personality qualities mirror individuals' trademark examples of considerations, sentiments, and practices. Personality personalities infer consistency and solidness somebody who scores high on a particular trait like Extraversion is required to be agreeable in various circumstances and over the long run. In this way, personalities brain science lays on the possibility that individuals vary from each other regarding where they remain on a bunch of essential quality measurements that endure over the long run and across circumstances. The most generally utilized arrangement of qualities is known as the Five-Factor Model. The

exploration is about the finding the elements affecting representative's personality qualities in Banks. The correlative point of this examination was to dissect the effect of Big five model in employee commitment and representative execution. What's more, to investigation the connection between enthusiastic solidness and representative efficiency.

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Green Banking Initiatives: A Special Reference towards Public Sector Banks in Southern Districts of Tamil Nadu

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ABSTRACT

The banking sector has great influence on the economic growth country. Environmental issues gain greater attention these days that results in building of pressure all industries, including financial institutions to adopt, implement and provide awareness about green banking initiatives. The public banking sector plays a decisive role in encouraging environmentally sustainable and socially responsible ventures. To support the reduction of carbon emissions, banking industry should finance green technologies projects. Electronic banking is not only responsible behind economic intensification but it also plays vital role in environmental protection. This research article tries to highlight the green banking initiatives aspects with respect to selected Indian public sector banks in southern districts of Tamilnadu.

Keywords: *Green Banking Initiatives, Green banking products and services, Problems and satisfaction of users of green banking initiatives, etc.,*

1.0 Introduction

Nowadays, global warming is a dangerous issue. For immediate global response we need to quick changes in the climate pattern which is cause for many problems and directly leave impact on biodiversity, cultivation, forestry, water resources, and human health. This Banking approach allows to natural responsible bank to contribute in the economic system comprising of production, distribution business by aware environmentally responsive account, process, limit building to support pollution less environment and living standards. Banking Policy lays down the essential components of its move-over. This banking system requires a change in thinking about economics, business and finance. Its success would be greater if the world governors started to update their economic standards from being “monetary economics” to “Ecological economics” and start to change their accounting principles from purely being financial into ecological or operational energy accounting patterns. Upcoming green banking may change in this way. Green banking includes environmental and social responsibility.

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Bangladesh is one the most environmentally influenced country in the world; keeping this in mind, Bangladesh Bank established a Green Banking Policy in 11. This study goes for focused on the present status of the banks in observing with public sector banks policy to save the environment also to increase financial sustainability. Green banking activities include using all of the bank's resources with responsibility and care. It also includes avoiding waste and giving priority to choices that take sustainability into account.

Green keeping money practices will be helpful for environment as well as lead to cost reductions in managing an account exercise. To decrease the outer carbon discharges, bank ought to back green innovation and pollution sinking activities.

1.1 Objectives of the study

- To assess the purpose for using green banking services.
- To examine the problems in green banking initiatives of products and services.
- To examine the satisfaction level of green banking initiatives.

2.0. Review of Literature

Sonu (2015) highlighted the advantage of instant transaction as one of the major factors favoring the use of plastic money over real money by the population today. It has already been highlighted by the study that convenience of not carrying cash and ease of transaction is one of the major psychologically influencing factors that encourage the use of plastic money instead of real money. Additionally, the results of the study have also stressed upon the convenience and ease of use while paying or shopping by plastic money. The saving of time and the fact that the plastic money seems to be more portable also seems to be more portable also seems to further the cause of a possible change in the scenario of money usage in the economy. On the other hand, security comes forward as a major cause for concern for the population using plastic money. Therefore, it is easy to conclude that the population is ready as ever to use plastic money at a greater level due to its high levels of ease and convenience.

Pavani (2016) discussed the effectiveness of financial inclusion programme for the betterment of the rural poor. The basic objective of financial inclusion programme is to provide banking services at an affordable cost. The slow penetration of banking services is also creating barriers for the effective implementation of desired services. The banking system should be strong enough to serve each and every section of the society. There is need to make changes in the existing system so that the needy section should get the benefits as and when it is required by them. It will also help to create rural business expansion which is a must for the growth of the rural economy.

Dhanraj (2016) describe the role of regional rural banks in shaping the rural economy and rural credit structure. The RRBS were established in the year 1975 to shape the rural economy by providing credit to the needy segment. These segments were excluded by the formal banking systems due to their inability to access to loan. The capital requirements were

exclusively meant for small and marginal farmers, rural small-scale producers, laborers. These unbankable populations were able to improve the income generating activities with the help of the capital that they received from RRBs. But very soon the bank becomes sick due to poor repayment and mounting naps. The banks were not planned properly and failed to understand the real need of the capital. Also, there was no follow up for the loans provided to the needy segment. The traditional production approach also led to huge loss for most of the small-time producers. This is a kind of realization that only providing finance will not be adequate, the banks should guide to make them understand the essential demand supply conditions as well as market need. But neither the banks nor the implementing agencies are able to see the gap and as a result of the same the outcome are below the expectation level.

3.0 Research Methodology

3.1 Research design

The study is an empirical study based on primary data. Interview schedule was developed for this purpose. It presents the type of data used, selection of samples, and tools of analysis, period of study and chapter scheme.

3.2 Sources of data

3.2.1 Primary data

Primary data were collected through interview and questionnaire schedule distributed to the users or the purpose of collecting the required data. The respondents were interviewed at their convenient time for the collection of data.

3.2.2 Secondary data

Secondary source of data consists of existing information collected by the researcher from different sources. The external sources include RBI reports, magazines, research journals, websites of digital payment activity and other internet sources. Hence, the researcher has collected the required secondary sources of data to understand the digital payment services.

3.2.3 Selection of the samples

Selection of the sample is an important part of the research work. Hence, the researcher select 80 respondents for her research work.

4.0 Discussion and Results

The presents the opinion of the public sector bank customers towards green banking initiatives in Southern districts of Tamil Nadu. In this presents, the researcher has analysed the factors motivating to use green banking initiatives, problems faced by green banking service users and their level of satisfaction regarding green banking initiatives activity. The researcher has used Weighted Average method and Garrett ranking method for the analysis.

4.1 Demographic profile of green banking products and services users

The demographic profile of digital payment users namely sex, age, marital status, qualification, place of residence, occupation, size of the family has been analysed with the help of percentage method.

Table 1: Demographic Profile of Green Banking Products and Services Users

	Particulars	Respondents	Percentage
Gender	Male	34	42.5
	Female	46	57.5
	Total	80	100
Age	Below	4	5
	21 to 30	49	61.25
	31 to 40	13	16.25
	Above 40	14	17.5
	Total	80	100
Educational Qualification	Upto +2	13	16.25
	Diploma courses	9	11.25
	UG	21	26.25
	PG	37	46.25
	Total	80	100
Marital Status	Married	36	45
	Unmarried	44	55
	Total	80	100
Occupation	Student	31	38.75
	Professionals	11	13.75
	Government employee	10	12.5
	Private employee	19	23.75
	House wife	9	11.25
	Total	80	100
Residential	Rural	33	41.25
	Urban	25	31.25
	Semi-urban	22	27.5
	Total	80	100

Sources: Primary data

The above table shows that the female respondents in this study represented the highest figure as compared to the male respondents, where 57.5 percent of the respondents are female and the remaining 42.5 percent of the respondents are male. Out of 80 respondent's 57.5 percent of the respondents are female. That the highest (61.25) category in this study is

represented by the respondents who are in the age group of 21 to 30 years. 5 percent of the respondents are in the age group of below years, 16.25 percent of the respondents are in the age group of 31 to 40 years and 17.5 percent of the respondents are in the age group of above 40 years. Majority of 61.25 percent of the respondents are using digital payment in the age group of 21 to 31 years. That the unmarried respondents in this study represented the highest figure as compared to married respondents, where 55 percent of the respondents are unmarried and 45 percent of the respondents are married. Majority of 55 percent of unmarried respondents are using digital payment activity. That the highest (46.25) categories in this study were represented by the respondents who have PG qualification, 26.25 percent of the respondents who have UG qualification, 16.25 percent of the respondents who have upto +2 and 11.25 percent of the respondents who have diploma courses. Majority of 46.25 percent of the respondents are having PG degree. That the highest (38.75) categories in this study were represented by the respondents who are students, 23.75 percent of the respondents are private employees, 13.75 percent of the respondents are professionals, 12.5 percent of the respondents are government employees and 11.25 percent of the respondents are house wives. Majority of 38.75 percent of the respondents are students. That respondents who are residing in rural area represented the highest figure as compared to respondents are residing in urban and semi urban, where 41.25 percent of the respondents are residing in rural area, 31.25 percent of the respondents are residing in urban area and 27.5 percent of the respondents are residing in semi-urban area. Majority of 41.25 percent of the respondents are residing in rural area.

4.2 Mode of digital payment for green banking initiatives activity

Table 2: Mode of Digital Payment for Digital Payment Activity

S. No	Mode of digital payment	Total value	Weighted average score	Rank
1.	E-Cash	174	2.175	V
2.	E-Banking/Internet Banking	444	5.55	I
3.	Debit Card	349	4.363	II
4.	Credit Card	239	2.988	III
5.	Smart Card	164	2.05	VI
6.	E-Wallet	154	1.925	VII
7.	Paytm	192	2.4	IV
8.	Others	138	1.725	VIII

Sources: Primary Data

Table 2 shows that the mode of green banking initiatives used by the users for digital payment activity. Majority of the respondents used e-banking/internet banking for digital payment activity, the researcher gives first rank with the mean score 5.55, second rank is given to debit card used by the respondents with the mean score 4.363, third rank is given to credit card used by the respondents with the mean score 2.988, fourth rank is given to paytm

used by the respondents with the mean score 2.4, fifth rank is given to e-cash used by the respondents with the mean score 2.175, sixth rank is given to smart card used by the respondents with the mean score 2.05, seventh rank is given to e-wallet used by the respondents with the mean score 1.925 and eighth rank is given to other mode of payment used by the respondents with the mean score 1.725.

4.3 Problem faced by the user while using green banking services

Table 3: Problem Faced by the User while Using Green Banking Services

S. No	Problems	Total value	Weighted average score	Rank
1.	Lack of security	314	3.925	II
2.	Lack of awareness	341	4.263	I
3.	Lack of trust	298	3.725	IV
4.	Registration	299	3.738	III
5.	Refund of money	286	3.575	VI
6.	System hangover	280	3.5	VII
7.	Slow internet speed	290	3.625	V

Sources: Primary Data

Table 3 shows that the green banking users are highly faced the problem of lack of awareness thus the researcher had given first rank with the mean score 4.263, second had given to the problem of lack of security with the mean score 3.925, third rank had given to the problem of registration with the mean score 3.738, fourth rank had given to the problem of lack of trust with the mean score 3.725, fifth rank had given to the problem of slow internet speed with the mean score 3.625, then the sixth rank had given by the researcher to the problem of refund of money with the mean score 3.575 and the last rank had given by the researcher to the problem of system hangover with the mean score 3.5 which is less faced by the digital payment user.

4.4 Satisfaction level regarding green banking initiatives activity

Table 4: Satisfaction Level Regarding Green Banking Initiatives Activity

S. No	Particulars	Total value	Weighted average score	Rank
1.	Security	317	3.963	IV
2.	Time saving	352	4.4	I
3.	Ease of payment	345	4.313	II
4.	Convenience	319	3.988	III
5.	Trust	290	3.625	VI
6.	Easy to use	303	3.788	V
7.	Refund of money	247	3.088	VII
8.	Complaint redressed	223	2.788	VIII

Sources: Primary Data

Table 4 shows that the green banking initiatives users are highly satisfied with factor time saving hence the researcher had given first rank with the mean score 4.4, second rank had given to the ease of payment with the mean score 4.313, third rank had given to the convenience of using digital payment with the mean score 3.988, fourth rank had given to the security with the mean score 3.963, fifth rank had given to the easy to use with the mean score 3.788, sixth rank had given to the trust with the mean score 3.625, seventh rank had given to the refund of money with the mean score 3.088 and the last rank had given to the complaint redressed with the mean score 2.788.

5.0 Conclusion

Green Banking Initiatives provides the greater freedom to individuals in paying their taxes, license fees, fines and purchases at any locations and at any time of 365 days. Success of digital payment system also depends on the customer preferences, ease of use, cost, authorization, security, accessibility and reliability etc. Based on our review of these findings, it is clear that the internet is playing a more and more important role in the field of digital payment. By this study we came to know various strengths of digital payment system such as quality, customer service, greater reach, time saving, customer loyalty and easy access to information, 24 hours availability, reduce paper work, no need to carry any cash etc.

Now when our environment fights us back and there is an urgent need to create awareness and follow green banking in today's business world of innovative technologies so as to make our environment human friendly. We are forced to rethink and improve our ways of living to become more eco-friendly. A new trend hence was given birth in our endeavor to become eco-friendly which many define as 'being green'. Green banking if implemented sincerely opens up new markets and avenues for product differentiation. The banks should play a pro-active role to take environmental and ecological aspects as part of their lending principle which would force industries to go for mandated investment for environmental management, use of appropriate technologies and management systems. As green bank has rapidly expanded its operations, the challenge for its leadership has been on managing this growth successfully and prudently.

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Work-Life Balance among Women in the Private Higher Education Industry during COVID-19: A Path to Organisational Sustainability

Geetha Manoharan and Sunitha Purushottam Ashtikar***

ABSTRACT

An educator has a profound effect on the lives of their pupils, as well as on those of their families, co-workers, and the wider community in which they work. Teachers' responsibilities include providing for their students' social and emotional well-being. The 2019 Coronavirus disease outbreak (COVID-19) has taken the world by surprise. It is largely due to the rise of positive psychology that wellbeing research has recently gained momentum. Increasingly, scientists and practitioners are focusing on the science of improving one's overall well-being by studying positive subjective experiences, positive traits, positive states, and aspects of one's strengths. Despite the fact that work and family are widely considered to be two of the most important aspects of life, the positive psychology literature has not given much attention to these two areas. On March 25, 2020, the Indian government declared a nationwide lockdown in an effort to contain the disease's spread. During the COVID-19 pandemic lockdown, professionals were unable to maintain a work-life balance because of the unexpected and sudden changes that occurred. An investigation into their experiences at home and work was conducted as a result of this, with the hypothesis being that physical and mental health, activities, relationship status and the workplace all have an impact on the integration of work and home life.

Keywords: *Work-life balance; Higher education; Educators; Sustainability; Performance; Policies.*

1.0 Introduction to Work-Life Balance

Work life balance refers to a person's ability to balance professional and personal responsibilities. Personal interests, other activities, and family life are all aspects of a person's personal life. It can also be viewed as the relationship between an employee's professional and personal lives. If private and professional life exist in one individual's life, it is important to determine if it is balanced or not.

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If a person's personal life and private life are not balanced, it can create a conflict between both lives. But those two lives create a balance without conflicts; we can call it a healthy work-life balance (Kerdpitak & Jermstittiparsert 2020). According to Ang (2020), every person's quality of life can be greatly enhanced by finding a work-life balance that works for them. To ensure the long-term viability and success of an organisation, it is critical that employees are able to maintain a good work-life equilibrium. Healthy work-life equilibrium, according to him, is "a way of life in which an individual's habits and actions result in the long-term development of his or her health, wealth, career, family relationships, social relationships, and life fulfilment and enjoyment." He believes that a healthy work-life balance is essential for the long-term and increases in an individual's well-being, wealth, career, relationships with others, as well as a sense of meaning in their lives.

Work-life balance can serve as an important component of any organization's employee retention strategy. Organizations have to manage their work-life balance policies in order to keep their employees for the long term. Work-life balance helps the organisation by reducing employees' absenteeism and turnover. Work-life balance policies affect the well-being of employees and may include options such as flexible working hours, working from home, parental paid leave, and a nursery in the workplace. The ability to manage one's work and the responsibilities of one's family has a positive impact on productivity. Flexible working hours allow the ability of employees to balance the demands of their work and personal lives without fail. It also has a positive impact on employee turnover intentions and organisational commitment. These types of work-life balance policies assist the organisation in improving organisational performance, increasing productivity, lowering absenteeism, lowering overheads, and improving recruitment and retention. (Agha *et al.*, 2017). With regard to the reasons why work-life balance is important, they include the fact that it helps to keep employees' mental and physical health in check; it also improves their productivity, and it reduces the risk of burnout. Everyone's definition of work-life harmony differs. Work-life balance encompasses more than just the number of hours worked; it also includes the creation of a work environment where people can be healthy and happy in order to boost morale and productivity.

The most important factor in achieving work-life balance is a flexible work environment, which includes ability to work from home with more freedom and flexibility, personal time off, having clear priorities, the ability to earn a good living while working in a pleasant environment, as well as the ability to advance professionally and socially. The job givers must show employees that their company values work-life balance by encouraging them to practise work-life balance practises. The optimal work-life balance will benefit both employees and organisations as a whole (SpriggHR, 2020). To comply with government orders, most organisations will allow employees to work from home (WFH) during this lockdown due to the pandemic COVID-19. Some employees are pleased with the WFH practise because it aids in the maintenance of work-life balance, but managers are not pleased because they lack confidence in the employees' ability to carry out their assigned work responsibilities while at home. Because everyone is on lockdown, everyone in the family is

gathered inside the house to spend quality time together, but this can present challenges in managing family responsibilities. After all, working from home while the world is under a global lockdown can present unexpected challenges in the context of work-life balance, it is believed to help employees achieve a more balanced work-life balance Bhumika (2020).

1.1 Balance between work and personal life during COVID 19

As stated by Hermina & Yosepha (2019) on the Model of Employee Performance, employee performance is required not only for the employees but also for the success of organisations as it is beneficial for both the company and the employees themselves. Organizations worldwide today know that they need the best performance from human resources to deal with a challenging business environment. Furthermore, recent research has found that employee well-being has a direct impact on employee performance. That makes an organisation take care of the well-being of the employees to gain competitive advantages among competitors (Kashyap *et al.*, 2016). The COVID-19 pandemic just brought several unexpected positives for employees. One is the fact that organisations prioritise their employees' well-being and also the health and safety of employees to survive in this situation. And organisations are now offering more flexible working arrangements and benefits to their employees. However, this pandemic situation has had a mixed effect on work-life balance, as remote work makes that balance more difficult to achieve than it was previously (Kang, 2020).

Students' learning and well-being are directly linked to teachers' efforts, and COVID-19 has highlighted this fact. Teachers frequently face a variety of new and sometimes unexpected challenges, such as dealing with erratic behaviour of students and instructing classes of varying abilities, or adjusting timetables and lesson plans in response to curriculum changes. Indeed, their job necessitates constant adaptability in order to meet the daily demands of working in schools and classrooms. A high level of multitasking is common among educators who wear a variety of hats in the classroom and at school, from teacher to advisor to mentor and administrator to lesson planner to classroom manager and support worker. Both the rewards and challenges of being a teacher are immense. It has become increasingly difficult for teachers to fulfil their roles as they are now expected to deal with a diverse student body, a crowded curriculum, and dwindling resources while also interacting with parents and the wider community while still providing high-quality educational opportunities for their students. Teachers who don't have access to regular professional development, mentoring, and other forms of support are more likely to experience burnout, emotional exhaustion, and even leave the profession altogether.

There are many things that teachers must keep in mind as they try to balance the many demands of their jobs with their families' health and well-being. At the same time that they help students, teachers must also look after their own needs and those of their families. Due to the majority of teachers being women, they fared the worst their work was put at risk during the pandemic and the fact that they are the primary caregivers for the health and educational requirements of their children and their own families, making them particularly

vulnerable. In the midst of the pandemic, being a woman and a teacher was a double-whammy. Psychological stress on teachers can have serious ramifications for their own well-being as well as that of the students they are entrusted to care for. Remote working has been shown to improve the work-life balance of employees. However, the COVID-19 emergency situation for employees with minor children has changed the normal course of private life, responsibilities and timing for many people's daily lives. A healthy work-life balance is more important now than ever before because of the rise in remote working due to the current economic crisis, regardless of the employee's position or scheduling.

Every employee is faced with the challenge of juggling their professional and personal lives. Employers and employees' families alike rely on an employee's ability to balance their work, family, and personal obligations with their other responsibilities. Many people were forced to work from home as a result of the COVID-19 emergency situation. Initially, it was hoped that working from home would help to promote a better work-life balance by allowing people to spend more time with their families. Negative tendencies began to emerge gradually as a result of the close proximity of the employer as well as the uncertainty that came with working from home and spending time with family. Many mistakes were made, exacerbating the problem of work-life balance as a result of the fact that many organisations and individuals were unprepared for such a drastic change.

1.2 Objective of the research work

- The goal of this study is to investigate the difficulties associated with achieving a work-life balance as well as the consequences of this on the health and productivity of employees.
- And in addition to this, in this time of pandemic situation, this research will study how people, including both employees and employers, deal with work-life balance.
- This study will highlight the positive benefits to the organisation of employees having a work-life balance.
- This research will also investigate the negative effects of poor work-life balance on employees, which can lead the organisation to failure.
- And also, this study will suggest employers encourage work-life balance to attract skilled people and become the employers of choice.
- This study will also suggest strategies to have a better work-life balance and how to get the best performance and healthy well-being at the age of COVID-19.

2.0 Review of Literature

As a full-time academic nurse educator during the COVID-19 pandemic, Elizabeth A. (2022) sought answers from her research. As a result of COVID-19, ANEs who had previously taught in clinical and classroom settings will be forced to work under new conditions in 2020. This investigation was based on hermeneutic phenomenology. A

demographic questionnaire was also used in conjunction with in-person interviews to compile the data. A total of 14 ANEs showed up for the event. From the data, we discovered five main themes: rollercoaster, figure it out, help and be helped, silver linings, and loss. Because of this study, we know that these people were in contact with the pandemic virus. The research results can be used to help improve working conditions for ANEs now and in the future.

According to Kumpikait-Valinien *et al.*, (2021), the COVID-19 pandemic impacted daily life and work globally. Many educational institutions have moved to a virtual environment with little or no experience. This study examines how institutional support affects educators' work-life balance during pandemic lockdown. In April 2020, 1,851 Telangana educators were interviewed quantitatively. Work-life balance was improved, and work-related, client-related, and personal burnout was reduced, thanks to institutional support.

Martin Daumiller, Raven Rinas, and Julia Hein theorise that the COVID-19 pandemic forced many professors to teach online because of the time constraints of traditional classrooms. Some teachers performed exceptionally well, while others had a difficult time. Online teaching and learning exhibit inter individual differences as a result of this sudden shift. Prior to and following their switch to online teaching, we surveyed 80 faculty members about their academic and personal goals, as well as their attitudes and levels of burnout and engagement. 703 student evaluations of faculty teaching abilities were also included in this study. Goals for faculty's own competence development were seen as positively associated with the shift to online teaching because it offered a new, exciting challenge. As a result of this avoidance of performance and work goals, a threat perception was linked to burnout and student evaluations of the quality of teaching. Successful online teaching and learning relies heavily on the attitudes and goals of the instructors.

Specifically, Susilaningsih, Komariah, and Mediawati stated that they conducted this study in order to assess lecturers' wellbeing in the course of the COVID-19 epidemic (2021). It was peer-reviewed and written in English, and it was published in a journal. This was accomplished by using the Boolean search engine to look for "lecturer OR academic OR nurse lecturer AND e-learning OR online OR remote OR distance" and "e-learning OR online OR remote OR distance." There were 53 citations from the electronic searches, and only five were retained. This COVID-19 pandemic reduced the quality of life of lecturers because of poor mental health, stress related to the use of IT, and a decreased work-life balance.

Staff members of educational establishments of higher learning face increasingly complex responsibilities, according to Ilic-Kosanovic (2021), including not only classroom instruction and lecture preparation, but also administrative tasks, such as completing a large amount of scientific research and writing a scientific paper. She argues that this makes the topic of work-life balance among faculty members at these institutions more relevant to researchers (vice deans, department chiefs, etc.). Attracting and retaining high-quality teachers, regardless of gender, is becoming an increasingly important issue. During pandemics like the COVID-19 virus pandemic, the complexities of this problem have become especially apparent. When most higher education institutions resumed semi-regular

operations after the lockdown in Serbia from March to May and teachers were allowed to work from home, researchers interviewed them to learn how they felt about the work-life balance they were able to achieve. Teachers at all levels have had difficulties juggling their work and personal lives when they are working from home, even though the sample size is small.

Educational institutions worldwide had to be put on lockdown in order to prevent a pandemic of the COVID-19 virus from spreading, according to Jeliska *et al.*, (2021). Emergency remote instruction has become the preferred method of providing education for many. For the most part, this is the case at institutions of higher learning (HE). The pandemic has put an unprecedented amount of stress on the population, particularly on educators and students, which has been exacerbated by the shift to a teaching method that is unfamiliar to the majority. Teaching online in these new conditions has posed unique challenges for college and university faculty, and this study examines how those challenges affected their well-being in their daily lives and careers. Between April and September 2020, 804 university instructors from 92 countries took part in an extensive online survey. Gender, age, marital status, place of residence, and number of years in a given profession are just a few of the socio demographic factors we'll be looking at, as well as the length of time spent working in the field. Understanding the mechanisms that mediate relationships between individual, contextual, and emotional variables can help us better understand the impact of pandemic and emergency remote instruction on instructors' well-being. In order to alleviate the negative effects of the ongoing pandemic and possible school closures, administrators and teachers alike may find it useful.

Throughout history, women have played a pivotal role in securing stability, progress, and long-term development, according to Basak (2021). Taking care of young children and the elderly is traditionally a woman's responsibility in every culture. When it comes to achieving success in the workplace, women no longer trail men. Keeping up with the other sexes requires them to stand shoulder to shoulder. In Bangladesh, a large portion of economic activity is carried out by women, including household and care activities, agriculture, education, industries, banking, and the service industries. Women in Bangladesh are being studied as part of an effort to better understand how the COVID-19 pandemic is affecting their ability to maintain a healthy work-life balance. As a part of this effort, a random sample of 105 Bangladeshi women from a variety of fields (e.g., teaching; banking; healthcare; ready-made garments; public and private corporations; government service and entrepreneurship) has been selected. Many statistical tests were performed on the collected data, including reliability and validity checking; multiple regression; ANOVA; and hypothesis testing. It has been presented as a table with the results of the analysis. The study found that the COVID-19 pandemic had a significant impact on the work-life balance of Bangladeshi women. As a result, policies promoting work-life balance and flexibility are becoming increasingly important in the workplace, particularly for female employees, who are more likely than men to experience high levels of job stress, job satisfaction, and

productivity. Having a work-life balance policy is essential for the health and well-being of employees, according to the findings of this study.

During the COVID-19 pandemic, researchers discussed the importance of finding a work-family balance, according to Skorska (2021). Individuals and organisations suffer, as well as society as a whole, when there is a lack of harmony among various aspects of life. Workplace burnout, discontent, and unproductive absences are all possible consequences of working too many hours. On the other hand, employees' personal problems can have an impact on their productivity. In light of the above, the article's goal is to describe the essence of the balancing act between work and home life COVID-19 pandemic as an important quality of life factor. Achieving the stated objective necessitates the following questions: Is it possible that the pandemic has had an impact on how people view their work-life balance. Has the pandemic changed how people feel about the amount of free time they have and how they spend it? How do men and women differ from each other, if at all? To address the issue of measuring work-life balance and the impact it has on quality of life, a diagnostic survey method was used in Poland in December 2020. It was created by students and faculty at the University of Economics in Katowice's Department of Forecasting and Labor Market Analysis. For this article's limited space, the author chose to focus on gender differences in the responses. In many families, responsibilities and tasks are still unequally distributed, even after many changes in the last few decades. Since women are more likely than men to experience a conflict balance between professional and personal obligations, as well as the consequences of this, the COVID-19 pandemic has been particularly severe.

"The impact of COVID-19 is far-reaching," write Soni & Jain (2020) in their article. We've all embraced the new normal, even if it has come as a surprise to some. Teaching is a profession that could easily be shifted online. The process was simplified thanks to technological advancements, but it was still difficult for those who had to do it, especially for female educators who had to deal with a unique set of challenges related to juggling work and home life with little help from family members. This study examines the work-life balance of female educators and their personal experiences in education. There were quantitative and qualitative components to the study. An online survey of female educators in Jaipur's PostGraduate Diploma in Management (PGDM) programmes collected 150 responses in the quantitative phase. Semi-structured interviews were conducted with 30 participants who volunteered to participate in the qualitative phase. Working environment, social support at work and personal social support in the home emerged as five themes from the qualitative phase of research. Findings in the existing literature supported each of these themes, and this was discussed in depth in the section devoted to it.

Ranji & Priya (2021) for women, balancing work and family life can be a difficult task, especially when they also have a full-time job. In light of COVID-19's recent pandemic, however, things have taken a dramatic turn. As a result, all of the company's employees are now doing their work from home. In order for work and home life to coexist peacefully, employees in the information technology industry face a great deal of mental and emotional strain. In light of the current pandemic, all IT employees have been instructed to work from

home, or WFH. Based on this, the female employees who work from remote locations should be able to balance their work and family lives. Working and raising a family will have to coexist in harmony for them. Women working remotely in the COVID-19 era are the focus of the current study, which examines how they manage work and home life.

When the COVID-19 pandemic hit the United States in 2020, it caused a major upheaval in educational settings across the country, putting a tremendous amount of stress on educators and students alike. Teachers' psychological well-being is being monitored as the virus makes its way across the pond. Teachers' anxiety peaked when schools were closed and peaked again when reopening announcements were made. During the summer term, teachers in fee-paying schools reported higher levels of anxiety than teachers in state schools, most likely due to the fact that they delivered more "live" online lessons. Head teachers reported a significant increase in anxiety and a greater likelihood of quitting the profession as a result of the experience.

Aims of the study were to identify and gather information on the benefits and drawbacks of working from home (Work from Home) during the pandemic COVID19 according to Purwanto *et al.*, (2020). Working from home during the pandemic COVID-19 can have both advantages and disadvantages, according to a study that uses the case study method to investigate these issues. Participants in this study were all sixth graders at a Tangerang school. Those who take the survey have their initials scrawled on their foreheads in order to maintain their anonymity. As a result of the literature review, semi-structured interviews were conducted, and the following questions were developed: Those who participated in this study were elementary school teachers in Tangerang, West Java. This study found that the WFH programme has both advantages and disadvantages. Work-from-home activities have many advantages, including the ability to complete work in a more flexible manner, the absence of the need to pay for transportation or gasoline costs, and the ability to reduce the stress of traffic jams. With WFH, workers may lose motivation to keep up with electricity and internet costs, which could lead to data security issues.

Work-life balance has long been an issue for people around the world, according to Jain & Rawat (2021). While it's clear from literature that women have been involved and that it's a real phenomenon, Work-life balance was difficult for both men and women because of the COVID-19 lockdown, which made everyone work from home. Simply put, if you are working from home, you will be subject to additional duties and expectations arising from the pandemic. While it doesn't really matter if you're a man or a woman, there will always be little eyes and elderly hands reaching out for help. During this time of uncertainty, focusing on work has become a major challenge because the question of job security and stability automatically comes up. So, what would be the appropriate course of action and strategy for achieving a healthy work-life balance? For this purpose, a study was conducted that included both men and women. The researchers used a pre-made questionnaire to conduct an online poll of their subjects. A random sample of 55 men and 55 women were chosen as respondents because conducting a door-to-door survey was impossible during the lockdown.

The authors are Buhimschi & Weinreich (2021). This year's pandemic of coronavirus disease (COVID-19) has impacted the ability of academic health science faculty to maintain a healthy work-life balance. A survey of faculty members' personal and professional characteristics was conducted as part of this study to better understand the pandemic's impact on faculty and the policy implications that resulted. A 93-question survey was sent to faculty at an urban public university and medical centre. Data on demographic, family, and academic characteristics, as well as work distribution and productivity before and during the pandemic, stress, and self-care data, were collected. Professors with similar traits were identified using a latent class analysis (LCA). ANOVA and chi-squared tests were used to make comparisons between the various latent classes in the dataset. Sixty percent of the 497 participants were female. A total of four distinct latent classes of professors were derived from the six significant indicator variables studied. More women, assistant professors, and nontenured members of Class 1 faculty were more likely to have a high level of work and home stress; Class 2 faculty members were more likely to have a high level of work and home stress; Class 3 members were more likely to have a moderate work but low home stress; and Class 4 members were nontenured adjunct professors. Increasing administrative and clinical responsibilities, as well as academic project productivity and self-care deferral, impacted Class 2. This outbreak hasn't hit every member of the faculty equally. Increased workloads, stress, and a lack of time for self-care have impacted people in their early and mid-career stages. -management. Educators must take into account the diversity of their faculty when making changes to employment or promotion policies.

3.0 Research Methodology of the Study

The method of sampling chosen for this study is simple random sampling. The reasons for choosing this method is that, the study focus on the women teaching professionals who are working in private institutions. The study is going to be conducted in private educational institutions run in Coimbatore district, Tamil Nadu. Since there are a greater number of teaching professionals are working in these institutions, a list of private institutions is taken from the internet and arranged in alphabetical order. And then a simple random sampling technique was used to select the institutions where 25 from private sector were selected separately. A survey was conducted using a structured questionnaire on work life balance, where the researcher distributes it to them through online mode via Google survey. The method of data collection is quantitative in nature. The concerned women teaching professionals from various private educational institutions running in Coimbatore district were approached through phone to get permission to collect their opinion on the challenges faced by them while working during the pandemic of COVID 19.

The population of the study targeted all the women teaching professionals who are working in educational institutions during the pandemic of COVID 19. This is because to study whether they face challenges due to work life balance especially conducting online classes during the pandemic. The sample size used for this study is 200 respondents who are,

women teaching professionals working in Coimbatore District, Tamil Nadu. Out of which 150 responses were taken for consideration and 50 responses were rejected because of incomplete data. The method of data collection used for this study is survey technique using structured Questionnaires. The study uses Primary data as the source for data analysis. The primary data for this study has been collected for a period of May 2020 to July 2020 the study uses Quantitative Approach for data collection and data analysis.

A structured questioner was used for collecting the survey data from the respondents. The questionnaire has the following parts and they are:

- Personal profile
- Company Information/ Job Profile
- Support from Officers
- Support from Co-workers
- Support from Co-workers
- Positive Parenting
- Parental Satisfaction
- Spouse Support
- Domestic Support
- Role Overload
- Job Satisfaction

The results of the Cronach's alpha retrieved from the SPSS output shows that the reliability of the Dimensions is good. The reliability values are above 0.7, which indicates that the instrument used for the study is reliable (Nunnally, 1976). For the empirical and statistical justification of the study, following hypotheses are framed.

- There is no significant influence of work life balance among the groups of Demographic variables of the respondents.
- There is a no association between the variables of Work Life Balance and Job satisfaction.

To analyse the results of the above hypothesis, ANOVA and correlation tests were used using SPSS software and the results were presented below.

4.0 Analysis and Interpretation

The following table 1 gives the work life balance measurement against the demographic variables of the respondents of the study. One of the objectives of the study is that to find out whether there is any difference of influences of various groups of the demographic variables on the level of work life balance of the respondents. To find out the results for this objective, ANOVA test has been carried out.

Table 1: Work Life Balance and Demographic Variables

Work Life Balance and Demographic Variables				
		Mean Square	F	Sig.
Family type	Between Groups	3.843	29.09	0.000
	Within Groups	0.132		
age	Between Groups	0	0.001	0.980
	Within Groups	0.521		
education	Between Groups	0.227	0.395	0.531
	Within Groups	0.575		
designation	Between Groups	0.013	0.073	0.787
	Within Groups	0.175		
experience	Between Groups	0.091	0.083	0.774
	Within Groups	1.094		
income	Between Groups	2.804	2.253	0.136
	Within Groups	1.245		

Source: Primary data

4.1 Interpretation

When looking at work-life balance among the different groups of the demographic variable 'family type', it is seen that the differences were statistically significant, as indicated by the levene's significant value (0.000). There is no significant influence between the different age groups of the respondents on the level of work-life balance of the respondents as the levene's significant value (0.980) exceeding the significance threshold of 0.05. In the case of different groups of educational qualification of the respondents, it is seen that the level of work-life balance is having no significant difference (F=0.395) as the levene's significant value (0.531) is greater than the significance level of 0.05. There is no statistically significant difference among the different groups of designation of the respondents' (F=0,073), as the value of the levene (0.787), indicates that it is greater than the level of significance of 0.05. It is also noted that the levene's significant value (0.774) of different groups of experience of the respondents is higher than the 0.05 threshold, indicating that there is no statistically significant difference between the different groups of the respondents' experiences with work-life balance. For different groups of income of the respondents, it is seen that the significant value of the levene's (0.136) is greater than the level of significance of 0.05, which indicates that there is no statistically significant difference between the groups of income level of the respondents and their work life balance level.

The following table 2 gives the results of relationship between various variables of work life balance of the respondents of the study. The second objectives of the study is that to find out whether there is any relationship between the variables of work life balance and job satisfaction level of the respondents. To find out the results for this objective, Correlation test has been carried out.

TABLE 2: Results from Correlation Analysis

	Support from Officers	Support from Co-workers	Positive Parenting	Parental Satisfaction	Spouse Support	Domestic Support	Role Overload	Job Satisfaction
Support from Officers	1							
Support from Co-workers	0.078	1						
Positive Parenting	0.074	0.923**	1					
Parental Satisfaction	0.102	0.573**	0.596**	1				
Spouse Support	0.057	0.599**	0.651**	0.437**	1			
Domestic Support	0.074	0.923**	1.000**	0.596**	0.651**	1		
Role Overload	0.019	0.371**	0.419**	0.125	0.235**	0.419**	1	
Job Satisfaction	0.509	0.528	0.648	0.608	0.785	0.648	0.465	1

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data

Interpretation

It is seen that 'Positive Parenting' and 'Domestic Support' (1.000) have very high and perfect correlation that indicates a very good relationship between them. It is seen that there is a high correlation between 'Support from Co-workers' with 'Positive Parenting' and 'Domestic Support' (0.923). It is also noticed that there is a good correlation between the 'Spouse Support' and 'Job Satisfaction' (0.785). There seems to a good relationship between 'Spouse Support' with 'Positive Parenting' and 'Domestic Support' (0.651). There is a reasonably good relationship between 'Positive Parenting' and 'Domestic Support' with 'Job Satisfaction' (0.648) and also between 'Parental Satisfaction' and 'Job Satisfaction' (0.608).

There is a moderate correlation between 'Support from Co-workers' with 'Parental Satisfaction' (0.573), 'Spouse Support' (0.599) and 'Job Satisfaction' (0.528). And also between 'Parental Satisfaction' with 'Positive Parenting' and 'Domestic Support' (0.596). 'Support from Officers' and 'Job Satisfaction' (0.509) also have moderate correlation.

It is seen that the 'Spouse Support' and 'Parental Satisfaction' (0.473) have low correlation. Also 'Role Overload' with 'Positive Parenting' and 'Domestic Support' (0.419) and 'Support from Co-workers' (0.371) has low correlation. And also 'Role Overload' and 'Job Satisfaction' (0.465) also have low correlation.

It is noticed that 'Support from Officers' with 'Support from Co-workers' (0.078), 'Positive Parenting' (0.074), 'Parental Satisfaction' (0.102), 'Spouse Support' (0.057), 'Domestic Support' (0.074) and 'Role Overload' (0.019) is very low correlation. Also the

correlation between ‘Role Overload’ with ‘Parental Satisfaction’ (0.125) and ‘Spouse Support’ (0.235) is also very low.

5.0 Discussion

Work-life balance has long been an issue for people around the world, according to Jain & Rawat (2021). Work-life balance was difficult for both men and women because of the COVID-19 lockdown, which made everyone work from home. But it is clear from literature that women have been involved to additional duties and expectations arising from the pandemic, if working from home.

During the COVID-19 pandemic, researchers discussed the importance of finding a work-family balance, according to Skorska (2021). Individuals and organizations suffer, when there is a lack of harmony among various aspects of life. In this study, the outcome says that there is high positive relationship between the various factors of work life balance like support from other like the higher officials and co-workers. And also variables like domestic support and spouse support that have high impact with the work life balance level among the respondents. On the other hand, employees' personal problems can have an impact on their productivity. The study also says that the work life balance variables like spouse support, parental satisfaction, positive parenting and domestic support were having a very high relationship which implies that if an individual is having a good personal life, then it increases their job satisfaction level also.

According to Kumpikait-Valinien *et al.*, (2021), the COVID-19 pandemic impacted daily life and work. In this study, the result shows that there is no difference among the groups of demographic variables of the teaching professionals and the level of work life balance during the pandemic. Martin Daumiller, Raven Rinas, and Julia Hein says that the COVID-19 pandemic forced many professors to teach online because of the time constraints of traditional classrooms due to which the work life balance has been disturbed to some extent. Teaching professionals of educational establishments of higher learning face increasingly complex responsibilities, according to Ilic-Kosanovic (2021). This study also says that the teaching professionals were feeling work over load to a moderate level that impacts their job satisfaction level.

5.1 Suggestions / Recommendations

- Female employees should prioritise their tasks in order to avoid work-family conflict and reduce their levels of role overload.
- Yoga and meditation play a vital role in all of our daily lives, which creates a healthy atmosphere because they can avoid stress and increase concentration. Management can organise programmes to relieve its employees of stress and other factors to avoid an imbalance between work and life.

- Achieving adequate self-management can be difficult, particularly when it comes to getting enough sleep and nutrition. People should develop the habit of dealing with things with ease as they grow older.
- Proper leisure management should be adopted in order to minimise interruptions and distractions in work and life.
- Counselling and guidance, along with an orientation program, should be conducted in order to make them aware of the nature and importance of their work, which helps them to reduce their stress.
- Women have to be recognised when they perform their duties effectively both at home and at work.
- A set number of paid days off work per year should be made available to employees who need to care for sick children or elderly parents who are unable to care for themselves.
- SWOC analysis has to be done periodically to identify their weaknesses and challenges and to make them positive, which makes them flourish in their work and life.

5.2 Limitation of the study

The primary limitation of the study is that it takes a broad view of work-life balance to investigate but does not consider the well-being of the employees in the organization, industry or location. To investigate a research problem especially during pandemic of COVID 19, a researcher should have insights from different studies during the pandemic. This is because this is just the very beginning of the COVID19 situation, where there is no enough time to review. And also the current situation is changing rapidly during the pandemic as time goes on which is un-predictable. So, the research needs a lot of time to gain accurate information and analysis for constantly changing environment as well. Moreover, different people have different perspectives and challenges during the pandemic and so the researcher was not able to address all the specific challenges during data collection. The recommendations based on this research cannot be seriously considered as accurate as the situations and mindsets of the people changes frequently during the pandemic. To overcome these limitations in this study, researchers will need more time, money and a proper plan to contribute to the literature of comprehensive work-life balance study.

6.0 Conclusion

Teachers contribute significantly to the social fabric of our society. In the course of COVID-19, we should extend our concern for schools and students to include teachers and their families as well. Teachers may become vulnerable and unable to cope with the demands of their professional and personal lives if appropriate support is not identified and provided. This can have a negative impact on their mental and physical well-being. We could see a significant decrease in the number of teachers in our schools and an increase in our current economic burden as a result of this change. It is significant that each and every woman has to

lead a balanced life to avoid the conflicts that arise in their work and personal lives. Women play a dynamic role in building a smooth relationship and balancing their work and family life. They can't blame others for their imbalance in any situation. If they create such a situation, it leads to depression, which automatically affects their health. Hence, women must empower themselves to equalise work and home life.

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Investigation of Groundwater Level Fluctuation and Trends: A Case Study of Bhiwani District, Haryana

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ABSTRACT

Groundwater is a major source of freshwater in many parts of the world and India is the largest groundwater user in the world, with an estimated usage of around 230 cubic km per year, more than a quarter of the global total. Groundwater has made significant contributions to the growth of India's Economy and about 15 percent of India's food production and 85 percent of drinking water supplies is currently dependent on unsustainable groundwater use. Due to the rapid growth in population and the associated land-use have led to a groundwater resources are overexploited in different part of the India. The state of Haryana has witnessed a spectacular increase in agricultural production with perpetual deficit of groundwater because canal/river water is not sufficient to meet the demands of drinking and irrigation practices, farmers are mining groundwater through a large number of tube wells has increased from 0.02 million in 1966 to 0.93 million in 2021 showing alarming sign of exploitation. The main objective of this study has analyzed the variability in depth to water level below ground level, study is to identify the groundwater critical zones and abrupt change point detections spatially and temporally rests on secondary data sources pertaining to rainfall, area under irrigation, net irrigation demand of crops, technical stipulations of river, number of wells, and groundwater level data of 204 observation wells obtained from the Groundwater cell, Department of Agriculture, Government of Haryana with respect to seven community development block of district Bhiwani during 1974-2021. The trend and rate of change in groundwater levels was predicted by performing statistical tests such as Mann–Kendall test, Sens slope estimator and simple linear regression. The analysis of results indicated a mix of negative and positive trends in the groundwater levels. However, the negative trends were much more pronounced than positive ones. Significant decrease in groundwater level is found in 82.12% of wells as obtained through Mann-Kendall analysis at 95% confidence level. The average depth to groundwater level in the district Bhiwani has ranged from 21.04 to 28.48 meter below ground level (mbgl). The mean of groundwater level was found to be 24.26 mbgl. The groundwater depletion in major part of the district may be considered to indiscriminate abstraction for irrigation and drinking purpose and fluctuation in rainfall trend. In addition both anthropogenic and climatic factors have led to groundwater depletion in the study area. The research will be helpful for planners and policy makers toward judicious utilization of groundwater resources in the district.

Keywords: Economy; Overexploited; Spatially and temporally; Trend; Anthropogenic and climatic factors; Mann–Kendall test; Sens slope estimator.

1.0 Introduction

Water is the most fundamental substance to the existence of Life. Water scarcity in

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many part of world has become a common problem because 40% of earth surface is covered by arid and semiarid zones (Oki & Kanae 2006; Khayat *et al.*, 2006). More than 2 billion human being live in water stressed river basins with less than 1,700 m³/year of available water per capita and in northern Chile, water availability per person is lie between 500 to 1000 m³/year such a range is considered internationally to be constraining for the sustainable and economic development of countrys (Johnson *et al.*, 2001; Ribeiro *et al.*, 2014). It is widely recognised as one of the major challenges to social development. Approx. one third of the world's freshwater demand is fulfil through groundwater natural resources (Moreaux & Reynaud 2006; Hetzel *et al.*, 2008; Mevlut & Tayfun 2010). Groundwater is the important components of the hydrological cycle and it may be defined as water occupying all the voids within a geologic stratum (Todd & Mays 2005; Goyal *et al.*, 2008) or it may be defined as water which occurs in the zone of saturation and theoretical surface to which groundwater rises in an open hole under its natural potential is known as water table. Groundwater is that interstitial water which occurs in the zone of saturation. Theoretical surface to which ground water rises in an open hole under its natural potential is known as water table. The depth of the ground water table from the ground level is termed as water level. The ground water is considered as a resource for human societies. Groundwater is an important part of the global freshwater natural resource because of the physiological needs of living being. It not only supports life on earth, but also governs the economic, industrial and agricultural growth of a nation. Groundwater is the key source of water for agriculture and drinking in low rainfall arid and semiarid regions where there are no other water resources. In fact worldwide, greater than 2 billion people depend on groundwater for their daily uses (Kemper, 2004). According to Tharme, 2003 groundwater forms the largest contribution approx. 97% of the world is freshwater supply and also it perform the crucial role of maintaining the biodiversity and habitats of sensitive ecosystem. Groundwater abstraction has been spontaneously and continuously increasing worldwide and it is often overexploited to relieve water stress (Yang & Zehnder 2002; Van *et al.*, 2010). The overexploitation of groundwater has caused serious declines in groundwater level (Phien-wej *et al.*, 2006; Aggarwal *et al.*, 2009; Chawla *et al.*, 2010; Shamsudduha *et al.*, 2009; Kaur *et al.*, 2011; Panda *et al.*, 2012;). In most parts of the developing world overexploitation of groundwater occurred between 1970 and 1990 (UN/WWAP, 2003; Villholth, 2006). Akther *et al.*, 2009 said about the declining trend of groundwater level have adverse impacts on the environment such as groundwater depletion and land subsidence, firstly affects aquifer sustainability and the latter results due to the compaction of aquifer materials (Konikow & Kendy 2005). The other impact are groundwater pollution due to additional recharge from other wastewater sources (Hoque *et al.*, 2007; Berg *et al.*, 2007). Reduction in the availability of surface water due to the decrease groundwater discharge can adversely affect ecosystems (Zektser *et al.*, 2005; Konikow & Kendy 2005). Global estimates show that more than 4,430 cubic kilometer of fresh water resources are withdrawal yearly of which more than 70% are used in agriculture and rest are used in other sector (Kinzelbach *et al.*, 2003). Among all the country India is the greatest consumer of groundwater in the world, it consume more than total groundwater abstraction of the USA and

China with an estimated annual abstraction more than 230km³ (Chinnasamy & Agoramoorthy, 2015; Bhanja *et al.*, 2017). Besides, household and agriculture sector consume over 85 and 60% respectively of the groundwater (Hoekstra, 2013). According to the central groundwater board (CGWB) 2012 report based on the annual water abstraction – to- water available ratio, the mostly part of India’s land areas lie in the category of highly water-stressed. Climate change is one of the major problems facing human being today. According to the Intergovernmental Panel on Climate Change (IPCC, 2011a), global sea levels have risen between 0.1m and 0.25m and global mean temperature have risen 0.3-0.6°C by 2100 relative to 1990 due to the emissions of greenhouse gases (McCarthy *et al.*, 2001). Climate change will bring about numerous environmental problems may include loss of vegetation, reduction of porosity, and the most severe will relate to groundwater resources and the effects of global warming on groundwater natural resource will depend on the its geographical location, groundwater system and change in hydrological variables (Alley, 2001; Biswas, 2003; Huntington, 2006; Sophocleous, 2004; Loaiciga *et al.*, 1996; Milly *et al.*, 2005 & IPCC, 2007). Temperature increase also affect the hydrological cycle by directly increasing evaporation and vegetation transpiration and indirectly impacts the flux and storage water in surface and subsurface reservoirs (Toews, 2003). Groundwater level changes and its trends were assessed spatially and temporally in Bhiwani district, Haryana, using geographical information system (GIS) for the period 1973–2019. As per the Statistical Abstract from the department of economics and statistical analysis, the number of tube wells for irrigation usage has increased from 0.02 million in 1966 to 0.93 million in 2019. Due to continue increased demand of available groundwater resources has caused depletion of groundwater. All these factors have eventually led to more power requirement for lifting of water for irrigation consumption and thus affect the economic conditions (Tiwana *et al.*, 2007). In 2020-2021, net irrigated area in the district was 283000ha, out of which, 60000ha (21%) was irrigated by surface water and 220000ha (79%) with groundwater (Anon. 2021). Due to more dependence on groundwater to meet its huge irrigation needs, the sustainability of the resource is a major concern in the district. Hence, there is a need for a detailed study of groundwater levels and the factors (both anthropogenic and natural) affecting its dynamics and resulting in negative effects to the environment. Therefore, the objective of the present study has been to analyze long term variability in groundwater levels, its relation with other factors groundwater development, and possible consequences in the Bhiwani district.

1.1 Objectives of the study

In Bhiwani district, groundwater is used intensively and some blocks are over-developed or developed as per the norms of Central ground Water Board. In the light of these facts, the present study has been attempted to investigate the “Impact of Depleting Ground Water Resources on the Start-Up Ecosystem and Rural Entrepreneurship” with following objectives.

- To develop spatio-temporal maps for the groundwater level and its fluctuations in Bhiwani district

- To identify the causes of groundwater fluctuations and remedial measures

2.0 Review of Literature

Numerous studies have attempted to quantify the magnitude of global groundwater depletion rates and accessibility (Almedeij & Al-Ruwaih 2006; Shamsudduha *et al.*, 2009; Schwartz & Ibaraki 2011; Bloomfield *et al.*, 2018). Christakos (2000) studied the use of geo-statistical techniques (parametric and non-parametric test) on the height of water table of 70 wells in Kansas with successful results. Hoque *et al.*, (2007), Akther *et al.*, (2009) and Shamsudduha *et al.*, (2009) utilized the geo-statistical modeling to examine the spatio-temporal variability of groundwater level fluxes and trends in Dhaka and the Ganges–Brahmaputra–Meghna Delta and witnessed positive (declining) trends of groundwater levels in urban and semi-urban areas, whereas negative (rising) trends in estuarine and coastal region.

Tabari *et al.*, (2012) have examined spatial and temporal patterns of groundwater levels in Darab plain of Northern Iran and showed the positive trends in groundwater levels.

Yao *et al.*, (2014) have applied geospatial interpolation techniques to reveal the groundwater level fluxes and trends in north-west China and observed falling trends.

Ribeiro *et al.*, (2015) conducted a study to evaluate the piezometric trends in the alluvial aquifers of the Elqui river basin in central Chile and observed that the groundwater levels have decreased (falling trends) in majority of wells.

In the changing scenario of climate, the role of groundwater is significant, due to its relative stability in terms of quality, quantity and availability throughout the year. Moench (1992) analyzed the tendency of overexploitation of natural water resources is rooted in the rapid spread of modern pumping technology, subsidized power supply and governmental policies. The explosion in access to mechanical pumping technologies is a clear factor encouraging the overdevelopment of natural groundwater resources.

Shah *et al.*, (2003) investigated the use of groundwater for agriculture purposes in south Asia and North China plains during 1970 to 1995 and found that India, China, Pakistan, Bangladesh account for bulk of world's use of groundwater in different sectors (agriculture, drinking and industrial). Overdevelopment of groundwater resources has created a serious problem of resource depletion and deterioration in the quality of water.

Bhalla (2007) assessed the impact of declining of groundwater level on the farmer's crop response function in Haryana (India). The natural groundwater resources problem in Haryana is distinct as the state experiences both waterlogging as well as declining trends of groundwater levels simultaneously. It is all more disturbing to find that cultivation of water-intensive crops like rice and number of tubewells are increasing in the regions where the depth to water levels is declining. However in Mahendergarh district cause of declining water levels is due to its rocky type topography.

Naik *et al.*, (2008) have investigated the groundwater levels of Solapur (Maharashtra) and witnessed significant falling and rising trends in the main city (on account of increased

recharge and decreased groundwater abstraction) and outside the city (due to use of groundwater for agricultural purposes), respectively.

3.0 Research Methodology

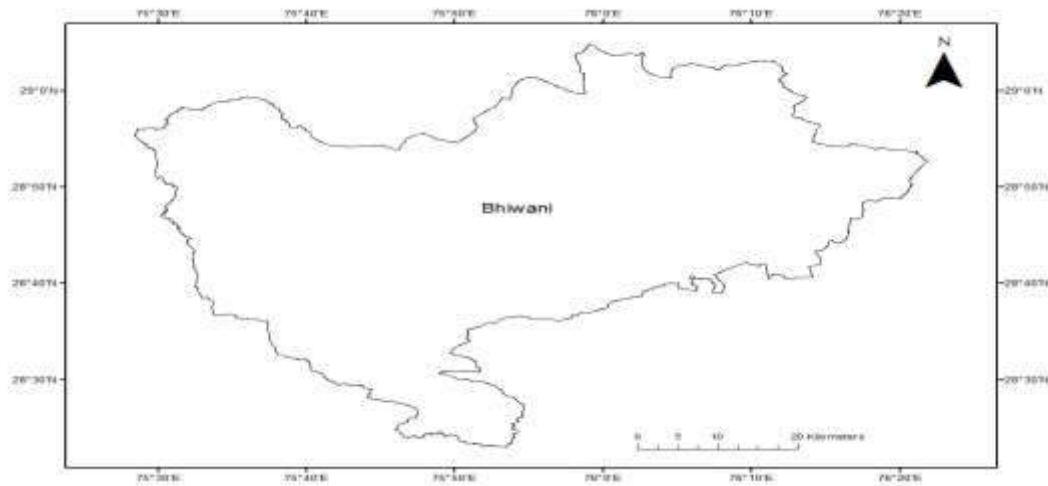
3.1 Study area

The state of Haryana, is located in northwest of India is one of the smallest states in India with its capital at Chandigarh, and it extends between 27°39' to 30°35' N latitude and between 74°28' and 77°36' E longitude. Haryana state covering an area of 44,212 sq. km accounting about 1.38 percent of the total geographical area of the country and it contributes more than 6% of country's total food production. Haryana was carved out of the former state of Punjab on 1966 and administratively, the state has been bisected into 22 district, 118 Community Development (CD) blocks and 9 physiographic units. Bhiwani district lies in South-Western part of Haryana state and it was carved out by reorganization of the state in 1972, the district was the largest district of the state by area, before the creation of Charkhi Dadri as a separate district. The total geographical area of the Bhiwani district is 3297sq. km accounting about 7.8 per cent of the total area of the state. The district comprised of 444 village, 8 town and seven blocks viz. Bawani Khera, Bhiwani, Kairu, Tosham, Siwani, Loharu and Behal. In general, geomorphologically the district consist of flat and level plain disturbed from place to place by clusters of sand dunes and the topography values lie in between 210 to 280 above mean sea level. According to census 2011, it had a population of 1634445 which had observed a growth of approx. 15% during 2001-2011. The literacy rate and density of population in the district are respectively 76% and 342 per sq.km. Approx. 21% of the population lives in urban area and remaining 79% population leaves in rural area. Dohan is the major river of the district and flows in direct response to precipitation. Only the tails of this stream falls in the south-central corner of the district and ultimately dies out in sands around villages. The climate of Bhiwani district can be labeled as tropical steppe, hot and semi-arid with excessive evapotranspiration and cold winter except in monsoon season when humid air of oceanic origin invade into the district (Raju *et al.*, 2013). The summer season start from mid March to last week of the June. May and June are the hottest month and December and January are the coldest month. Summer season is accompanied by south-west monsoon which lasts upto September. The September and October months forms the post-monsoon season. The winter season begins late in November and remain upto first week of March. The normal annual rainfall of the district is 420 mm which is unevenly distributed over the area 22 days. The south west monsoon, sets in from last week of June and withdraws in end of September, contributed about 85% of annual rainfall. July and August are the wettest months. Rest 15% rainfall is received during non-monsoon period in the wake of western disturbances and thunder storms. Generally rainfall in the district increases from southwest to northeast.

3.2 Data acquisition and methodology

This study is mainly based on secondary data, which have been procured for the period 1974–2021 from the Groundwater Cell, Department of Agriculture, Government of Haryana, Panchkula.

Figure 1: Geographic Location of the South-Western Haryana in Which My Study Area is Lies Top Most Left Sides



Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Figure 2: Geographic Location where We Got Secondary Data for Analysis South-Western Haryana in which My Study Area is Lies Topmost Left Sides



Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

It records the depth to groundwater level biannually during pre-monsoon and post-monsoon seasons. Data of a 7 community development (CD) blocks for pre- and post-monsoon depths to groundwater level have been procured for analysis and interpretation to examine the pattern and dynamics of groundwater level. In addition, ancillary data pertaining to the factors affecting level of groundwater (tube-well irrigated area, number of tube wells, area under rice cultivation, canal-irrigated area, temperature (maximum and minimum), relative humidity and amount of rainfall) have been collected for the same period from the Department of Economic and Statistical Analysis, Haryana, and India Meteorological Department, Chandigarh. The details of the methodology adopted for examining the trend and homogeneity in the groundwater level series are as discussed below.

4.0 Results and Discussion

4.1 Spatial variability

- **Block wise average and spatial variations of groundwater depth during 1974**

Spatial variations of groundwater depth at intervals of ten years from 1974 to 2021 have been present (Fig. 3 to fig. 8). Comparison of 1974, 1984, 1995, 2004, 2014, 2021 maps found a spatially non-uniform groundwater depth incline or decline. Whereas a regular decline were seen in approx. 70% of the area (maximum in south region), the depth of groundwater were found fluctuating in a shallow range of 2-50m.

The average groundwater depth map for the study area was prepared by using ArcGIS for the year 1974 (Fig. 3). By using different tools of ArcGIS, district-wise area under different groundwater depths, i.e., 0-2, 2-5, 5-10, 10-20, 20-30, 30-40, 40-50, 50-60 and 60-70 m was calculated and is shown in Table 7.

During 1974, in Bhiwani district, lowest (2.6 m) and highest (44.4 m) groundwater level was recorded in Bhiwani and Behal block, respectively (In Table 1).

- **Block wise average and spatial variations of groundwater depth during 1984**

Spatial variations of groundwater depth at intervals of ten years from 1974 to 2021 have been present (Fig. 3 to fig. 8). Comparison of 1974, 1984, 1995, 2004, 2014, 2021 maps found a spatially non-uniform groundwater depth incline or decline. Whereas a regular decline were seen in approx. 70% of the area (maximum in south region), the depth of groundwater were found fluctuating in a shallow range of 2-50m.

The average groundwater depth map for the study area was prepared by using ArcGIS for the year 1984 (Fig. 4). By using different tools of ArcGIS, district-wise area under different groundwater depths, i.e., 0-2, 2-5, 5-10, 10-20, 20-30, 30-40, 40-50, 50-60 and 60-70 m was calculated and is shown in Table 7.

During 1984, in Bhiwani district, lowest (2.8 m) and highest (47.6 m) groundwater level was recorded in Bhiwani and Behal block, respectively (In Table 2).

- **Block-wise average and spatial variations of groundwater depth during 1994**

Spatial variations of groundwater depth at intervals of ten years from 1974 to 2021 have been present (Fig. 3 to fig. 8). Comparison of 1974, 1984, 1995, 2004, 2014, 2021 maps found a spatially non-uniform groundwater depth incline or decline. Whereas a regular decline were seen in approx. 70% of the area (maximum in south region), the depth of groundwater were found fluctuating in a shallow range of 1.2-50m.

The average groundwater depth map for the study area was prepared by using Arc-GIS for the year 1994 (Fig. 5). By using different tools of ArcGIS, district-wise area under different groundwater depths, i.e., 0-2, 2-5, 5-10, 10-20, 20-30, 30-40, 40-50, 50-60 and 60-70 m was calculated and is shown in Table 7.

During 1994, in Bhiwani district, lowest (1.4 m) and highest (49 m) groundwater level was recorded in Bhiwani and Behal block, respectively (In Table 3).

- **Block-wise average and spatial variations of groundwater depth during 2004**

Spatial variations of groundwater depth at intervals of ten years from 1974 to 2021 have been present (Fig. 3 to fig. 8). Comparison of 1974, 1984, 1995, 2004, 2014, 2021 maps found a spatially non-uniform groundwater depth incline or decline. Whereas a regular decline were seen in approx. 70% of the area (maximum in south region), the depth of groundwater were found fluctuating in a shallow range of 0.8-70 m.

The average groundwater depth map for the study area was prepared by using Arc-GIS for the year 2004 (Fig. 6). By using different tools of ArcGIS, district-wise area under different groundwater depths, i.e., 0-2, 2-5, 5-10, 10-20, 20-30, 30-40, 40-50, 50-60 and 60-70 m was calculated and is shown in Table 7.

During 2004, in Bhiwani district, lowest (0.9 m) and highest (64 m) groundwater level was recorded in Bhiwani and Kairu block, respectively (In Table 4).

- **Block-wise average and spatial variations of groundwater depth during 2014**

Spatial variations of groundwater depth at intervals of ten years from 1974 to 2021 have been present (Fig. 3 to fig. 8). Comparison of 1974, 1984, 1995, 2004, 2014, 2021 maps found a spatially non-uniform groundwater depth incline or decline. Whereas a regular decline were seen in approx. 70% of the area (maximum in south region), the depth of groundwater were found fluctuating in a shallow range of 1.2-50m.

The average groundwater depth map for the study area was prepared by using Arc-GIS for the year 2014 (Fig. 7). By using different tools of ArcGIS, district-wise area under different groundwater depths, i.e., 0-2, 2-5, 5-10, 10-20, 20-30, 30-40, 40-50, 50-60 and 60-70 m was calculated and is shown in Table 7.

During 2020, in Bhiwani district, lowest (0.3 m) and highest (94.1 m) groundwater level was recorded in Siwani and Behal block, respectively (In Table 5).

- **Block-wise average and spatial variations of groundwater depth during 2021**

Spatial variations of groundwater depth at intervals of ten years from 1974 to 2021 have been present (Fig. 3 to fig. 8). Comparison of 1974, 1984, 1995, 2004, 2014, 2021 maps found a spatially non-uniform groundwater depth incline or decline. Whereas a regular decline were seen in approx. 70% of the area (maximum in south region), the depth of groundwater were found fluctuating in a shallow range of 1.2-50m.

The average groundwater depth map for the study area was prepared by using Arc-GIS for the year 2021 (Fig. 8). By using different tools of ArcGIS, district-wise area under different groundwater depths, i.e., 0-2, 2-5, 5-10, 10-20, 20-30, 30-40, 40-50, 50-60 and 60-70 m was calculated and is shown in Table 7.

During 2020, in Bhiwani district, lowest (0.3 m) and highest (94.1 m) groundwater level was recorded in Siwani and Behal block, respectively (In Table 6).

- **Block-wise average water depth (m), its range and standard deviation from the 1974 to 2021**

Table 1: Block-wise Average Water Depth (m), its Range and Standard Deviation for the Year 1974

Name of district	Name of block	Average water table depth	Range of water table		Standard deviation of water table depth
			Minimum	Maximum	
Bhiwani	Bawani Khera	20.8	9.9	22.3	3.8
	Behal	30.1	31.4	44.4	4.4
	Bhiwani	9.2	2.6	21.3	4.5
	Kairu	12.2	6.6	29.8	7.0
	Loharu	40.2	27.4	43.6	4.6
	Siwani	22.3	12.9	34.0	5.5
	Tosham	25.3	5.1	25.7	5.6

Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Table 2: Block-wise Average Water Depth (m), its Range and Standard Deviation for the Year 1984

Name of district	Name of block	Average water table depth	Range of water table		Standard deviation of water table depth
			Minimum	Maximum	
Bhiwani	Bawani Khera	16.1	8.2	20.1	3.8
	Behal	34.0	32.6	47.6	5.3
	Bhiwani	7.7	2.8	18.3	4.4
	Kairu	16.6	8.5	30.4	6.9
	Loharu	38.5	32.0	45.2	4.5
	Siwani	26.1	12.2	34.7	6.2
	Tosham	18.9	5.0	25.7	5.0

Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Table 3: Block-wise Average Water Depth, its Range and Standard Deviation for the Year 1994

Name of district	Name of block	Average water table depth	Range of water table		Standard deviation of water table depth
			Minimum	Maximum	
Bhiwani	Bawani Khera	12.2	1.9	17.2	3.8
	Behal	37.1	33.8	49.0	5.7
	Bhiwani	8.3	1.4	17.0	3.5
	Kairu	17.6	7.4	32.7	8.4
	Loharu	36.4	28.6	47.7	5.6
	Siwani	20.0	11.1	33.9	6.3
	Tosham	16.0	4.9	34.8	6.4

Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Table 4: Block-wise Average Water Depth, its Range and Standard Deviation for the Year 2004

Name of district	Name of block	Average water table depth	Range of water table		Standard deviation of water table depth
			Minimum	Maximum	
Bhiwani	Bawani Khera	6.6	1.9	16.4	3.8
	Behal	37.1	5.7	54.8	16.9
	Bhiwani	6.1	0.9	32.2	7.3
	Kairu	19.2	11.8	64.0	18.4
	Loharu	44.1	6.1	53.5	16.3
	Siwani	20.4	9.7	39.2	6.4
	Tosham	10.6	2.8	60.0	18.8

Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Table 5: Block-wise Average Water Depth, its Range and Standard Deviation for the Year 2014

Name of district	Name of block	Average water table depth	Range of water table		Standard deviation of water table depth
			Minimum	Maximum	
Bhiwani	Bawani Khera	4.5	1.6	10.1	2.4
	Behal	63.7	6.1	93.1	23.2
	Bhiwani	4.6	37.2	39.0	7.9
	Kairu	20.6	8.8	59.2	15.1
	Loharu	62.3	2.5	74.6	10.6
	Siwani	21.0	0.3	39.3	8.3
	Tosham	11.8	0.9	68.1	14.6

Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Table 6: Block-wise Average Water Depth, its Range and Standard Deviation for the Year 2021

Name of district	Name of block	Average water table depth	Range of water table		Standard deviation of water table depth
			Minimum	Maximum	
Bhiwani	Bawani Khera	4.0	1.7	11.1	2.4
	Behal	65.7	7.1	94.1	23.2
	Bhiwani	4.8	38.2	40.0	7.9
	Kairu	21.6	8.8	60.2	15.1
	Loharu	63.3	2.3	75.6	10.6
	Siwani	22.0	0.3	40.3	8.3
	Tosham	12.8	0.9	69.1	14.6

Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

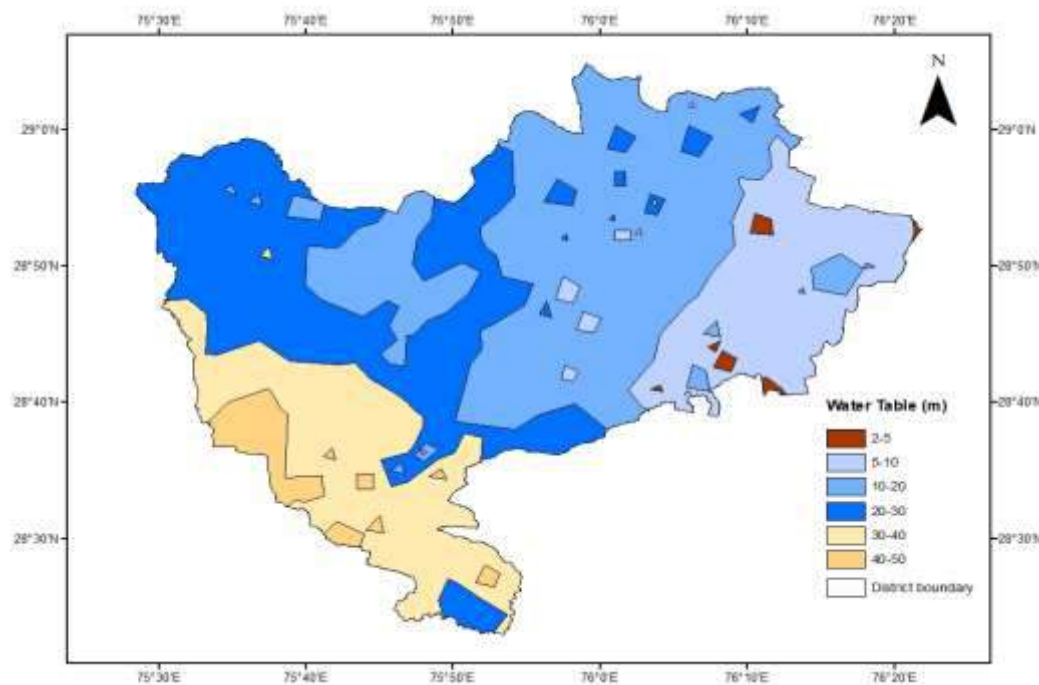
Table 7: Area (000 ha) under Different Ground Water Depths (m) from 1974 to 2021

Groundwater Depth	1974	1984	1994	2004	2014	2021
0 – 2 m	0.0	0.0	0.1	0.9	1.2	1.3
2 – 5 m	1.5	6.1	4.9	36.8	47	46.9
5– 10 m	50.0	50.7	78.5	84.2	65.7	66.7
10– 20 m	123.2	132.5	113.6	111.5	82.4	81.4
20– 30 m	90.5	72.4	61.7	25.3	46.5	45.5
30– 40 m	54.1	44.8	37.6	20.8	19.6	20.6
40– 50 m	10.4	23	33.4	22.4	11.1	12.1
50– 60 m	0.0	0.0	0.0	24.3	16.6	15.6
60– 70 m	0.0	0.0	0.0	3.6	19.3	21.3
70– 80 m				0.0	18.2	16.2
80 – 90 m					2.1	1.1
90-100 m					0.0	1.0
100-110 m					0.0	0.0
Total	329.7	329.7	329.7	329.7	329.7	329.7

Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

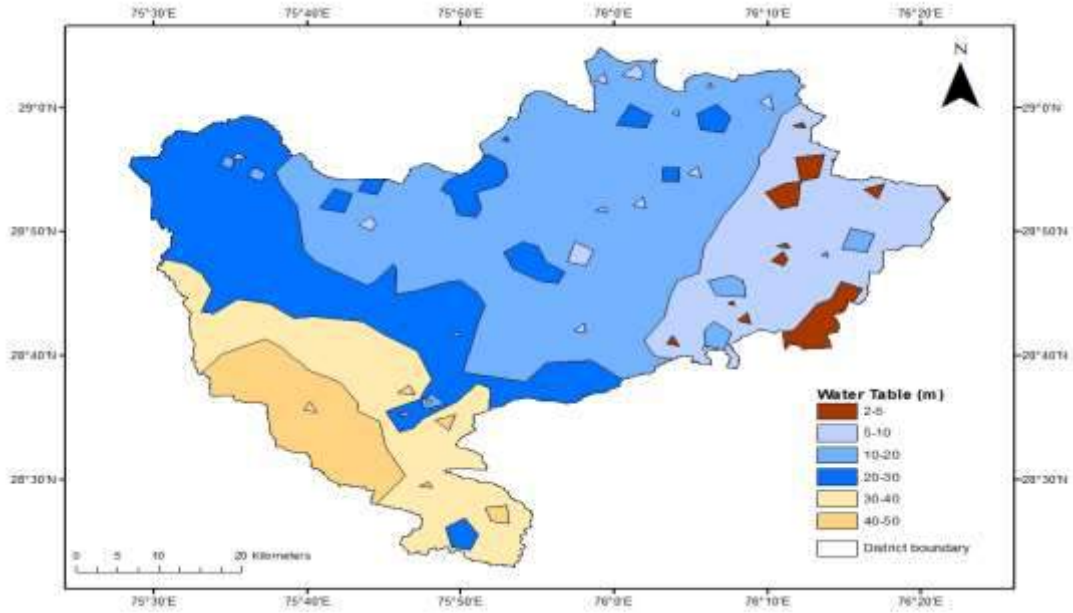
- **Spatial variation of groundwater depth from 1974 to 2021**

Figure 3: Spatial Variation of Groundwater Depth in 1974



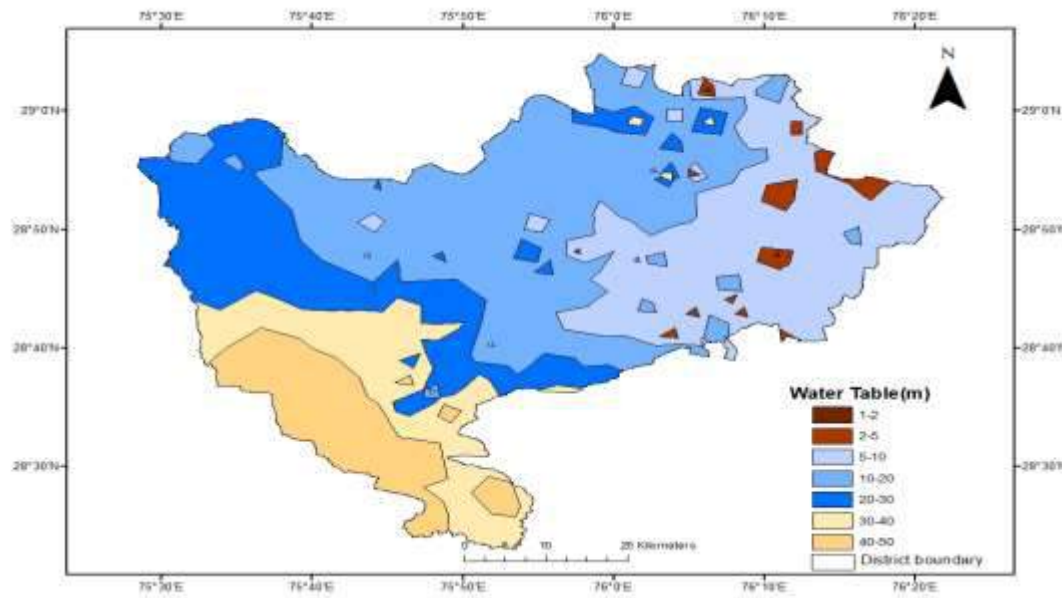
Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Figure: 4 Spatial Variation of Groundwater Depth in 1984



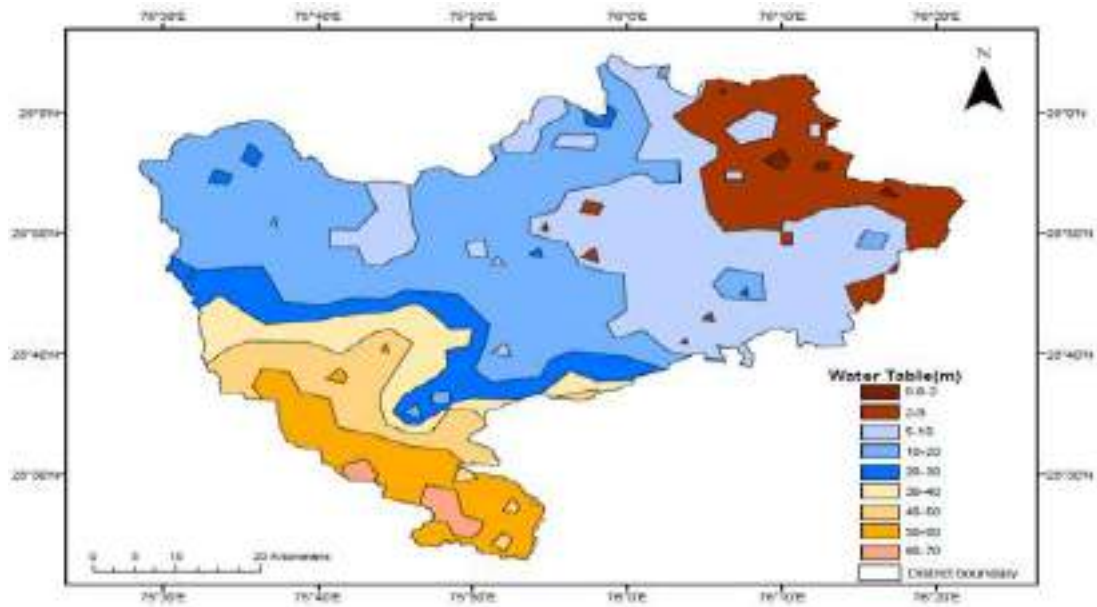
Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Figure 5: Spatial Variation of Groundwater Depth in 1994



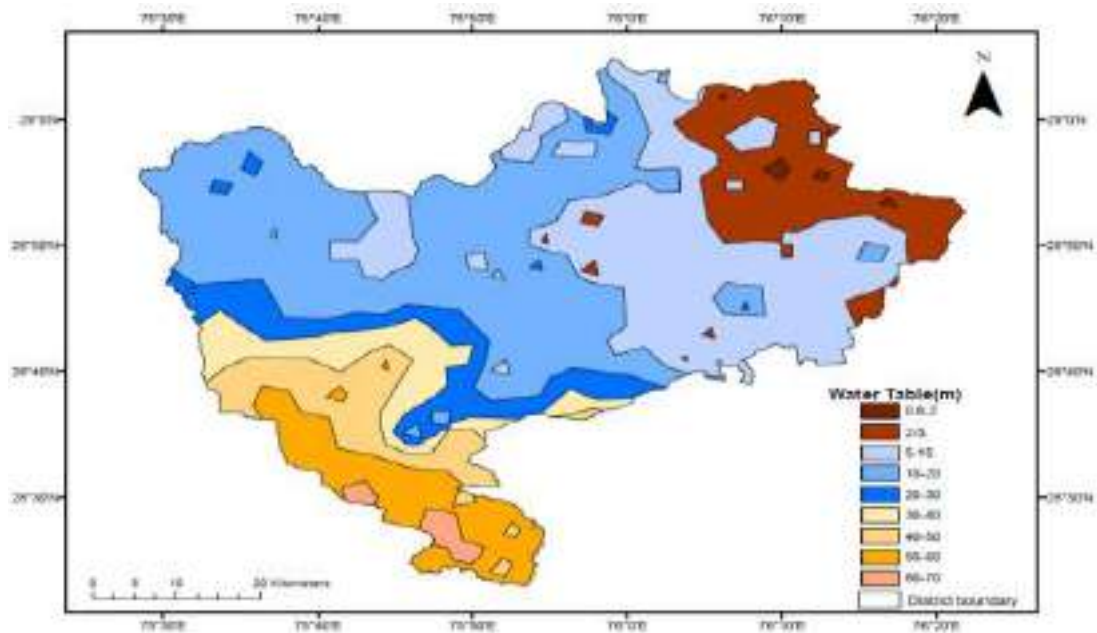
Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Figure 6: Spatial Variation of Groundwater Depth in 2004



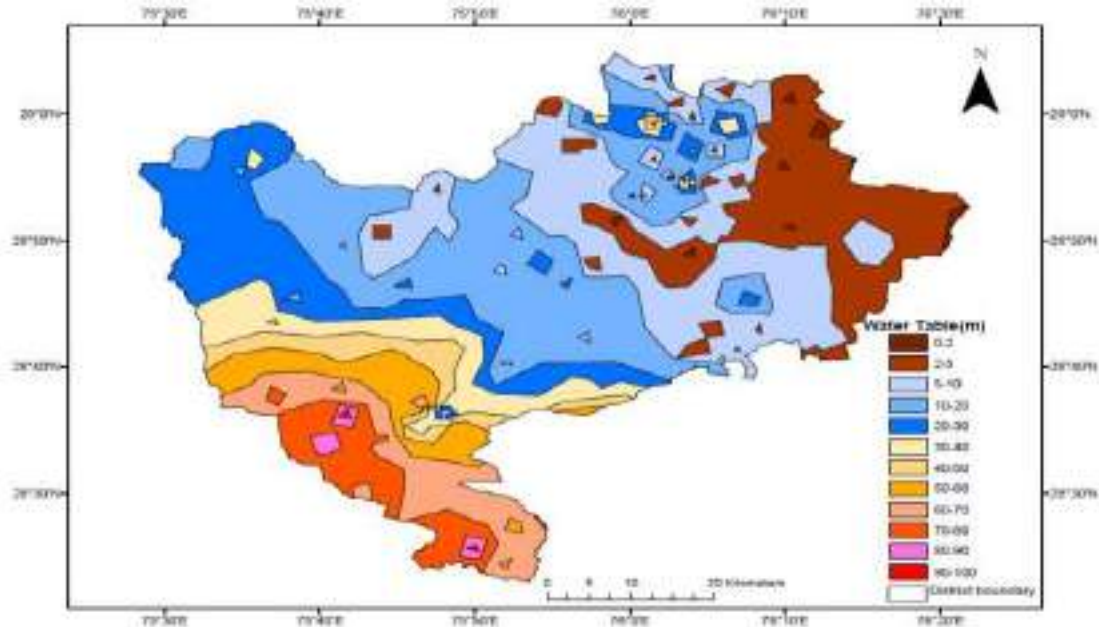
Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Figure 7: Spatial Variation of Groundwater Depth in 2014



Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Figure 8: Spatial Variation of Groundwater Depth in 2021



Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

The overall groundwater depth (m) of Bhiwani district declined from 23.44 m in 1974 to 28 m in 2021. This observation is similar with a recent study based on Gravity Recovery and Climate Experiment (GRACE), which has delineated an average decline of 0.3 m in groundwater depth in Northern India (Rodell *et al.*, 2009). The average groundwater fluctuations in each block at successive intervals of ten years is given in Table 8. During 1974-2004, the incline in groundwater depth in the district was observed to be small (district average 0.38 m). In the next ten years (2004-2014), a net decline was observed in groundwater depth, possibly due to increased discharge and rainfall in Bhiwani district.

Table 8: Block-wise Average Groundwater Depth and Groundwater Fluctuations

Sr. No.	Block	Average annual groundwater depth (m)					
		1974	1984	1995	2004	2014	2021
1	BAHAL	38.3	40.3	42.83	47	56.2	64
2	BAWANI KHERA	16.5	14.4	11.4	7.8	5.6	4
3	BHIWANI	9.9	8.6	7.2	5.9	4.6	5
4	KAIRU	18.2	17.9	17.4	18.3	19.5	22
5	LOHARU	37.8	40	41.6	51.6	58.6	63
6	TOSHAM	18.4	17.5	15.8	13.2	13.5	13
7	SIWANI	24.3	23.8	22.6	18.3	22.4	23
	District Average	21.4	23.2	22.6	23.1	26	28

Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

The water withdrawals from the wells in the Bhiwani district are estimated to exceed a 438.24 mcm (Table 9), and shows the most voluminous use of natural water resources in the state Haryana). The Bhiwani district faces severe problem of drinking water and other usable waters in many areas, as it is witnessing drastic incline in water demand and change in societal water use pattern because of rapid urbanization (Scanlon *et al.*, 2010). Presently, about 80% of the area are irrigated by groundwater sources and 70.8% of gross area irrigated to total cropped area.

Table 9: Number of Villages under Different Groundwater Depths (m) from 1974 to 2021

Groundwater Depth	1974	1984	1994	2004	2014	2021
0 – 2 m	0	0	1	1	2	2
2 – 5 m	2	8	7	50	63	63
5– 10 m	67	68	106	113	88	90
10– 20 m	166	178	152	150	111	110
20– 30 m	122	98	83	34	63	61
30– 40 m	73	30	50	28	26	28
40– 50 m	14	31	45	30	15	16
50– 60 m	0	0	0	33	22	21
60– 70 m	0	0	0	5	26	29
70– 80 m	0	0	0	0	25	22
80 – 90 m	0	0	0	0	3	2
Total	444	444	444	444	444	444

Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Table 10: Summary of Land Use Area, Total Population, Precipitation, Total Irrigated Area, % of Gross Area Irrigated to Total Cropped Area, Renewable Groundwater Resources, Groundwater Withdrawal and Total Water Uses in District Bhiwani

District	Total area estimates (as of 2011) Sq. Km.	State %	Population estimates (as of 2011) Thousands	State %	Annual precipitation (1973-2019 mean) (cm/year)	Net area under Irrigation (as of 2019) Hectare	State %	% of Gross area irrigated to total cropped area (as of 2019)	Net Area irrigated by Groundwater resources (000 Ha)	Net Area irrigated by Surface water resources (000 Ha)	Groundwater abstraction (as of 2010) (mcm/year)	Stage of ground water development
Bhiwani	3432	7.7	1634.5	6.4	36.53	283	70.8	223	60	438.24 mcm.	79	

Source: SAH (1979-1980); SAH (1989-1990); SAH (1999-2000); SAH (2010-2011).

The land uses were classified in three groups such as:

- (i) Agriculture (ii) Built-up (iii) Barren lands.

After the analysis of 47 years data we concluded that the built up area has been increased by approx. 10% over the Bhiwani district from 2000–2001 to 2011–2012, indicating rapid urbanization over study area and conversely observed decline rate in ground water depth may also be attributed to over- exploitation of groundwater resources as reported by past studies (Khazaei *et al.*, 2004).

Table 11: Classification of Land Use

LULC class	1972-1973 (000 ha.)	1982-1983 (000 ha.)	1992-1993 (000 ha.)	2002-2003 (000 ha.)	2012-2013 (000 ha.)	% of variation from 1972-1973 and 2012-2013	% of variation from 1982-1983 and 2012-2013	% of variation from 1992-1993 and 2012-2013	% of variation from 2002-2003 and 2012-2013
Total area	505	460	403	466	466	-7.7	1.3	15.6	0
Forest	4	10	8	3	3	-25	-70	-62.5	0
Barren	11	13	19	20	20	81	53.8	5.2	0
Fallow	14	22	14	16	16	14.2	-27.2	12.5	0
Net area sown	441	390	345	403	400	-9.29	2.5	16	-0.7

Source: SAH (1979-1980); SAH (1989-1990); SAH (1999-2000); SAH (2009-2010); SAH (2018-2019).

4.2 Spatial and temporal variations of groundwater fluctuation of Bhiwani

District wise average groundwater fluctuation (cm) was calculated (Table 15) by taking 1974 as reference year, *i.e.*, 1974-1984, 1974-1994, 1974-2004, 1974-2014 and 1974-2021 for Bhiwani districts. Average fluctuation of the study area was calculated through cumulative arithmetic mean by considering the area of different districts as their weight. To visualize the spatial variability of the groundwater level fluctuation from 1974 to 1984, 1974-1994, 1974-2004, 1974-2014 and 1974-2021, maps were prepared by using Arc-GIS for the study area, as shown in Figs. from 15. By using different Arc GIS tools, area under different fluctuation range from year 1974-2021 was calculated and is presented in Table 12. Further per year fluctuation and percent area under different fluctuation range was calculated from the year 1974 to 2021.

Table 12: District-wise groundwater fluctuation (cm) of Bhiwani by 1974 as reference year

Year	Bhiwani District
1974-1984	90
1974-1994	240
1974-2004	330
1974-2014	-550
1974-2021	-680

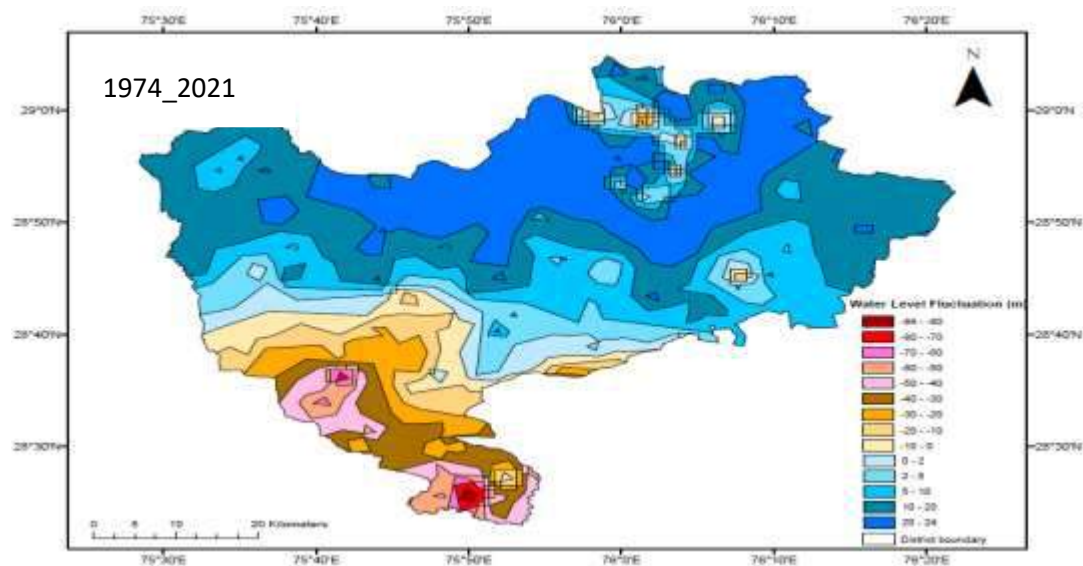
Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

The analysis found that maximum and minimum groundwater fluctuation depth in 1974_2021 years were 19.61 mbgl and -70 mbgl, respectively. The mean depth to groundwater fluctuation depth in the district in those years was -65.6 mbgl. The average annual groundwater

fluctuations in each blocks at successive intervals of ten years were tabulated in Tables 12 and 13 and an average decline of 14.8 cm per year was observed during the study period of 1974 to 2021 in the Bhiwani district.

+ve represent rise in groundwater and -ve sign represent decline groundwater

Figure 9: Groundwater Level Fluctuation Map 1974-2021



Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Table 13: Percent Area under Different Fluctuation Range from Year 1974-2021

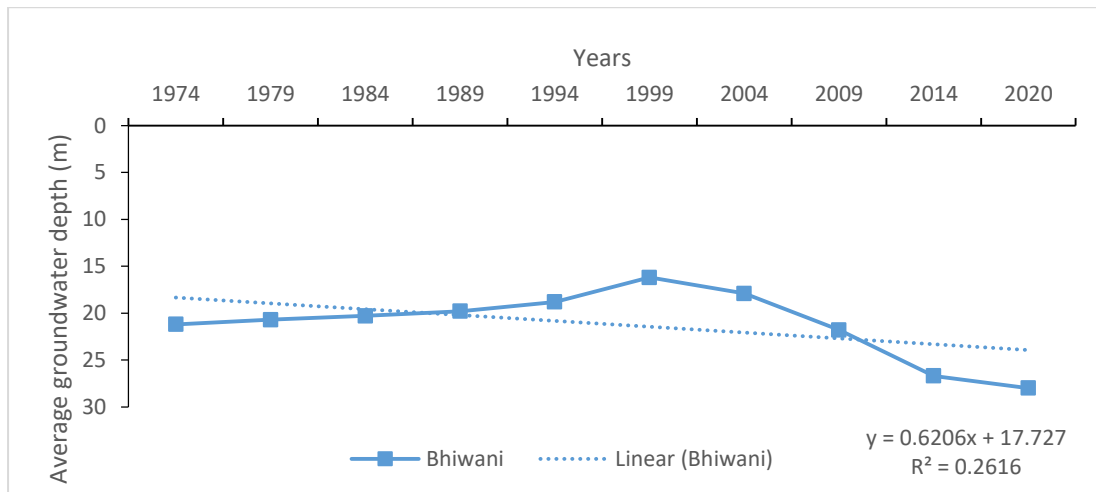
Range of fluctuation (m)	Average fluctuation (m)	Per year fluctuation (m/year)	Area (000 ha)	Percent area	S.D
-84 to -80	- 82	-1.74	0.25	0.08	2.51
-80 to -70	-75	-1.60	0.91	0.28	3.48
-70 to -60	-65	-1.38	1.40	0.42	2.11
-60 to -50	-55	-1.17	5.05	1.53	8.95
-50 to -40	-45	-0.96	8.69	2.64	18.18
-40 to -30	-35	-0.74	12.86	3.90	48.46
-30 to -20	-25	-0.53	13.24	4.02	31.25
-20 to -10	-15	-0.32	14.09	4.27	34.17
-10 to 0	-5	-0.11	15.13	4.59	31.31
0 to 2	1	0.02	17.68	5.36	18.72
2 to 5	3.5	0.07	27.10	8.22	25.92
5 to 10	7.5	0.16	50.15	15.21	52.58
10 to 20	15	0.32	90.82	27.55	148.93
20 to 24	22	0.47	72.34	21.94	175.13

Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

4.3 Groundwater depth trend for Bhiwani from year 1974 to 2021

In Bhiwani district, groundwater depth was decreased up to year 1999 but afterword its depth was increased. On the basis of trend line, declining trend of groundwater level was observed but it not much significant as the value of R^2 is very less (0.2616).

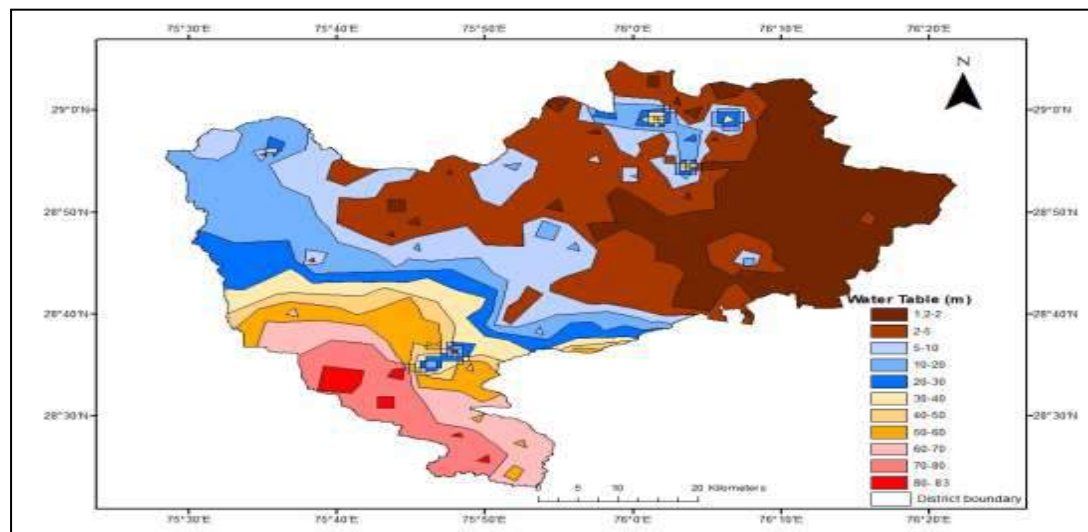
Figure 10: Average Five Year Interval Groundwater Depth (m) in Bhiwani District for the Study Period 1974-2021



Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

4.4 Seasonal effect on groundwater depth

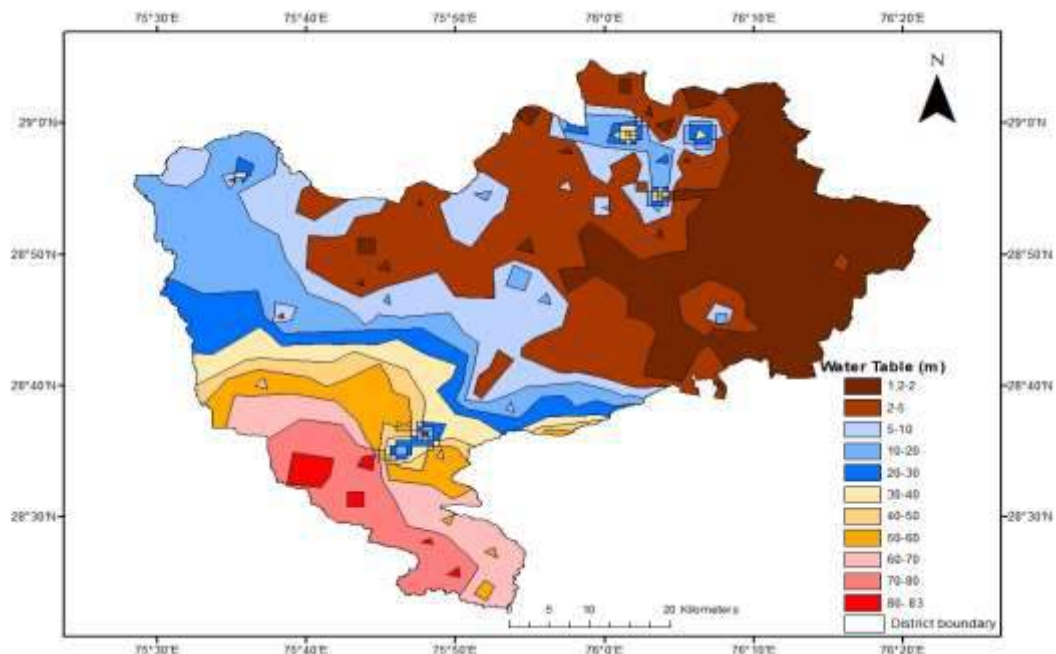
Figure 11: Average Groundwater Levels during Pre -Monsoon Season for the Period 1974-2021



Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Available data on groundwater depth is being generally taken twice in a year, *i.e.*, before and after monsoon season because groundwater depth is mostly affected by recharge of rain water and in the study area 85% of annual rainfall occurs during the monsoon season. Therefore, it is important to study the seasonal effect. Accordingly, annual maps were prepared before and after the monsoon season by using the available data at each observation well from the year 2001 to 2021, are not presented here. By averaging the pre- and post-monsoon data of groundwater depth at each well individually for the study period, the groundwater depth map was prepared to study the season fluctuation in Bhiwani district, are represented in Fig. 11 & Fig. 12.

Figure 12: Average Groundwater Levels during Post-Monsoon Season for the Period 1974-2021



Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

5.0 Discussion

5.1 Spatial and temporal variation of groundwater depth

The spatial and temporal variation maps of groundwater depth at an interval of ten years for the study period (1974-2021) was prepared as shown in Fig.3 to Fig. 8. On comparison of 1974, 1985, 1995, 2004, 2014 and 2021 maps, it was observed that groundwater level decline was not uniform. Although a decline was recorded in 71.4% part of study area, which mainly constituting Bhiwani districts, During the study period 1974-2021, among the 204 observation wells, the maximum value of groundwater depth varied from

47.73 m in year 1974 to 94 m in year 2021, whereas, its minimum value varied from 1.07 m in year 1974 to 0.74 m in year 2021 (Table 1 and 10). The average value of groundwater depth varied from 21.04 m in year 1974 to 28.03 m in year 2021 (Table 8).

5.2 Area change under different groundwater level

Aperusal of the results revealed that area under 2-10 m (prone to water logging) depth of groundwater has increased from 15% (1974) to 34.5% (2021), whereas, the area under groundwater level of 10-30 m (safe limit) has also reduced from 64% (1974) to 38% (2021) during the study period of 47 years. Also the area under more than 30m that was susceptible to over exploited has increased from 19% (1974) to 26% (2021) and the area under 0-2m groundwater level, exposed to water logged, increased from 0.01% to 0.3% during the study period.

5.3 Spatial variation of groundwater fluctuation under different layers

By add the value of area lying in different years (Tables 7) under different groundwater depths, *i.e.*, 0-2, 2-5, 5-10, 10-20, 20-30, 30-40, 40-50, 50-60, 60-70,70-80, 80-90, 90-100 and 100-110 m. was prepared to find out the area under different depth during the study period. A graph was plotted to observe the variation in area under different depths of the study area. During 2021, 1300 ha area was estimated in the range of 0-2m, which is very less (0.3%) as compared to total area of Bhiwani but this area is a matter of serious concern because it reflects the problem of water logging. During 2020, in 2-10m groundwater depth, 113600 ha area was estimated but inclining trend in its value was observed on comparing to area under this category of previous years.

Table 14: Area (000 ha) under Different Groundwater Depths (m) for the Period 1974 to 2021

Range	1974	1984	1995	2004	2014	2021
0-2 m	0	0	0.1	0.9	0.5	1.3
2-10 m	51.5	56.8	83.4	121	106.4	113.6
10-30 m	213.7	204.9	175.3	136.8	137.5	126.9
Above 30 m	64.5	67.8	71	71.1	85.4	87.9

Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

It is still very large area (34.4%) and it lies under the category of prone to water logging, needs attention of the planners. During 2021, in 10-30m groundwater depth, 126900 ha area was estimated and again declining trend in its value was observed on comparing to area under this category of previous years. This category lies in the safe limit and don't require any serious concern. During 2021, in above 30m groundwater depth area has been increased from 64500 ha to 87900 ha in year 2020. This is approximate 1.5 times the area under 2020 in comparison to 1974. Which reflect serious attention to check the further decline

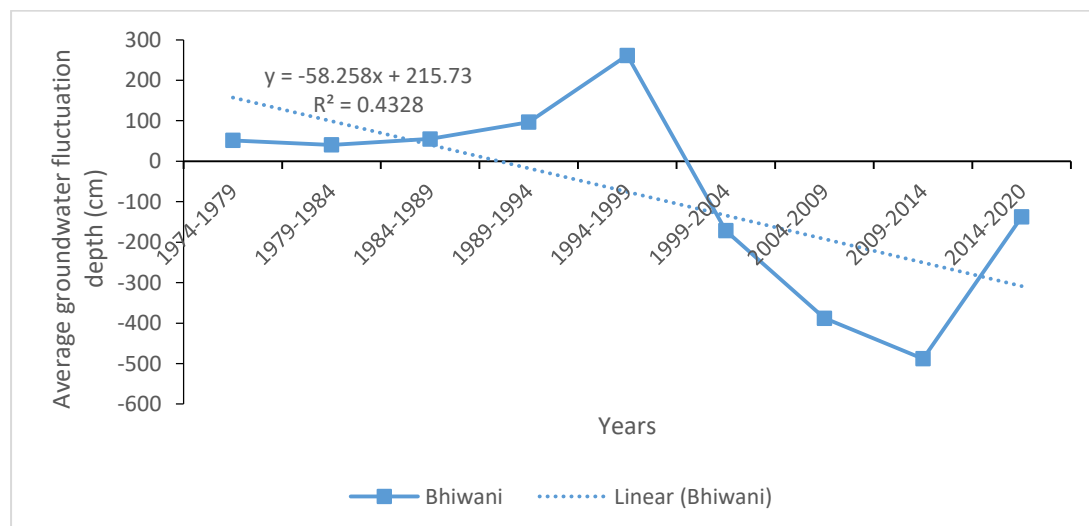
in groundwater depth. Above 70m groundwater depth, in year 1974 (Table 7), no area was existing in this category but in year 2020, it showed an area of 18000 ha (Table 7), this reflects the shifting of groundwater level from lower to higher depth, which is a matter of overexploitation of groundwater resources. This type of area is easily assessable through maps (Fig. 9) and appropriate measures can be taken place by the planners.

Figures from 9 are representing the spatial variation of groundwater under different fluctuation range for different duration, *i.e.*, 1974-1984, 1974-1994, 1974-2004, 1974-2014 and 1974-2021. From year 1974-2021, the average fluctuation was ranging from – 82 m (-ve means decline) and 22 m, which was calculated on the basis of 209 observation wells lying in the study area. In rising trend of groundwater level, maximum area (27 % , Table 13) was recorded in the range of 10 to 20 m, whereas on declining side, maximum area (4 %) was recorded in the range of – 30 to -20 m. To study the seasonal effect (pre and post monsoon) on groundwater depth, maps were prepared before and after the monsoon season by using the available data at each observation well from the 1974-2021.

5.4 Overall declining and rising trend of groundwater level

The average fluctuations in groundwater levels in each district at 10, 20, 30, 40 and 47 years intervals with reference to base year 1974 was computed. Average decline of 14.8 cm per year was observed during the study period of 1974 to 2021 in the study area (Fig. 10). The relationship between maximum, minimum, average groundwater depth and annual rainfall (mm) was presented in Figs. 15 and 16.

Figure 13: Average Five Year Interval Rise/Fall (cm) in Groundwater Levels in Different Block of Bhiwani District for the Study Period 1974-2021



Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

5.5 Major Factors Affected the Groundwater Level in Bhiwani district

5.5.1 Impact of natural and anthropogenic factors on groundwater Level

Understanding of spatial and temporal trends of groundwater depth is essential for sustainable development of natural water resources. Some anthropogenic and climatic variables (area under rice cultivation, number of tube wells and rainfall) were studied in relation to groundwater level.

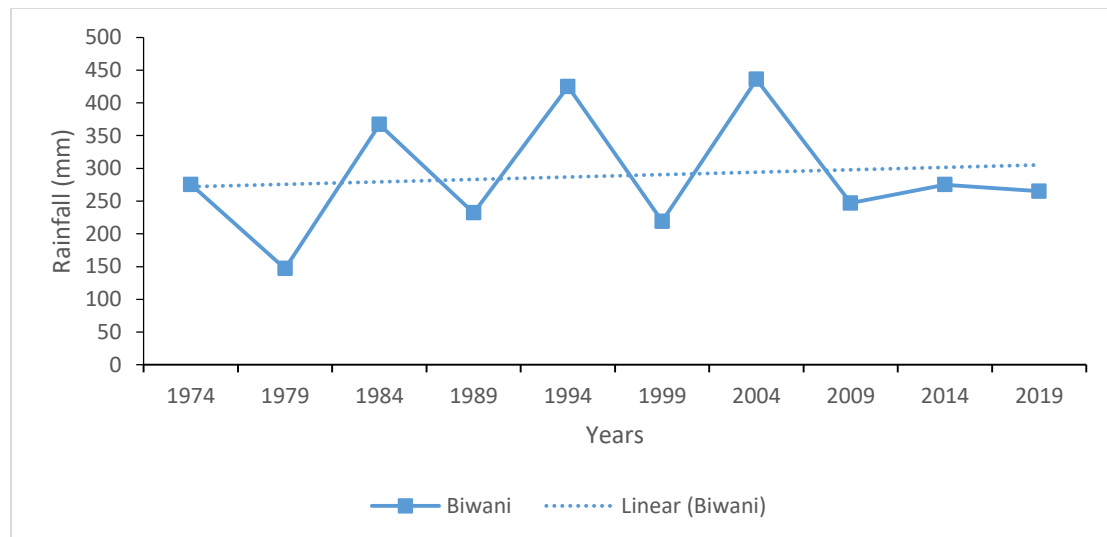
(a) Average Annual Rainfall (mm)

Annual rainfall (mm) and groundwater level (m) were plotted against the time (year) for the year 1974 to 2021, which indicates the positive response to incidence of rainfall (Fig. 14). Height of line are reflecting the rainfall depth and their decreasing height is reflecting the declining trend in rainfall during 2009-2014 and 2014-2020 and groundwater depth inversely increased during this period, thus, contributed adverse effect on the groundwater level besides other factors.

(b) Impact of number of tubewells on groundwater level

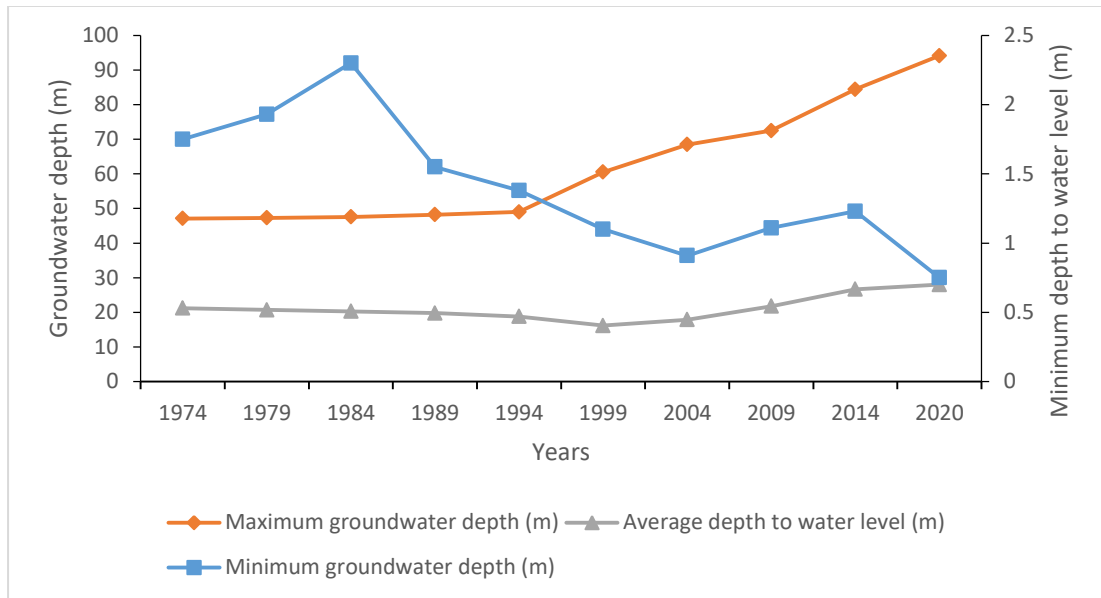
The most conspicuous falling groundwater level trends and patterns with greater negative fluctuations over the study period (1974–2021) are in Bhiwani district (Figs. 10 and 13). Groundwater levels have depends significantly in these regions by affecting most of the water-related activities (especially food production) leading to socioeconomic stress in the region and also number of tubewells has been increased during the same time period (Fig. 21), *i.e.*, from 0.007 million (1974) to 0.065 million (2021).

Figure 14: Annual Rainfall (mm) in Bhiwani Part of Haryana for the Study Period 1974-2021



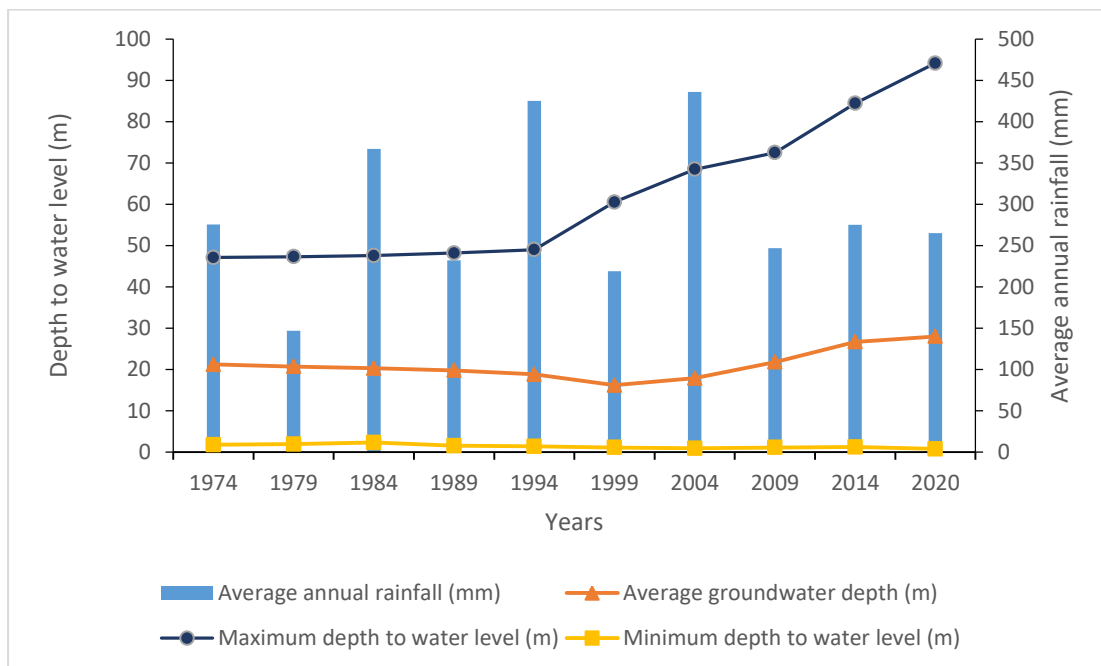
Source: Secondary data obtained from department of Metrological, Chandigarh, Chandigarh(India)

Figure 15: Relationship between Minimum, Maximum and Average Groundwater Level (m) of Bhiwani District from 1974 to 2021



Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

Figure 16: Relationship between Minimum, Maximum, Average Groundwater Level (m) and Average Annual Rainfall (cm) Bhiwani District from 1974 to 2021

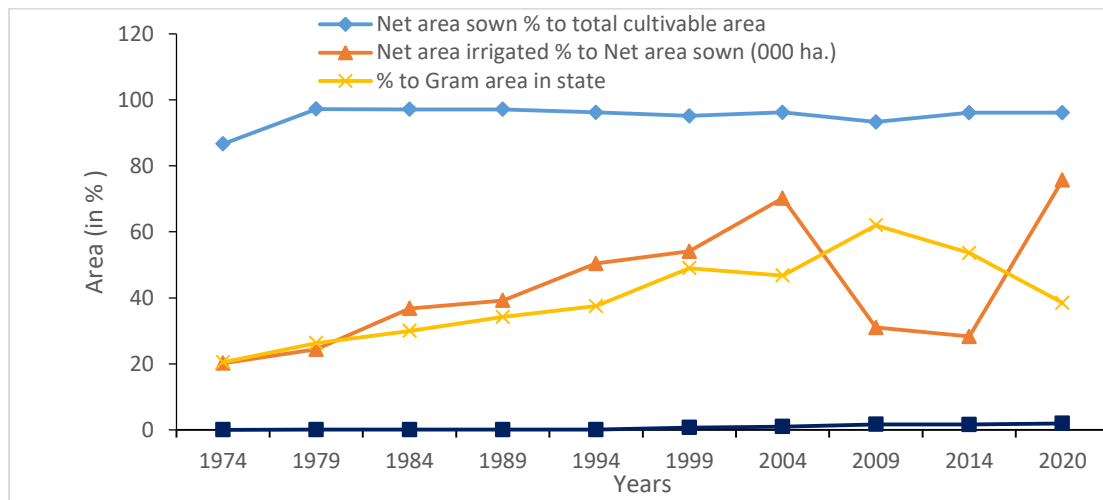


Source: Secondary data obtained from department of Metrological, Chandigarh, Chandigarh (India)

(c). Impact of cropping pattern on groundwater level

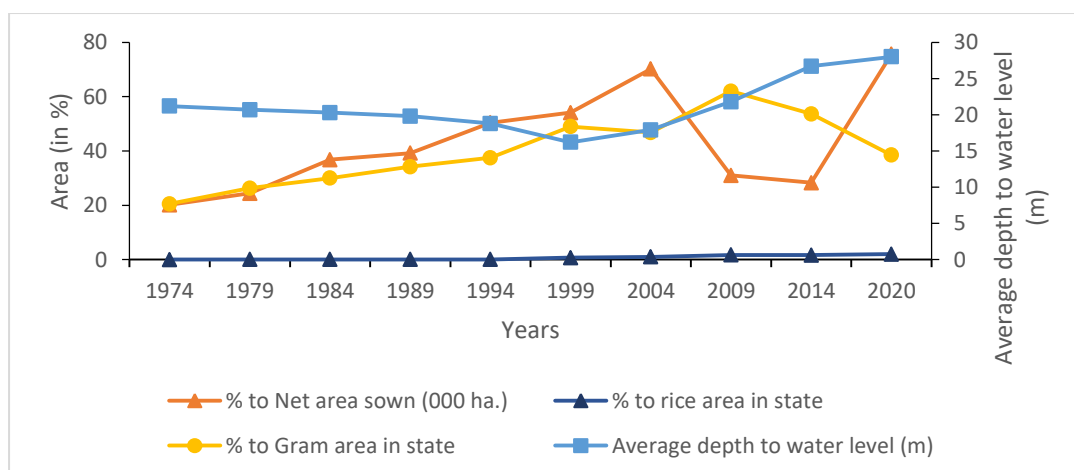
The general depletion of groundwater level in the study area may be due to increased cultivation of different crops (Figs. 17 to 19), especially more water consuming agricultural crop like paddy.

Figure 17: Relationship between Net area sown % to total cultivable area, Net area irrigated % to net area sown (000 ha) and average groundwater level (m) of Bhiwani district from 1974 to 2021



Source: Secondary data obtained from different organizations, department of agriculture, Panchkula, Haryana (India)

Figure 18: Relationship between % to Net area sown (000 ha), % to rice area in state, % to gram area in state and average groundwater level (m) of Bhiwani district from 1974 to 2021



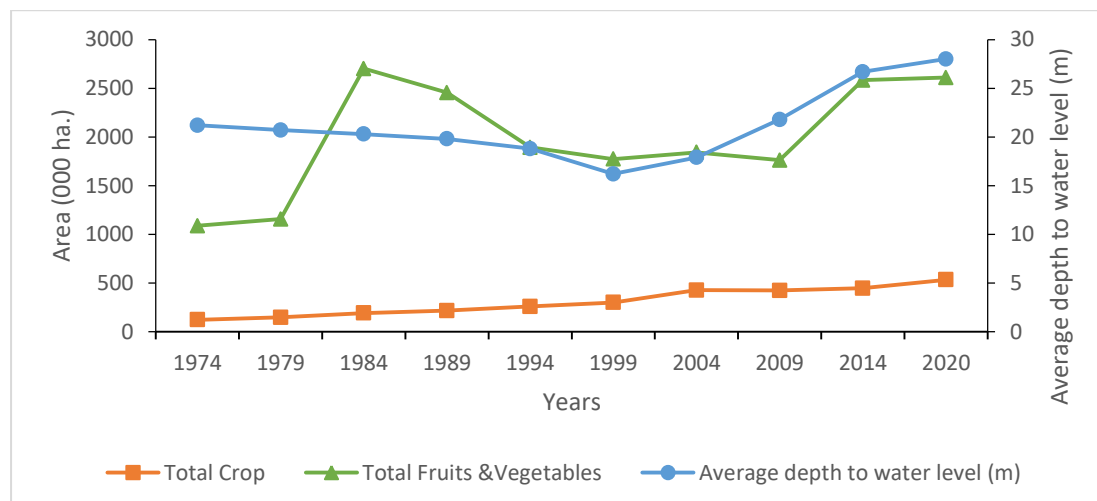
Source: Secondary data obtained from different organizations, department of agriculture, Panchkula, Haryana (India)

In Bhiwani district, area under rice cultivation has been increased from 0.004% (1974) to 0.07% (2021), *i.e.*, from 1 thousand hectare in 1974 to 30 thousand hectare in 2021. Besides this, cultivation of two paddy crops in the kharif season also being practiced during the last 10 year, which further aggravated the problem in certain areas. As the transplantation timing of saathi variety is from last week of April to 3rd week of May (before the onset of monsoon), more dependence on groundwater other than rainfall, resulted further decline in groundwater level.

(d). Impact of irrigated area, percent sown area and source of irrigation water on groundwater level

Irrigated area in Bhiwani district has been increased from 89000 ha in year 1974 to 302000 ha in year 2021, which reflects 239.3 % increase in the irrigated area (Fig. 18). As well as percent to net area sown is also increased from 20.2 to 71.3 percent in the study area (Fig. 19).

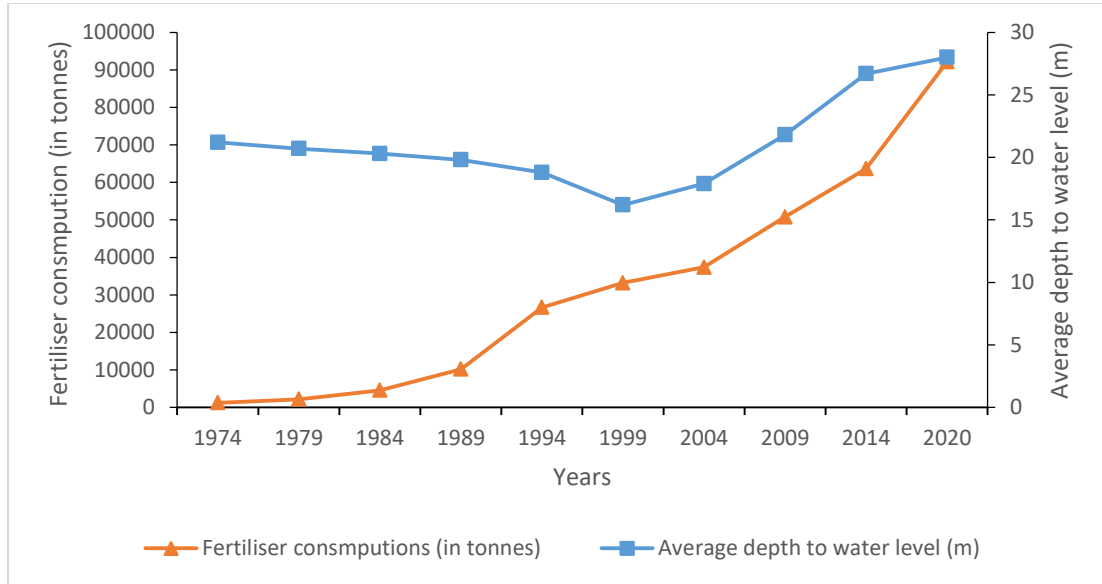
Figure 19: Relationship between Total crop area (000 ha), Total fruit and vegetables and average groundwater level (m) of Bhiwani district from 1974 to 2021



Source: Secondary data obtained from different organizations, department of agriculture, Panchkula, Haryana (India)

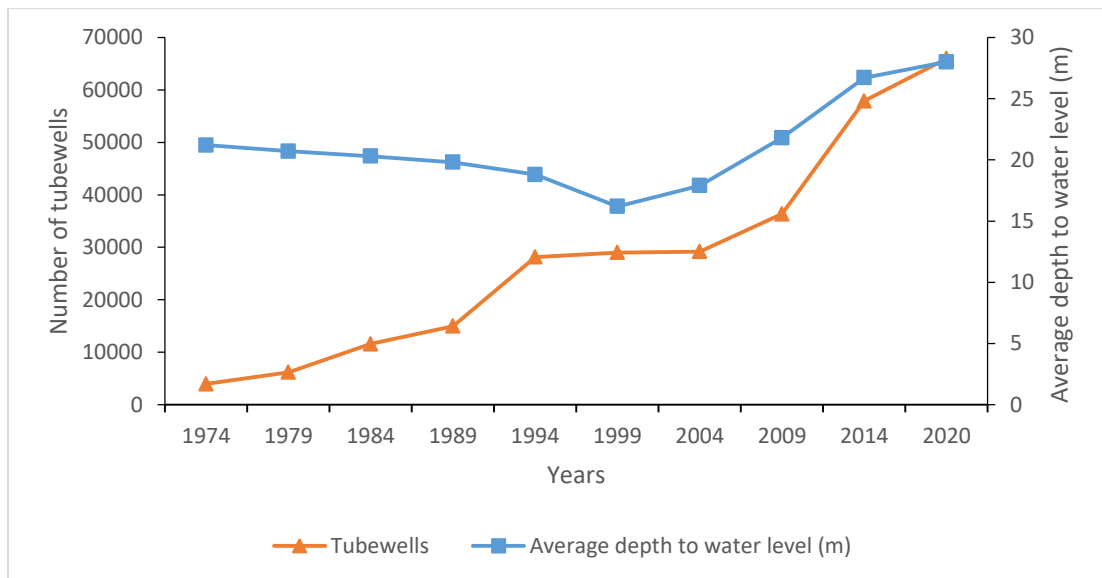
It is already cited that share of submersible pumps irrigated area to the total irrigated area has increased from 7.2 per cent in 1974 to 71.5 per cent in 2021. Tubewell irrigated area is also increased from 7000 ha in year 1974 to 216000 ha in year 2021. Canal irrigated area was 78000 ha in year 1974, which was increased to 169000 ha in year 2004 but it was further decreased 86000 ha in 2021, which is about same as in year 1974. This increase in irrigated area, percent sown area and tube well irrigated are directly affects the groundwater level, as shown in Fig. 17 to 20. The fertiliser consumption is also increased from 10000 tonne (1974) to 99000 tonne (2021) in Fig. 20.

Figure 20: Relationship between Total Fertiliser consumptions (in tonnes) and average groundwater level (m) of Bhiwani district from 1974 to 2021



Source: Secondary data obtained from different organizations, department of agriculture, Panchkula, Haryana (India)

Figure 21: Relationship between Number of tubewells and average groundwater level (m) of Bhiwani district from 1974 to 2021



Source: Secondary data obtained from different organizations, department of agriculture, Panchkula, Haryana (India)

6.0 Summary and Conclusion

India is primarily an agricultural commodity dominating country which primarily depends upon irrigation. The country has witnessed a tremendous increase in agricultural production and irrigated area since its inception in the year 1966. The surface water resources in the country are scarce and now a days approx. 50 per cent of the cultivated area is irrigated by natural groundwater resources. This phenomenal use of natural groundwater through large number of tubewells has caused severe decline in groundwater depth, resulting in depletion of natural groundwater resources. Therefore, an understanding about the groundwater trends, development and accessibility are essential for devising judicious management. In Bhiwani district, groundwater is used intensively and some blocks are over-developed or developed as per the norms of Central ground Water Board. In the light of these facts, the present study has been attempted to investigate the “Impact of Depleting Ground Water Resources on the Start-Up Ecosystem and Rural Entrepreneurship” with following objectives.

- To develop spatio-temporal maps for the groundwater level and its fluctuations in Bhiwani district
- To identify the causes of groundwater fluctuations and remedial measures

The investigation was conducted to study the trends of groundwater depth and different cause of groundwater fluctuations from 1974 to 2021. The study was carried out on the basis of secondary data (groundwater level and factors affecting it) procured from different departments of Haryana. Firstly, spatial fluctuations maps were drawn at the interval of ten i.e., 1974, 1984, 1994, 2004, 2014 and 2021. Furthermore, relationship between groundwater depth and factors affecting it was developed. The major observation and results obtained from the above study are summarized as follow.

- The average groundwater level in Bhiwani district ranged between 21.04 to 28.3 m from the during the study period 1974-2021.
- The average annual groundwater depth declining at the rate of approximately 14.8 cm/year during 1974-2021 in Bhiwani district.
- The minimum groundwater level depth during the study period varied from 1.75 to 0.74 m, whereas, its maximum value ranged between 47.1 to 94.1 m and its mean value varied from 21.04 to 28.03 m, respectively, during 1974-2021 in Bhiwani district.
- Area under 2-10 m (prone to water logging) depth of groundwater has reduced from 15.2% (1974) to 34.5% (2021), whereas, the area under groundwater level of 10 - 30 m (safe limit) has also reduced from 64.6% (1974) to 38.2% (2021) during the study period of 47 years
- Area under 0-2 m groundwater level, exposed to water logged, increased from 0.0% to 0.003%, whereas, area under more than 30 m of groundwater level has been increased by 7.6 %. During the study period Extremity of groundwater level on both sides (water logging and overexploitation) has been increased.
- Maximum, minimum and mean annual rainfall of 43.0 cm (2004), 14.7 cm (1979) and 28.7 cm, respectively was observed during the study period of 1974 to 2021.

- Number of tubewells has been increased from 0.007 million (1974) to 0.065 million (2021) in the study area.
- In Bhiwani district, percent area under rice cultivation has been increased from 0.004% (1974) to 0.07% (2021) and corresponding area has increased from 1 to 30 thousand ha.
- Irrigated area in Bhiwani district has been increased from 89000 ha in year 1974 to 302000 ha in year 2021, i.e., 239.3% increase in the irrigated area.
- Tubewell irrigated area is increased from 7000 ha in year 1974 to 216000 ha in year 2021. Canal irrigated area was 78000 ha in year 1974, which was increased to 169000 ha in year 1994 but it was further decreased 86000 ha in 2021, which is almost same as in year 1974.
- Present study found a significant increase and decrease in ground water depth in different villages over Bhiwani district of south-western part of Haryana.
- The decline of groundwater levels shows coherent variability with maximum temperature, urbanization and annual rainfall.
- The main causes of ground water level depletion over the Bhiwani district has been observed with decrease in rainfall, increase in paddy crop cultivation area and conversely decrease in ground water recharge.
- Present study highlight that Loharu block of study area is critically affected by severe depletion in ground water level and rate of ground water depletion has been accelerated during last decade due to a several reasons discussed in this paper.
- Water management is essential to mitigate the severe problems related to depleted ground water depth. This includes increasing groundwater use efficiency, apply modern irrigation policy, water regulation, recycling of wastewater, artificial recharge wells and rural awareness program.
- An integrated approach involving dairy/piggery farming, conjunctive use of other source of water and poor quality groundwater could also reduce pressure on fresh water use.

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Corporate Restructuring in India

Sreeja J. and G. Alex Rajesh***

ABSTRACT

Restructuring can be defined as an organization or employer makes crucial changes to its financial or operational function. Corporate restructuring is a mode of action taken with the aid of using company entity to improve its capital structure or its operations significantly. Mostly, company restructuring is occurring whilst a company entity is experiencing significant issues and is in monetary Risk. A company restructuring differs from mergers and acquisitions as there may be no sale of one enterprise to next enterprise and it's also differing from dispossession, and it consist of promoting of a part of an organisations During the beyond decade, corporate restructuring has extensively become a staple of enterprise and a common reality throughout India. The main important reasons for corporate restructurings are monetary distress and Company growth. According to Indian Ministry of corporate affairs described as "a tool of reviving sick units". So here we can able to analysis and identify why corporate restructuring is important in Companies.

Keywords: *Corporate restructuring; Monetary distress; Capital structure; Economic threats; Company growth.*

1.0 Introduction

Corporate restructuring is a systematic way of changing a corporation's structure, its operations, and management function. Restructuring can be neither elective nor non elective. Elective restructuring are started by the company them self and usually involve financial problem. Usually Non elective restructuring are ordering by courts under penury laws. Due to this "a tool for rescue/saving sick units"- which was described by Indian Ministry of cooperate Affairs.

As there is less sale of one business to next, a restructuring is always different from M&A. divestitures is also one of the difference, and the Major Role of this involves selling off each parts of an organization. When the company need to alter their capital structure, they are usually start off rethinking about the structure. To become competitive, organisations are making many alteration.

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Restructuring means it can be the chance or it may be the solution to the problem which is facing by each organization. Financial distress and Cooperate Growth are the important causes for company's rationalization. IMCA defines company restructuring as "a device for reviving/saving unwell units." If the company has become unprofitable, it may need to restructure in order to minimize losses until better management can make it profitable again.

1.1 Corporate restructuring characteristics consists of

- Balance Sheet of the company can polish up (Which means from the by disposing of the unprofitable division from its core business).
- Staff depletion (by cutting down or selling off the portion which is unprofitable).
- Cooperate Management functions can change.
- Brands/patent rights can be disposed due to underutilized assets.
- Technical support and payroll management can be outsourced by any efficient 3rd party.
- Some operations such as manufacturing or production can move to lower-cost locations.
- Marketing, sales, and distribution functions can be recognized.
- For reducing the overhead, labor contract can be renegotiate.
- Debts can be reschedule or refinance to minimize the interest payments.
- Company can conduct a public relations campaign for consumer awareness.

1.2 Qualities of corporate restructuring

- To work on the financial record of the organization (by casting of the unrewarding division from its core business).
- Staff reduction (due to closing down or unloading the unfruitful portion).
- It is helpful for corporate organization to change.
- Disposing of the underutilized assets, alike to brands/patent rights.
- Outsourcing its assignments, as an example, specific support and money the board to a more useful untouchable.
- Shifting of exercises, such as, moving of gathering assignments to less expensive area.
- Exhibiting, arrangements, and assignment can reorganize.
- For diminishing overhead, can re-negotiate labor arrangements.
- To restricting the interest portions, the commitment can be reschedule or reevaluate.
- Can conduct a promoting activities wherever to reposition the organization with its buyers.

2.0 Review of Literature

According to Peter .F. Drucker, (International Conference on Technology and Business Management, March 26-28,2012) the guidance guru, the prominent change in corporate culture and the techniques which is using for conducting the business, is the tactical

intercession and relationship based not on possession, but on collaboration. He additionally determine that there isn't only a surge in alliances however a national and international restructuring of organization with inside the form of association and cooperation.

According to a modern survey with the aid of using the worldwide consulting major, Booz, Allen and Hamilton, organization restructuring by the mean of strategic alliance is spreading in each business areas or enterprises and is turning in to an important operator of better growth. The Enterprise restructuring in phrases of variety of strategic alliances in the national and international level. An example is, there are more than 20,000 new association have been formed in the U.S during the year between 1987 and 1992, in comparison with 5100 among 1980 and 1987 and 750 all through the 1970s. The enterprise additionally predicts that in the subsequent 5 years, the cost of alliances is projected to wide area between dollar 30 trillion to dollae50 trillion. The survey additionally famous that greater than 20% of the income generated from the pinnacle 2,000 United States and European organisations now comes from proposals, with a great deal greater expected within side the near to imminent future.

According to a study by the Harvard business school 2011 an organization restructuring has authorize thousands of employer around the world to react more quickly and effectively to latest opportunities and unpredictable pressures thereby re-establishing their competitive benefit

According to the 2008 boston consulting group bcg new global challengers report top companies from rapidly developing economies such as India china russia mexico and brazil are changing the world and challenging the dominance of establishing multinational players across the world in 2006 they completed 72 outbound acquisitions up from 21 in 2000 the average size of these transactions grew from 156 million in 2001 to 981 million in 2006 of the 100 companies on bcgs list 41 are from china 20 from India and 13 from brazil with the rest coming from other rapidly developing economies

Puri (2008) proposed that company reorganization in India has been delay and costly. Due to loss of favorable regulatory environment, a complicated tax framework, courtroom docket approaches and an infinite list of compliance problems disrupt the methods and impair most powerful realignment of asset, people etc.. Through restructuring.

Dr. Partap Singh M&A in India: Mergers and Acquisitions: Some problems & Trends the amount of deals extremely picked up within the year 1999 with total of 1453 deals as compared to solely 172 deals in 1998. The years 2000, 2007 and 2008 have seen as diminished with in the deals by twenty two, two and twenty four percentage accordingly because of the reason of worldwide credit score disasters. M&A has a lowering trend from the year 2000 to 2008. The traits in Indian M&A, which recorded a fast growth among 2003 and 2007 registering a compounded annual extension rate of 95% at \$70 billion. Though it dipped following the national and international disaster of 2008 simplest to get better quickly to hit a clean top of \$50 billion via way of means of 2010.

Kale & Singh (2004) of their articles on M&A among 1982 and 2002 concluded that in the starting years of financial liberalization, Indian organisations failed to create enough fees from acquisition, as compared to Multi-National Companies.

2.1 Objectives of the study

- To Study and pick out Corporate or company Restructuring in India
- To understand the major aspects to be considered in corporate restructuring strategies.
- To Study the Various problems associated with the method of Corporate Restructuring.
- To give remedial measures for come out from the issues of Corporate Restructuring in India.

2.2 Why we need corporate restructuring

Company reorganization is re-organizing a company's operation to improve its potency and profitableness. Restructuring can be a techniques of adjusting the industries structure in order to achieve the organizational strategic goal. It's about dramatic changes in a cooperation.

The strategy chosen depend on the purpose or organization long term goal. And therefore a variety of strategy can put in to action on different firms. The main objective of Corporate Restructuring are as, different goals at different times for different firms and the one common aim in any restructuring effort is to terminate the demerits and to combine the merits.

The on top of the statement is correct in each aspect. The various requirement for carrying out an enterprise are as follows:

- Attention in core competency, operational teamwork, expense or price reduction and effective allotment of administrative potentiality.
- Balanced usage of accessible basic forms and resources.
- Economies of scale through growth and to take advantages of Indian and foreign markets.
- Renewal and Revival and reformation of a unwell unit through altering losses of the unwell unit with income or gain of a wholesome firm.
- Receiving steady delivery of raw products and get entry to scientific study and technological growth.
- Company transformation with the aid of using suitable blend of mortgage and fairness price range to lessen the price of servicing and enhance go back on capital employed.
- Upgrade company's overall performance to obtain benefits and income by acquiring the absolute changes brought out by technology of information.

2.3 Important features to be examine in corporate restructuring strategies

- Lawful and jurisdictional Problems
- Accounting and financial point of view
- Individual and societal participation

- Evaluation and funding
- Tariff and Stamp attentiveness point of view
- Rivalry point of view

2.4 The several types of business restructurings are as follows

External elements that makes contribution to insolvency include bad market conditions, loss of liquid asset, the opposite reaction by creditors or customers with related to products bought with the aid of using the company, adjustments in running expenses, loss in the cost of belongings held with the aid of using the corporation, and downfall in standard monetary condition.

The following are few responses to companies which are experiencing monetary distress, according to India's Ministry of Corporate Affairs:

Mergers: This is the concept where 2 or greater business materials are consolidated either via immersion or admixture or by forming another association. The connection of 2 or further business rudiments is by and large done by the merchandising of protection between the securing and the objective association.

Demergers: Under this company reconstructing techniques, one or another business are joined right in to a single enterprise to get the benefit of combined energy rising out of this kind of combination.

Reverse Merger: In this Mode, the unrecorded public association have the good time to change over into a recorded public association, without fixing on Initial Public deal. In this course of action, the privately-owned commercial enterprises acquire a most shareholding in the public companies with its very own name.

Divestment: Right when a commercial elements sells out or trades an asset or assistant, it is known as "divesture".

Amalgamation or Incorporation: In this System, the purchasing firms assumes usually legal responsibility for the goal enterprise. It is in any other case referred to as the Acquisition.

Venture: Under this Method, a material is formed by one or more enterprise to accept monetary verification together. The part created is thoughts as the Joint Venture. Both the gatherings consent to make a contribution in percentage as consented to shape additional element and moreover share the costs, incomes, and manipulate of the enterprise.

Strategic Union: In this Method, one or more elements go into a concurrence to combine with one every other, to achieve some certain distance whereas heretofore going regarding as autonomous enterprise.

2.5 Problems in Implementing Corporate Restructuring Program In India Are:

In spite of vast restructuring enjoy to be had with Indian businesses, implementation of restructuring software remains sluggish and frequently notably will increase price and attempt than initially anticipated.

- Managing consensus in the promoter organization and occasionally among promoters and control is bulky job. Conflicting stakeholders' angle is absolutely one such aspect and green mechanism for equitable balancing of pastimes needed.
- Arriving at consensus amongst and with the institutional traders and creditors is time ingesting procedure that slows down the restructuring software.
- Inadequate prematurely making plans and assessment mainly referring to tax, and regulatory legal guidelines and different implementation troubles were referred to as forces retarding the velocity of restructuring attempt. Inadequacy of financial ruin and foreclosures legal guidelines and the shortage of facilitating surroundings for debt restructuring are adversely affecting restructuring exercises. Stamp obligation regulations, capital profits of unabsorbed depreciation and commercial enterprise losses notably growth transaction costs, introduce uncertainty and impose restrictive covenants at the businesses engaged in restructuring software.
- Another primary problem referring to any restructuring software is promoters' situation to preserve their manage over organization businesses whilst mobilizing the sources required for growth. An avoidable direction that promoters have occasionally taken withinside the beyond is to leverage indexed organization businesses to finance their holdings. Separation of promoter wealth from the wealth of public owned businesses is vital for suitable company governance and shareholders' price enhancement.

3.0 Suggestions

The above dialogue leads us to signify that conflicting stakeholders' attitude actually constitutes one such aspect and green mechanism for equitable balancing of uncertainty additionally want to be addressed. There is likewise want to create permitting surroundings for commercial enterprise restructuring.

The following measures are cautioned for enhancing implementation of restructuring program

- Accelerate legislative adjustments that permit extra flexibility in downsizing, transferring location, effecting closure and consolidation of operations;
- Implement tax reforms to make restructuring much less pricey and to permit marketers to leverage personal sources in a tax powerful manner.
- Accelerate law that allows creditors to make recoveries without prolonged courtroom docket procedures (Bankruptcy and foreclosures laws);
- Improve company governance to foster fairness in balancing stakeholder interests.
- A supportive criminal, regulatory, and accounting surroundings is to be created for a hit company restructuring. Important criminal components of restructuring encompass foreclosures standards, overseas funding regulations and mergers and acquisition policies.

- Restructuring making plans ought to encompass accomplishing right due diligence, powerful communicate at some point of the mixing, devoted and able leadership; pace with the mixing plan is included helps the achievement of Corporate Restructuring.

4.0 Conclusion

Corporate Restructuring has turn out to be very famous through the years in particular over the last most of the years thanks to fast modifications which have taken vicinity with inside the commercial enterprise environment. Restructuring can recognition on simple strengths, operational synergy & different powerful allocation of managerial abilities and infrastructure too. It can allows for Consolidation and economies of scale via way of means of enlargement and diversion to take advantage of prolonged home and international markets. Its Revival and rehabilitation of an ill unit via way of means of adjusting losses of the ill unit with earnings of a healthful company. Capital restructuring via way of means of an appropriate aggregate of mortgage and fairness finances to lower the price of servicing and enhance go back on capital employed. It also can enhance company overall performance to convey it on par with competition via way of means of espousing the new variation introduced out via way of means of statistics automation.

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Entrepreneurial Development of Rural Women in Hisar Imparted with Trainings on Making Wooden Beads Handicrafts

Ekta Melkani, Ekta Kapri** and Kiran Singh****

ABSTRACT

This study is concerned with the continuous efforts with rural women in Hisar, Haryana India. The trainings in the village Mangali were being imparted to build women's capacity in generating entrepreneurship ventures for themselves. The women were trained for the making of bead products adding value to the wood beads by using them to make earrings, necklaces, bracelets, anklets, dream-catchers, chandeliers, curtains, etc. Women excitedly learn about the techniques of product making and were ready to work in Self Help Groups for further productions. The training has come up to be a big achievement for the women and girls of the village to start an enterprise using local resources at home and directly sell to the market and to customers through online stores. The study details the productive knowledge gain results, shortcomings and futuristic approaches to bring the veil hidden faces of the rural women of Haryana into the light of success as empowered, confident and fearless women.

Keywords: *Entrepreneurial development; Women empowerment; Wooden beads; Handicrafts; Knowledge gain.*

1.0 Introduction

The bead art in India goes around back to Indus valley civilization and is believed to be 5000 years old. Silver, gold, clay, ivory and wood made beads were mostly used during that age. India is one of the largest bead producers in the world and exports a huge quantity of indigenous beads made in different states of India throughout the world. Beadwork is the art or craft of making things with beads. Beads can be woven together using particular threads, strung onto thread or soft, flexible wire, or adhered to a surface. With latest innovative tools in the leading industries, the artisans never fail to create refreshed beadworks using illimitable colours and whimsical designs.

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In India, a total of 13.31 per cent (MSME, 2018) women are involved in small scale enterprises. The micro sector with 630.52 lakh estimated enterprises accounts for more than 99% of total estimated number of MSMEs having a rural share of 51 % among all, of which 24% are female employees.

Bead making from wood, one of the small scale enterprises, is commonly practiced in North-Western part of Haryana where bead making from wood is the main source of livelihood for more than 70 per cent of the households in Mangali village. Beads made in Mangali are generally made from quality and lustrous woods such as, *tulsi* (holy basil), *kayim* (kaim), *beri* (jujube/ Chinese date), *sheesham* (rosewood), *eseriya* (asceria), *haldi* (turmeric), *chandan* (sandalwood), etc. Most of the family members are involved traditionally in various activities of bead making starting from collection of wood, processing and finishing and even their management in bundles and marketing; however, women's involvement in string (*mala*) making is exceedingly higher. The unorganized workplace at bead making enterprise reflects the drudgery of women in terms of health hazards and poor productivity (Gandhi *et al*, 2017).

The bead making work is done for longer durations by women. They sit continuously stringing for several hours, in home environment making hard working efforts but still not getting a deserving pay. They string about 4-8 kg of beads in a day and return back to manufacturers to sell out to outer places. Many of the processing activities are not even taken into account. Sometimes they even work for nights to complete the order given by manufacturers. The conditions of the working environment are their own risk associated with various kinds of occupational hazards they go through on a routine basis.

Recently, bead making enterprise is leaving its charm because workers' efforts and labour don't pay back much to them. As they have been making only the string (*mala*) having 108 beads which is sold at minimal rates, hence, there is a need for making other innovative bead products which would benefit the women and utilize their untapped potential to get more benefits. Lack of knowledge and skill are the major reasons that need to be eliminated through training interventions.

1.1 Objectives of the study

Keeping the above facts of beads, women workers and their workplace in mind, the present study has been planned with the following objectives:

- To provide interventions to improve the work and workplace of women making bead products.
- To study the impact of feasible interventions on change in women knowledge.

2.0 Research Methodology

2.1 Research design

Training-cum-Workshops were conducted using lecture and demonstration method among 30 interested women respondents randomly selected from *Surtiya Panchayat* of Mangali village according to their comfort zone. A module was prepared for the schedule of

training imparted at intermittent intervals to women for making wood bead products during a period of 8 months.

2.2 Data collection

A well-structured interview schedule was developed to assess the knowledge gain among 30 respondents trained to make bead products and the acceptability score was calculated.

2.3 Data analysis

Paired t-test (two sample mean test) is a type of hypothesis test that allows you to compare means. They are called t-tests because each t-test boils the sample data down to one number, the t-value; and gives test of significance between two samples. This test was used to measure significance knowledge gain among respondents before and after the training of bead products.

3.0 Analysis and Discussion

3.1 Training for value addition to traditional bead activities

An active group of women respondents from *Surtiya Panchayat* of Mangali village was interested in learning techniques to make advanced products from beads. None of the women knew that beads they have been stringing for years could be formed into something else. They started to learn the value of those unused beads, they earlier used as timber for their *chulhas*. The information regarding the training had been given to women while doing section I assessment survey. After a proper rapport building in the village and combining the women of interest, raw material was given to women along with tool set required to perform activities. All the raw materials and other requirements had been self-financed by the researcher.

Visits were made to village with proper planning on alternate days. Products of interest to women were discussed on day to day basis. With proper techniques and finishing training of women had been started. Women collected beads of various woods, sizes, styles and colors. Thirty women had to be trained which was not possible in a single group; hence women from different areas had been trained on different days according to their free time and interest. The raw materials and all other requirements had been put to a certain place in the village. The process of value addition to the beads had been conducted in the following manner:

3.2 Estimating the true value of beads

Before starting to make the products it was necessary to know what is the basis of these beads we were using and their real cost in the market. After collecting different bead strings and raw products made by village women and understanding their qualities, we initially tried to sell them to the customers. By selling the bead strings directly their value,

requirement and even customers' knowledge about beads came to light. These wooden beads already had a place in the minds of customers in various forms. Over to that, marketing strategies were learned and awareness about the planned bead products was announced.

3.3 Identifying possibilities of products that could be produced

As these wood bead products were an altogether new idea, it was necessary to check the existing products in the market or the bead products made worldwide. It was astonishing to know that the same bead strings which are sold at the rate of Rs. 7 per string, has been bought from Mangali village and were sold at multiple times higher prices, especially in spiritual places like Haridwar, Buddhist temples, etc. All this worked as an inspirational factor to teach the women make bead products, earning money and excluding the middlemen from in-between.

Figure 1: Exposure to Existing Bead Value in Market



Source: Based on authors' primary data

The following categories of products had been decided to make and sell by the end of year. Each category involved different kind of raw materials hence, were to use at one time making the products. The raw materials and tools were brought for 30 women from Delhi market after market survey, accordingly to the planned products to be made. The categories of bead products were as follows:

3.3.1 Jewelry products from beads

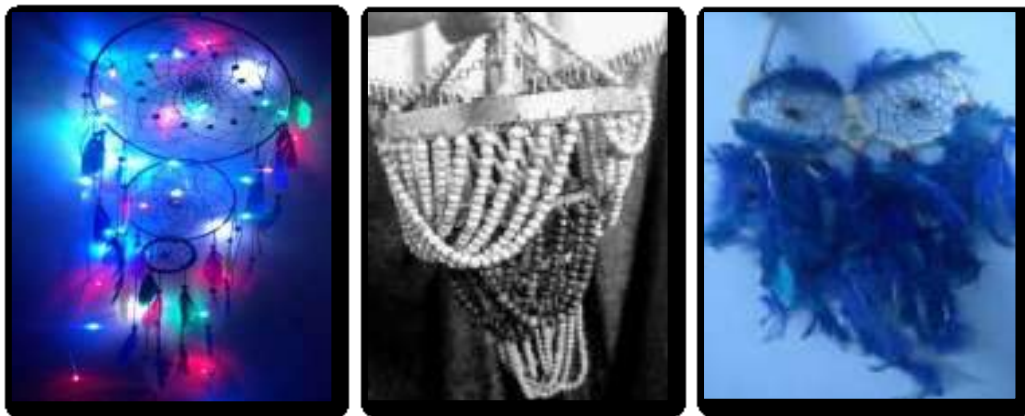
Jewelry itself includes a wide variety of products that could be made and from different raw materials. Earrings, bracelets, necklaces, anklets, wedding sets, etc. were the basic jewelries included. These products generally use metallic raw materials like alloy wires. Three types of pliers (normal, nose and cutting plier) are used to draw the wire and make beautiful jewelry products inserting beads to them. Earrings are mostly considered and appreciated by women hence were made the focus point of the training. The soft kind of jewelries also included tassel products that required silk threads; however they are also used with alloy materials only using beads as the properties.

Figure 2: Jewellery Products Training

Source: Based on authors' primary data

3.3.2 Decorative and utility bead crafts for interiors

This part of training involves the use of soft materials used in crafts. There are immense possibilities for craft materials and making them using beads was a creative idea altogether. The products included dream catchers, craft bottles, wall hangings, lamp shades, curtains, chandeliers, and etc. all made using beads. The idea was breathtaking and the raw materials regarding was collected.

Figure 3: Decorative Bead Crafts

Source: Based on authors' primary data

3.3.3 Leather articles

The *boho* trend is most fascinating nowadays. Leather is a natural product and so are wood beads. Their combinations together make articles that are different from the league as well as go along all kind of moods and combinations. Some examples of leather articles are key chains, bracelets, anklets and other fashion articles.

Figure 4: Leather articles



Source: Based on authors' primary data

3.3.4 Waste material products of wood beads

Various products from the waste materials were made using wood beads. It even included the use of wasted wood after extraction of beads to make colorful plant vases.

Figure 5: Waste Material Utilization



Source: Based on authors' primary data

3.4 Managing training days

The above mentioned product ideas were strategically planned for village women to learn. After teaching particular kind of products, they were given time to practice and make products till achieving finishing and then made more products. After one month of making similar products, we used to switch to next kind of products to break the monotony and bore. The excitement of using same age old beads to form unexpected products was their source of motivation. Women paid interest in learning new things and started applying their own creativities to products that were really amazing, original and even considered for future designs. The orders had already started coming by customers on personal basis at this early stage of production, trainees were allowed to sell the products if customers were interested.

3.5 Training of tool handling and finishing of products

Not only in the case of jewelries, but other products also required proper methods to be made. The carelessness and forced completion of work could add to degraded and imperfect look of the products. Women were taught to make thing with proper measurements and complete each process with proper attention. The main points made most considerable for women were caring for the need of consumers, fineness of work, making product look appealing, using fresh and quality raw material to products and proper use of tools and movement of hands

3.6 Packaging of products made

It was observed with time that well packaged products were appealing to the eyes of customers in comparison to the open products made. Packing also added value to the selling prices of the similar products along with their protection from moisture and dust as most of the products was metallic. Proper packaging techniques were introduced with cellophane sheets to the women. The value of brand name was also explained to them which still has got to be registered with selected of women forming a self-help group.

Figure 6: Training to Handle Tools for Production



Source: Based on authors' primary data

3.7 Marketing of products

The main objective of this training was to give women a sustainable source of income. To make women see the value of their products and recover the cost of raw materials, different platforms were chosen to sell the products. University events and stalls were the best of them, for doing promotion of products as well as for easy access to sales. The occasional stalls like *Raksha bandhan* fair, *Diwali mela* in home science, *Kisan mela* of CCSHAU, National seminar on women's day, etc. were selected for selling products. Women played active role in completing products before time as well as selling products to customers.

3.8 Distribution of profits

If trainee women respondents had to earn something so they could make more products with much efficiency. Based on the earnings, 5 regular women who worked to make

additional products for sales and helped in selling products were given Rs. 2000 per head along with other expenses. 20 women were provided with sets of 3 tools used in molding wires for products. Raw material was provided to women to make and sell products on their own. Women were satisfied with the work and benefits and are seeing forward to increase the production and sales.

Figure 7: Marketing of Bead Products around Hisar



Source: Based on authors' primary data

4.0 Assessment of knowledge gain after training of respondents

Thirty respondents were given training in section II about wood bead products. They had been taught and made to work starting from handling of tools, mentioned products formation, finishing, packaging and even marketing. To measure the effectiveness of this training and workshops these women were put to knowledge, skill and symbolic adoption tests through designed checklists.

4.1 Gain in knowledge after training by respondents

The statements for knowledge analysis were categorized into five domains including concept of training, different products made, working and construction of products, marketing of products and advantages they felt after learning the techniques.

4.1.1 Concept of training provided

The major change was observed in the practice of making bead products making (rank I) that increased during the training period as all the respondents at least once tried making products themselves. Their knowledge about the importance of correct postures while working was increased (rank II) followed by a minimal increase in their attitude that bead products' value addition could help them earn better money (Table 1).

4.1.2 Bead products learned to make

Table 4.12 reveals that the biggest change occurred for the respondents were the use of waste woods after extraction of beads from it (rank I). This was followed by interior

decorative crafts like dream catchers (rank III), which they found easy but time taking followed by leather crafts (rank IV) which were least adopted (Table 1).

4.1.3 Construction and working of products

Cent percent knowledge gain (rank I) in the use of round nose pliers, simple pliers and flexibility required in products for alterations had occurred along with knowledge gain about comfort by workstation. This was followed by knowledge gain in process of making dream catchers (rank II), use of cutter pliers (rank III), twisting of hand while making jewelry (rank IV) and combinations of colors along with adjusting climatic conditions for better efficiency (rank V each). More than half of the respondents gained knowledge about use of newspapers for jewelry making (rank VI) followed by importance of universal design of products (rank VII) and proper packaging and finishing of products (rank VIII)(Table 1).

4.1.4 Marketing

The major change observed in knowledge about marketing in respondents was the awareness about brand value of the products (rank I) which was observed in more than half of trainees. It was followed by the importance of selling products personally to know the drawbacks (rank II), loyalty to customers (rank III), fulfilling their expectations about products (rank IV), their feedback to improve the quality of products (rank V) and knowing their needs to design products (rank VI). Similarly all the respondents already knew about profitable pricing, promotions required, attractive packaging and marketing of products in local area showing no change in percentage gain of knowledge (rank VIII) (Table 1).

4.1.5 Advantages

Cent percent respondents felt the advantage that beautiful products could be made without using extra raw material and less number of beads could earn handsome income (rank I) followed by use of regular beads and less consumption of human energy (rank II). Other advantages felt were recognition in the society (rank III), alleviation of middlemen (rank IV), extra income through same contractor for product enhancement (rank V), extra income for simple products (rank VI) and working and earning from home itself (rank VII). Cent percent women already knew that sample products could provide them future orders and their traditional village work was getting promotion (rank VIII, Table 1).

Table 1: Gain in Knowledge Regarding Bead Products Training-cum-Workshops (n=30)

S. No.	Knowledge Parameters	Frequency			Rank
		Pre-test	Post-test	Gain (%)	
1.	Concept				
a	Bead product made before	17 (56.61)	30 (100.00)	43.39	I
b	Earning through value addition	19 (63.27)	26 (86.58)	23.31	III
c	Health and productivity through better posture	21 (69.93)	30 (100.00)	30.07	II

2.	Bead Products made				
a	Jewelry	4 (7.33)	30 (100.00)	92.67	II
b	Interior design crafts	-	23 (76.59)	76.59	III
c	Leather crafts	-	21 (69.93)	69.93	IV
d	Creative waste bead wood utilization	-	30 (100.00)	100.00	I
3.	Construction and Working				
a	Use of round nose pliers	-	30 (100.00)	100.00	I
b	Use of simple grab pliers	-	30 (100.00)	100.00	I
c	Cutter pliers are used to cut wires in-between	5 (16.65)	30 (100.00)	83.35	III
d	Process of making Dream Catchers	-	26 (86.58)	86.58	II
e	Twisting of wire	-	21 (69.93)	69.93	IV
f	Waste products use in jewelries	-	17 (56.61)	56.61	VI
g	Colour scheme	11 (36.63)	27 (89.91)	63.27	V
h	Universal design of products	19 (63.27)	30 (100.00)	36.73	VII
i	Flexibility in products	-	30 (100.00)	100.00	I
j	Value of packaging and finishing	20 (66.66)	30 (100.00)	33.34	VIII
k	Ergonomic workstation use	-	30 (100.00)	100.00	I
l	Lighting and temperature	8 (26.64)	27 (89.91)	63.27	V
4.	Marketing				
a	Trending product and need of the customers	27 (89.91)	30 (100.00)	10.09	VI
b	Customer's expectations	24 (79.92)	30 (100.00)	20.08	IV
c	Brand of the product for value	9 (29.97)	25 (83.25)	53.28	I
d	Initial pricing technique	30 (100.00)	30 (100.00)	0.00	VII
e	Promotion of products	30 (100.00)	30 (100.00)	0.00	VII
f	Selling techniques	18 (59.94)	30 (100.00)	40.06	II
g	Attractive packaging of products	30 (100.00)	30 (100.00)	0.00	VII
h	Loyalty to customers	19 (63.27)	30 (100.00)	36.73	III
i	Feedback of customers	25 (83.25)	30 (100.00)	16.75	V
j	Selling in local markets	30 (100.00)	30 (100.00)	0.00	VII
5.	Advantages				
a	Recognition among the people	9 (29.97)	27 (89.91)	59.94	III
b	Earnings made from home itself	20 (66.66)	30 (100.00)	33.34	VII
c	Products orders after sample	30 (100.00)	30 (100.00)	0.00	VIII
d	Beads use and no extra raw material	-	30 (100.00)	100.00	I
e	Simple products with extra income	8 (26.64)	23 (76.59)	49.95	VI
f	Less quantity of beads use	-	30 (100.00)	100.00	I
g	Alleviated role of middlemen	-	17 (56.61)	56.61	IV
h	Extra income through contractors	6 (19.98)	22 (73.26)	53.28	V
i	Beads use without any extra colors	10 (33.33)	30 (100.00)	66.66	II
j	Promotion of village	30 (100.00)	30 (100.00)	0.00	VIII
k	Not much human energy needed	-	20 (66.66)	66.66	II

Source: Based on authors' primary data

4.2 “t” test for significance of change in knowledge after pre-testing and post-testing knowledge

Table 2 reveals that p values for all the parameters of knowledge are smaller than 0.01, hence it is concluded that gain in knowledge is highly significant. There is highly significant difference between the pre and post exposure knowledge level of respondents among concept of intervention (29.445), knowledge of bead products (19.053), knowledge about construction and working of bead products (45.978), knowledge about marketing of the bead products (8.907) and advantages of the work and workplace intervention (9.817).

Table 2: t Test for Significance of Gain in Knowledge after Training-cum-Workshops (n=30)

S. No.	Knowledge	Mean Score		Change (+)	“t” value
		Pre-test	Post-test		
1	Concept	1.30	2.80	1.50	29.445**
2	Bead products	1.15	2.70	1.55	19.053**
3	Construction	1.20	2.90	1.70	45.978**
4	Marketing	1.50	2.90	1.40	8.907**
5	Advantages	1.30	2.90	1.30	9.817**

** Significant at 0.01 level

Source: Based on authors' primary data

5.0 Conclusion

Highly significant gain in knowledge was observed in the practice of making bead products, correct postures and use of waste woods after extraction of beads, jewelry making, decorative crafts, leather crafts etc. along with basic techniques of construction, tool handling and proper packaging and finishing of products, feedbacks, loyalty to customers and advantages.

Previously received training, handling of tools and materials, teaching other women, outlining market products, imitating market products, pricing or accounting and packaging were the best hard skills possessed by respondents.

The training for a couple of months and marketing for a month showed remarkable success which if implemented in an organized manner can increase the income of the women considerably. Overall the value addition of beads was a successful start for the future enterprise of Mangali village.

6.0 Recommendations

Training done to improve bead workers' skill and efficiency for making value-added products can be used for further income generation opportunities in future. This can create a

source of sustainable income generation building social entrepreneurship for whole village. Provision of Government marts, fairs, etc. shall be provided so that the irony of the middlemen can be removed and also this will act as strong motivation force for other women to come forward. The elimination of hazards at workplace is necessary to focus upon by providing women the protective equipment's and aiding tools. Mere knowledge of correct postures and correct techniques of doing work can reduce a lot of the discomforts.

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Consolidation and Acquisition of Nationalized Banks and their Effects on Profitability and Shareholder Value: A Holistic Purview

Jeyaprabha V. M.*

ABSTRACT

Maidavolu Narasimham, the RBI's 13th Governor, proposed banking reforms in a committee report more than two decades ago, and his proposal may finally see the light of day. He proposed merging public-sector banks in 1991 in order to strengthen them. In India, bank consolidation has taken two forms. One of the most visible has been the voluntary merger of banks, which has been driven by a desire for synergy, growth, and operational efficiency. This study conducts Paired T-test on Pre-M&A and Post M&A to measure the impact of the profitability and shareholder values of Major Public sector banks during the last three financial years where most of the Mergers and Acquisition happened. To that end, it examined whether acquired banks post-consolidation in India improved their positions in terms of Profitability and Shareholder value compared to Pre-M&A. And the study also looked for distinctions between the performance of the banks post-consolidation. However, the Results show a dichotomy between Pre-Merger and post-merger of the nationalized banks. For this purpose, Fourteen Financial parameters are used in order to determine the change in profitability and shareholder value more precisely and accurately.

Keywords: Merger; Consolidation; Profitability; Shareholder values; Operational synergies.

1.0 Introduction

The recommendations of the Verma committee were considered very critical since they suggested some harsh measures for revitalizing the public sector banks. The committee recommended that it could be better to have five-strong banks than 20 weak banks. These recommendations were taken up by the government as early as FY 2008-09 when the first consolidation took place between the state bank of India and its subsidiaries or associate banks. However, the major leap took place in FY 2018-19 when a flurry of mergers was ushered in to streamline and strengthen the functioning of some commercial banks. It was when the major consolidation takes place between 4 public sector banks i.e., the merger of Bank of Baroda with Dena Bank and Vijaya Bank. Following this same route in the next financial year FY2019-20, four major consolidations of 10 public sector banks took place.

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They are namely Punjab National bank with Oriental bank of commerce and United bank of India, Canara bank with Syndicate bank, Indian Bank with Allahabad Bank, and Union Bank of India with Andhra Bank and Corporation Bank (Table 1). So, in this context, it would be relevant to evaluate the performance of banks post-merger to understand the effect of such consolidation on profitability and shareholder value. Consolidation is primarily proposed to increase productivity, efficiency, and economic growth after a six-year slump, as well as to reduce the number of bad loans and non-performing assets (NPAs). The country currently has twelve public sector banks. By doing so, the government reduces the number of public sector banks and the expenses associated with capital infusion, i.e., cost-cutting; next, it improves the asset quality of the banks; and finally, the government's capital infusion to meet the capital adequacy ratio limits and Basel norms will be significantly reduced, as government capital infusion is primarily used to maintain these norms.

Table 1: Recent Mergers in Public Sector Banks

S.no.	Acquirer BANK	Target Banks	Type of Consolidation	Merger / Acquisition Date	Quarters post Consolidation
1.	Bank of Baroda	Vijaya bank	Merger	01/04/2019	June19, Sep 19, Dec19, March20, June20, Sep 20, Dec20, March21
		Dena Bank			
2.	Punjab National Bank	Oriental Bank of Commerce	Merger	01/04/2020	June20, Sep20, Dec20, March21
		United bank of India			
3.	Canara Bank	Syndicate Bank	Merger	01/04/2020	June20, Sep20, Dec20, March21
4.	Indian Bank	Allahabad Bank	Merger	01/04/2020	June20, Sep20, Dec20, March21
5.	Union Bank of India	Andhra Bank	Merger	01/04/2020	June20, Sep20, Dec20, March21
		Corporation Bank			

P value: Significant at 5% level

Sources: Based on author's calculation

1.1 The objective of the study

The objective of the study is to evaluate the effects of mergers and acquisitions on the financial performance of the selected Indian banks. A post-merger study is carried out on selected parameters to assess the impact of mergers and acquisitions of banks in terms of profitability and shareholder value. In order to achieve this, the following objectives of the study are carried out as follows:

- To evaluate the performance of banks post-consolidation by conducting a comparative analysis of performance prior to and after the consolidation, in order to assess the banks' strength and future prospects.
- To determine whether acquirers outperform non-acquirers.

2.0 Literature Survey

Several research has been conducted to investigate the impact of M & As on various areas of the banking industry. Moreover, numerous investigations have revealed the diverse motivations for such a calculated move.

Rhoades (1993), mergers and acquisitions have an impact on efficiency and profitability in banking. For the study, a total of 33 local and international bank-to-bank mergers were examined. Domestic mergers, according to the study, lead to greater cost efficiency, though they have minimal impact on profitability. In spite of this, the study concludes that cross-border relations do not promote efficiency, but rather a profitability. Vennet, (1996), Mergers are a popular strategy to develop operational synergies, but their success is contingent on the potential for economies of size and breadth. If these economies occur, a bank's scale expansion would be accompanied by a cost increase that is not proportional to its size. Pilloff (1996), consolidated banks can generate more value than two individual pre-merger banks. Ravenscraft & Scherer (1987); Avkiran (1999). A merger, according to classic merger theory, is the transfer of scarce corporate resources from one organization to another that can function more efficiently and put those resources to better use. Onikoyi *et al.*, (2014); Zahid & Shah (2014); Anand & Singh (2008); Campa & Hernaldo (2006); Scholtens & Wit (2004); Resti & Siciliano (2000), A variety of empirical research have been conducted to investigate the impact of M&A on banks in the pre-and post-event era. This debate on the benefits of banks in M&A transactions is still unresolved. According to several studies, mergers and acquisitions in the banking sector are helpful. Bhatnagar (2001) study investigated a hefty toll on public sector banks afflicted by NPA-tainted balance sheets and saddled with the flab of prior bureaucratic initiatives. Well-managed, popular, and inventive sector banks are giving the PSBs a run for their money in an increasingly competitive business. The author proposes a solution in the form of a merger and streamlined operations. Sufian (2004) evaluated the impact of mergers in the banking industry in the Malaysian economy. The efficiency effects of the merger were taken into account during the post-merger period. The analysis revealed that overall efficiency improved in all institutions subject to merger, with the exception of a few large banks that experienced large-scale inefficiencies. (Kumar, 2009), The stock market's reaction to mergers and acquisitions announcements in developed countries has been documented, however, there is a paucity of information about the influence of mergers and acquisitions in developing countries' banking industries. (Badreldin & Kalhoefer, 2009), Several studies have been carried out in Egypt to analyze the performance of merging banks after banking reforms were successful in consolidating the sector. Findings revealed that Bank mergers helped in raising profitability and increased credit risk position by a small amount. After a series of mergers between commercial banks in Pakistan, Kouser & Saba (2011) sought to determine the impact of the transactions on profitability. Researchers discovered that all amalgamated banks' operating financial performance has worsened over time, as evidenced by the findings of the study. Adegboyega & Dele (2014), in the post-merger scenario, shareholder wealth decreases due to

higher non-performing assets of merged banks, resulting in profit erosion and little or no payout to shareholders. Pessanha *et al.*, (2016), the announcement of an M&A transaction during the banking period generates an increase in stock volatility. As a result, shareholders anticipated an increase in risk. Stock volatility receives a lot of attention.

3.0 Research Methodology

3.1.1 Data

This study is based on secondary data and is being used for research purposes. To assess the influence of mergers and acquisitions on the performance of banks chosen as a sample, financial and accounting data was collected from the bank's published Quarterly reports for the period starting from the quarter of June 2018 to the current quarter of June 2021. And data was also gathered from the websites of the Bombay Stock Exchange, National Stock Exchange, and CRISIL database.

3.2 Paired T-test

The parametric t-test was used to analyze numerous critical parameters for the comparison of the pre-merger and post-merger periods of acquirer banks during the time period taken. This study looked at six major public sector banks prior to merger or acquisition and the same banks after consolidation with other target banks to measure the impact on profitability and shareholder value of the banks post-consolidation. The difference in their operational means of the major indicators is then calculated for each period, and this difference is used to determine the banks' real performance post-merger.

3.3. Analysis and interpretation

From the First quarter of FY 2018-19 to the First quarter of FY 2021-22, five major public sector banks that have undergone significant mergers were identified for this study. The Fund based income (Schedule 13), Fee-based income (Schedule 14), Interest Expenses, Operating Expenses, Net Profit, Provisioning, Earnings per share, Net Interest Margin, Market price per share, Price Book value ratio (PBV), and Market capitalization are all important aspects to consider when choosing financial parameters to measure the impact of Bank consolidation on profitability and shareholder value. The GNPA, NNPA, and Capital Adequacy Ratio (CAR) have all been highlighted in the correct context to provide this study with the needed depth and focus.

3.3.1 Fund based income

According to Table 2, the level of significance for the mean difference of Fund-based income for the corresponding study period taken (Post M&As over Pre-M&As) has increased in the case of all banks. And for all of the banks, the t-value is significant at the 0.05 level. The interest income of all five surviving public sector banks has increased significantly since the merger, and it appears that this trend will continue for some time. Profitability has had a

beneficial influence from the merger activity of BOB, PNB, Indian Banks, Canara Bank, and Union Bank.

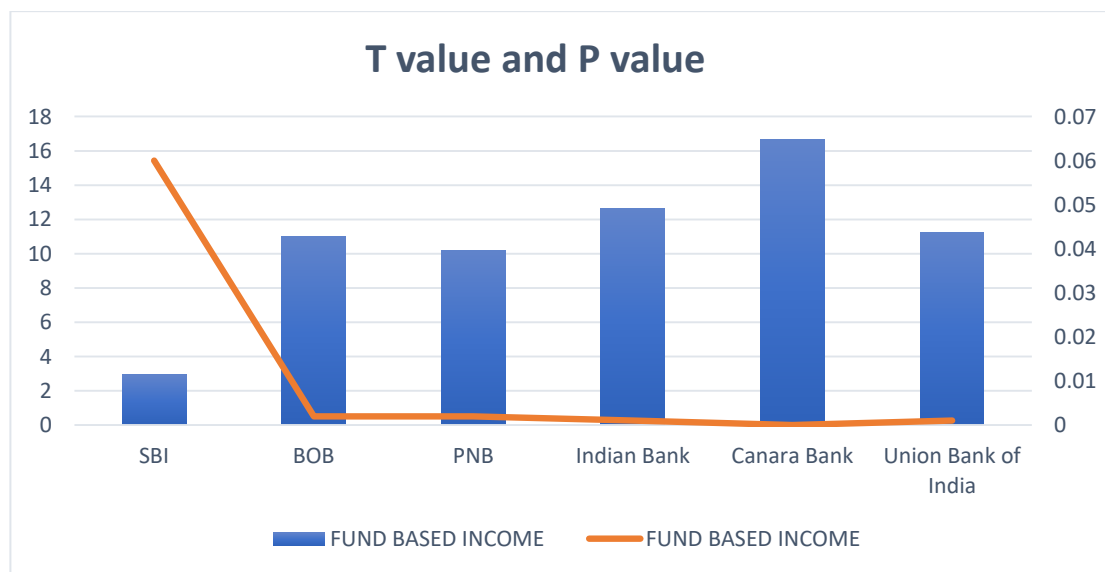
Table 1: Fund Based Income

FEE BASED INCOME						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
BOB	1971.763	469.965	3047.833	497.815	8.552	0.03
PNB	2346.918	214.736	3302.315	629.142	2.882	0.063
Indian Bank	831.375	151.976	1635.115	178.603	6.974	0.006
Canara Bank	2949.850	156.387	5861.788	1457.107	4.308	0.023
Union Bank of India	1447.318	453.560	3474.770	1422.754	2.715	0.035

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 1: Fund Based Income



Sources: Based on author's calculation

3.3.2 Fee-based income

From the observation of Table 3, it reveals that the level of significance for the mean difference of Fee-Based Income for the corresponding study period taken (Post M&As over Pre-M&As) in the case of all banks increased but, on average, in the case of only PNB (t-value =2.882, $p > 0.05$), the t value of 2.882 is insignificant as PNB piled up with bad debts in the previous financial years, it has no effect on post-consolidation. And Except for PNB, the t-value is significant at the 0.05 level for the other banks.

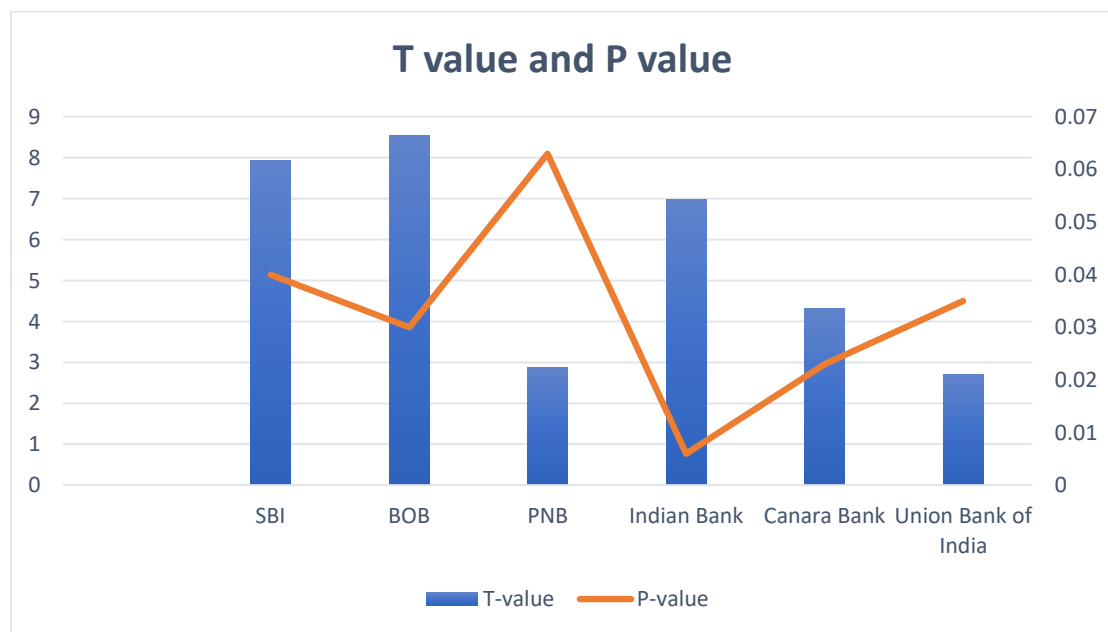
Table 3: Fee Based Income

FUND BASED INCOME						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
BOB	13226.563	879.042	19723.675	439.545	11.007	0.002
PNB	13729.618	379.567	20445.390	977.828	10.182	0.002
Indian Bank	5350.323	163.239	9777.018	586.815	12.650	0.001
Canara Bank	12439.688	127.351	17553.150	729.416	16.653	0.000
Union Bank of India	9369.805	304.940	17327.865	1261.208	11.267	0.001

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 2: Fee Based income



Sources: Based on author's calculation

3.3.3 Interest expenses

From the observation of Table 4, it reveals that the level of significance for the mean difference of Interest Expenses for the corresponding study period taken (Post M&As over Pre-M&As) in the case of all banks increased and the t-values are significant at the 0.05 level. Interest expenses have climbed dramatically for all five public sector banks following the merger, and it appears that this trend will continue for some time, given it includes the merger cost synergies of various banks.

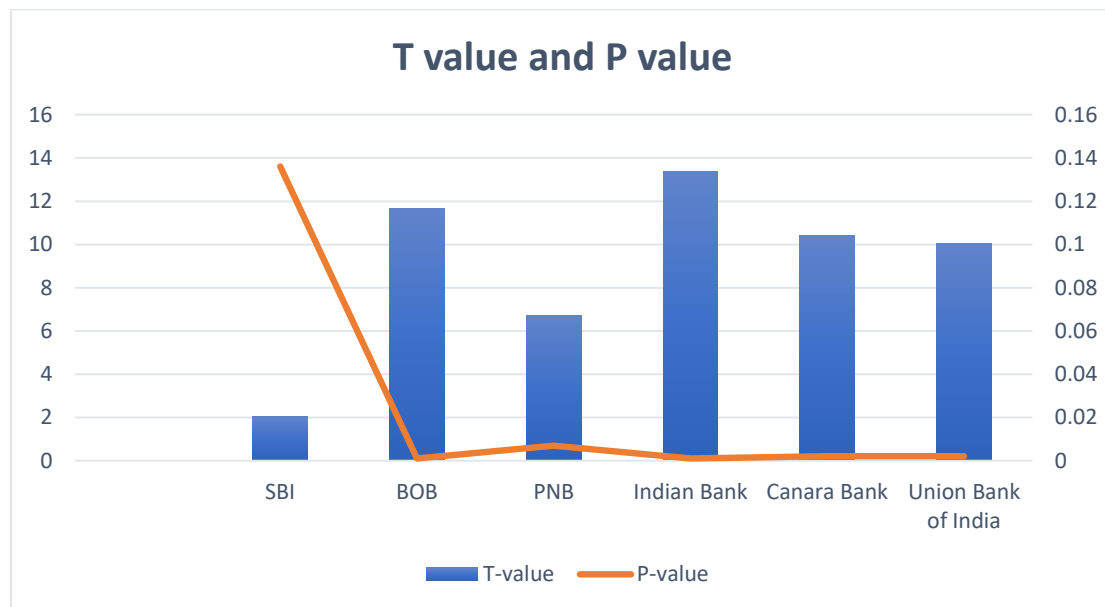
Table 4: Interest Expenses

INTEREST EXPENSES						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
BOB	8126.430	516.852	12509.973	235.549	11.663	0.001
PNB	9249.368	137.614	12701.145	895.752	6.718	0.007
Indian Bank	3449.378	70.868	5859.700	293.174	13.358	0.001
Canara Bank	8954.298	264.366	11295.625	510.097	10.424	0.002
Union Bank of India	6459.203	56.667	11028.100	894.173	10.034	0.002

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 3: Interest Expenses



Sources: Based on author's calculation

3.3.4 Operating expenses

According to Table 5, the level of significance for the mean difference of Operating Expenses for the corresponding study period taken (Post M&As over Pre-M&As) increased in the case of all banks as the merger costs predominantly included Branch layoffs, technological improvements, supply chain advancements, and an increase in interest rates. The t-values for all six banks are significant at the 0.05 level. Following the merger, operating expenses for all five public sector banks increased considerably, and it appears that this trend

will continue for some time now that Covid 19 Pandemic has joined the group. Furthermore, the bank's cost efficiency has been harmed by the merger activity of BOB, PNB, Indian Banks, Canara Bank, and Union Bank.

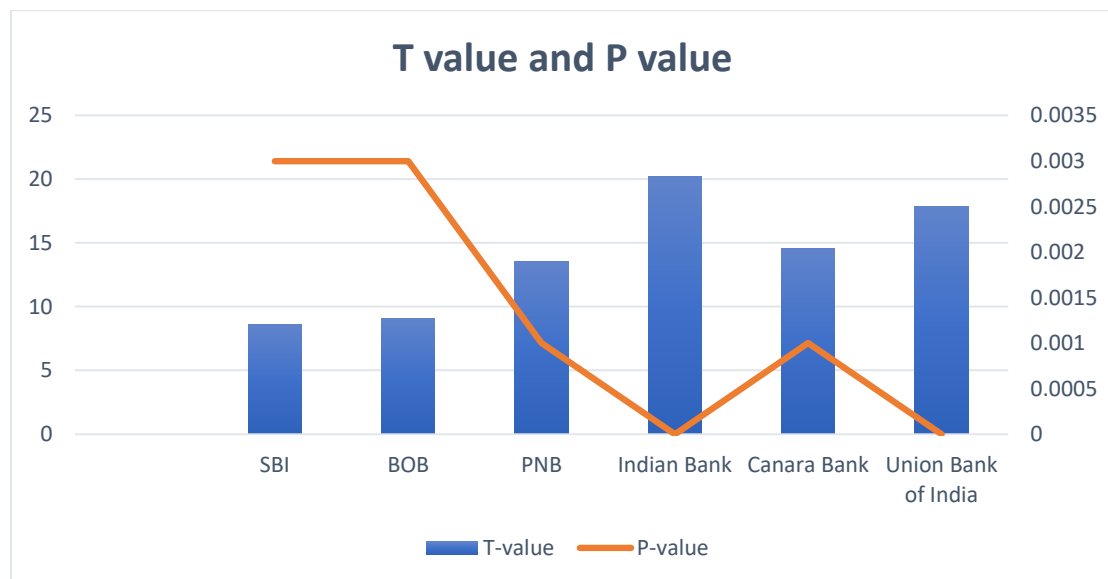
Table 5: Operating Expenses

OPERATING EXPENSES						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
BOB	3192.243	358.672	5144.070	296.026	9.092	0.003
PNB	3037.628	228.856	5128.943	139.117	13.516	0.001
Indian Bank	1108.175	29.237	2697.320	142.887	20.242	0.000
Canara Bank	4016.740	436.869	7071.225	672.025	14.535	0.001
Union Bank of India	2046.968	259.835	4937.880	563.127	17.898	0.000

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 4: Operating Expenses



Sources: Based on author's calculation

3.3.5 Provisions

According to Table 6, the level of significance for the mean difference in Provisions for the corresponding study period taken (Post M&As over Pre-M&As) decreased in the case of all banks. And the t-values for all six banks are insignificant at the 0.05 level. Hence the provisions have very little impact on profitability.

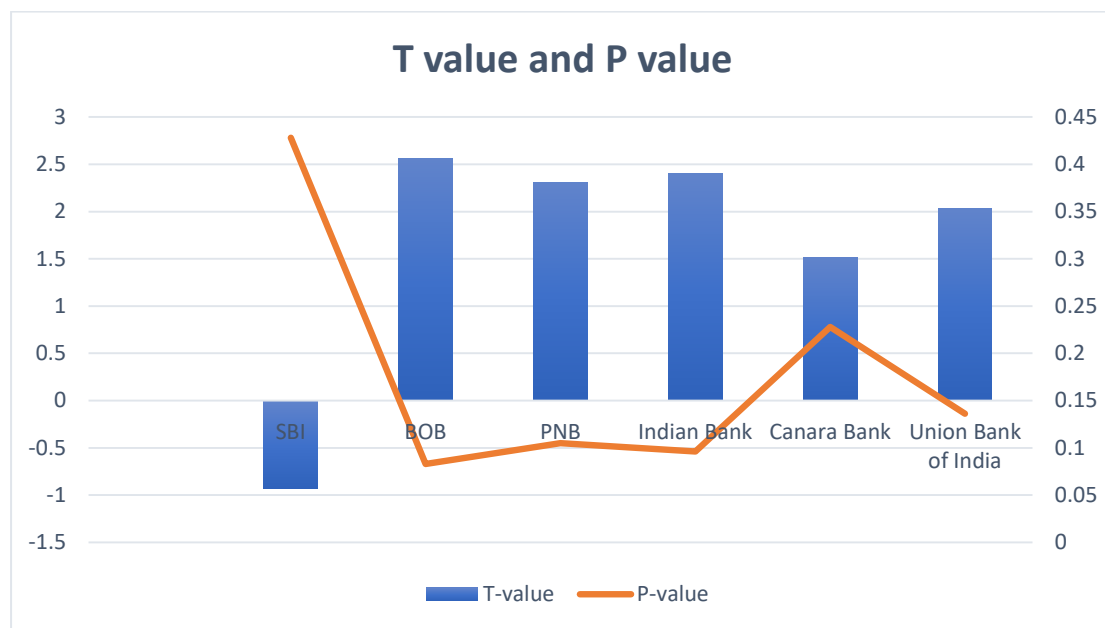
Table 6: Provisions

PROVISIONS						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
BOB	3498.508	1579.199	5425.943	1969.474	2.566	0.083
PNB	3582.785	1267.468	4971.510	346.340	2.304	0.105
Indian Bank	1279.565	517.445	2123.783	255.922	2.399	0.096
Canara Bank	2796.878	1713.530	4077.700	209.670	1.512	0.228
Union Bank of India	2721.263	1198.716	4254.860	730.987	2.028	0.136

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 5: Provisions



Sources: Based on author's calculation

3.3.6 Net profit

The level of significance for the mean difference in Net Profit for the corresponding study period taken (Post M&As over Pre-M&As) increased in the case of all banks, according to Table 7. Though the t-values for all five banks are insignificant at the 0.05 level, it becomes trivial in nature, when compared to the mean differences in net profit of all five commercial banks over the study's overall average period. As a result, net profit has a significant impact on profitability.

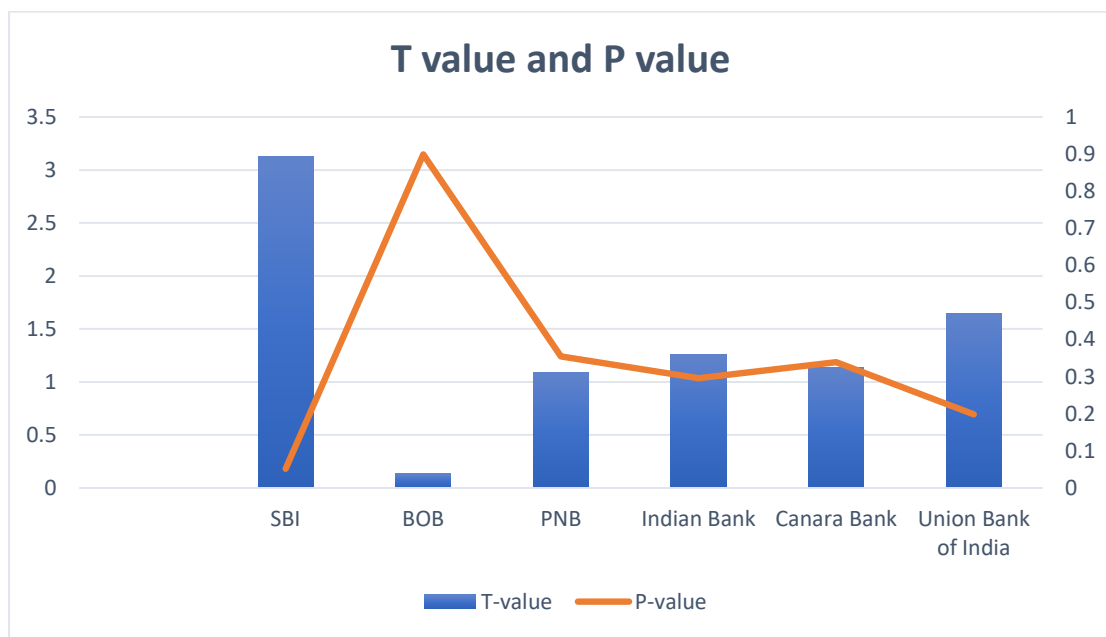
Table 7: Net Profit

NET PROFIT						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
BOB	138.817	697.092	235.545	984.323	0.138	0.899
PNB	90.835	780.118	538.100	46.002	1.092	0.355
Indian Bank	189.520	274.997	753.928	620.715	1.262	0.296
Canara Bank	498.898	1807.615	675.898	293.918	1.134	0.339
Union Bank of India	760.208	1457.193	707.005	400.823	1.649	0.198

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 6: Net Profit



Sources: Based on author's calculation

3.3.7 Earnings per share (EPS)

From the observation of Table 8. Despite the fact that Bank of Baroda merged with Vijaya Bank and Dena Bank, it is still regarded as the government of India's first major bank consolidation, and many were skeptical of the positive outcomes of this major consolidation. Furthermore, the t-values for the other banks are insignificant at the 0.05 level. Thus, the fact that the t value is insignificant for all banks does not imply that it has less influence on profitability when viewed as a whole.

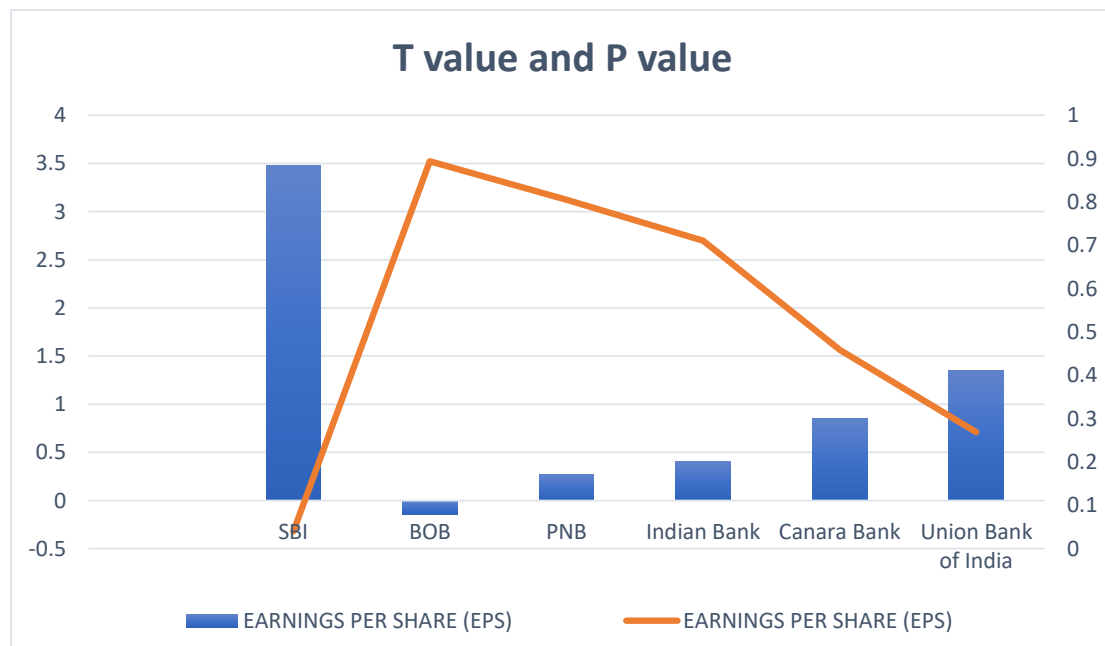
Table 8: Earnings per Share

EARNINGS PER SHARE (EPS)						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
BOB	0.860	2.656	0.595	2.627	-0.145	0.894
PNB	0.425	1.649	0.658	0.091	0.270	0.805
Indian Bank	4.595	6.160	6.973	5.552	0.408	0.711
Canara Bank	- 3.775	18.260	4.693	1.902	0.847	0.459
Union Bank of India	-2.753	5.342	1.115	0.625	1.352	0.269

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 7: Earnings per Share



Sources: Based on author's calculation

3.3.8 Net interest margin

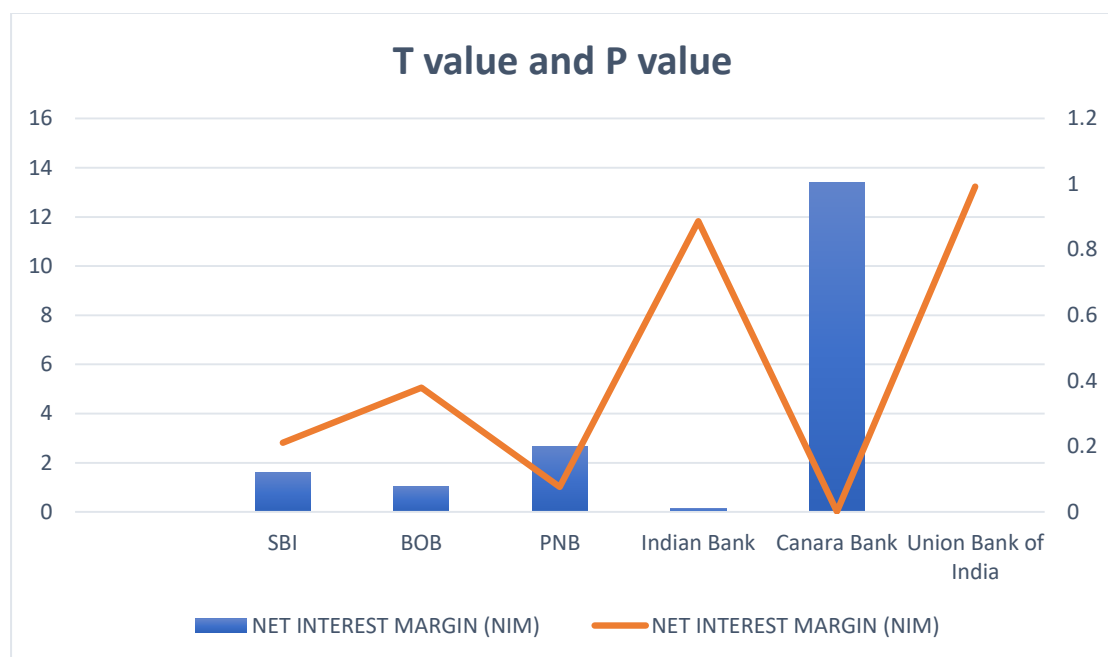
From the observation of Table 9, NIM increased marginally, and the t value is insignificant for all the banks except for Canara Banak (t-value =13.408, $p < 0.05$), the high t value of 13.408 is significant as Canara bank's advances grew by 3.68 percentage post-merger and it also raised capital through selling shares and tier (AT-1) bonds. Thus, NIM despite COVID19 influence, still holds good and indicates the future possibility of an increase in profitability of the banks in the long run.

Table 9: Net Interest Margin

NET INTEREST MARGIN (NIM)						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
SBI	2.935	0.095	3.190	0.292	1.585	0.211
BOB	2.715	0.127	2.795	0.066	1.029	0.379
PNB	2.500	0.149	2.993	0.345	2.672	0.076
Indian Bank	2.803	0.136	2.840	0.357	0.154	0.887
Canara Bank	2.285	0.061	2.803	0.039	13.408	0.001
Union Bank of India	2.663	0.440	2.665	0.246	0.010	0.992

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 8: Net Interest Margin

Sources: Based on author's calculation

3.3.9 Market price per share

According to Table 10, the t-values for all six banks are insignificant at the 0.05 level and have a negative T value which indicates the negative impact on the Shareholder Value of the Banks. Hence the Market price per share have a negative impact on shareholder value as the mean difference for all the banks is negative and so t value being insignificant is of less importance.

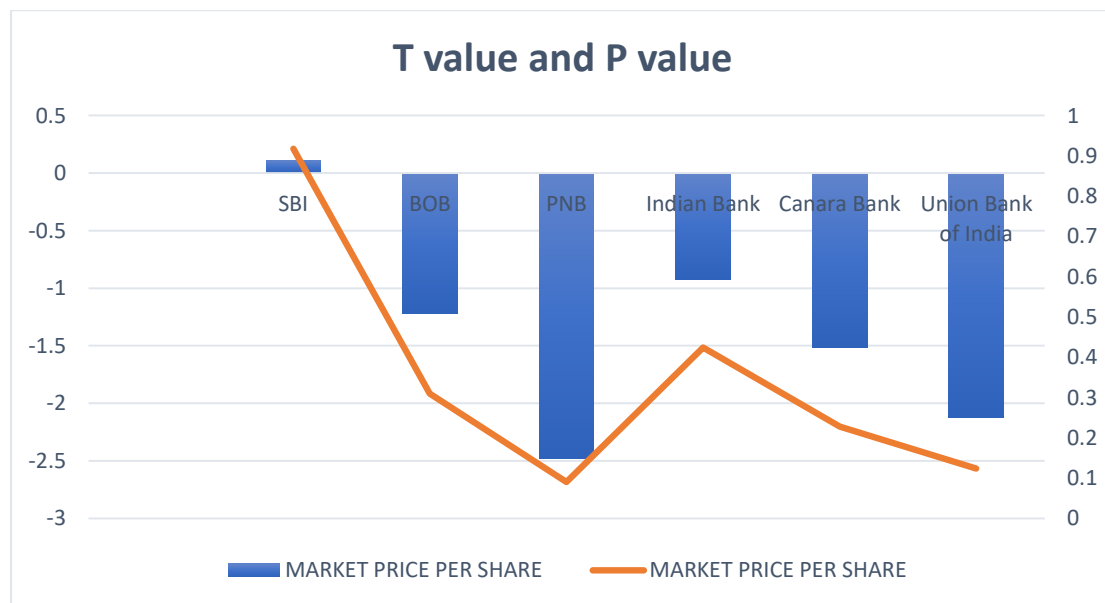
Table 10: Market Price per Share

MARKET PRICE PER SHARE						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
SBI	285.375	28.487	290.663	73.108	0.111	0.918
BOB	114.900	12.200	92.525	28.592	-1.219	0.310
PNB	59.550	19.737	33.250	3.461	-2.476	0.090
Indian Bank	132.288	91.733	80.025	27.211	-0.922	0.424
Canara Bank	194.663	81.169	117.638	28.538	-1.511	0.228
Union Bank of India	54.338	21.396	30.438	4.211	-2.124	0.124

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 9: Market Price per Share



Sources: Based on author's calculation

3.3.10 Price to book value (PBV)

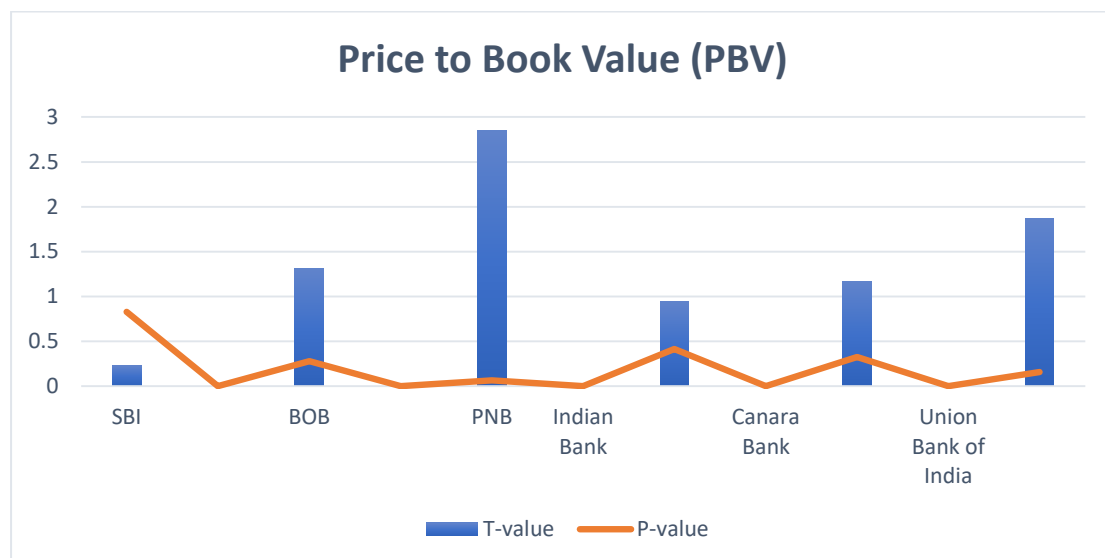
According to Table 11, the P/B ratio is below-one for all the banks and it doesn't affect the P/B ratio of the bank a lot compared to the merged banks. This means the stock is being valued at a discount to equity book value and there is no indication of an increase in P/B value due to the M&A. As a result, the PBV has a negative influence on shareholder value, as the mean difference for all banks has reduced over time, and the t-value, which is insignificant, has become less important.

Table 11: Price to Book Value

PRICE TO BOOK VALUE (PBV)						
Acquirer Bank	Pre-M&As		Post-M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
BOB	0.8	0.178	0.605	0.2229	1.3134	0.280
PNB	0.68	0.1774	0.475	0.1871	2.849	0.0651
Indian Bank	0.4175	0.2347	0.3025	0.8539	0.9418	0.415
Canara Bank	0.5225	0.1598	0.4075	0.09287	1.1717	0.32608
Union Bank of India	0.4925	0.08770	0.4	0.15253	1.8664	0.1588

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 10: Price to Book Value

Sources: Based on author's calculation

3.3.11 Market capitalization

In table 12 and Figure 11, all five banks' t-values are insignificant at the 0.05 level. This is because the Centre's proposed capital infusion at abysmal valuations, as well as shares issued to investors of the amalgamating banks in the main bank (into which the bank/banks are merged), would result in a significant dilution in the merged entity's book value. In other circumstances, the merging banks trade at a significant premium to the main bank, implying that more shares will be issued under the swap arrangement, resulting in additional dilution. As a result, the stock prices of these PSU Bank stocks plummeted even lower, which became a logical explanation for the Public Sector Banks' market cap increasing slowly post-merger/acquisition.

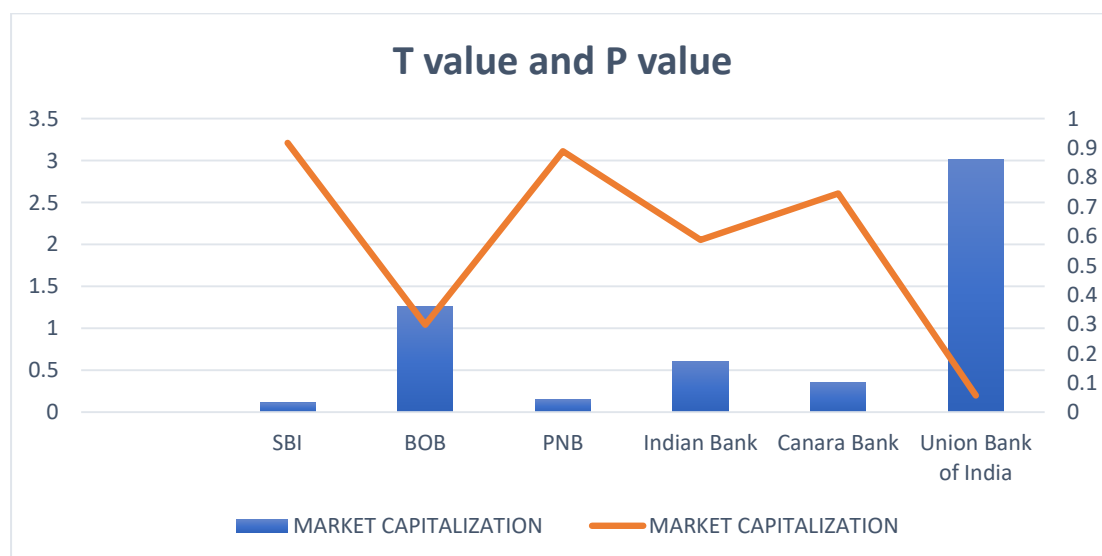
Table 12: Market Capitalization

MARKET CAPITALIZATION						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
SBI	2529.753	252.709	2576.623	648.044	0.111	0.918
BOB	302.334	32.140	381.490	110.648	1.257	0.298
PNB	320.840	98.208	329.635	48.011	0.152	0.889
Indian Bank	68.895	42.328	89.417	31.067	0.607	0.587
Canara Bank	167.108	63.752	185.065	59.165	0.357	0.745
Union Bank of India	129.729	43.706	194.043	26.745	3.020	0.057

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 11: Market Capitalization



Sources: Based on author's calculation

3.3.12 Gross non-performing assets (GNPA)

Table 13. shows that Except for the Indian Bank (t-value, =7.727, $p < 0.05$), the level of significance for the mean difference in GNPA decreased marginally for all banks. The high t value of 7.727 for Indian Bank is significant and GNPA increased post-merger. This is because the Bank faced massive consequences of the COVID19 pandemic, especially the second wave, which led to a weakness in the asset quality of the bank. Furthermore, all the other five banks' t-values are negative and insignificant at the 0.05 level, implying that the banks are doing well following the consolidation in terms of GNPA.

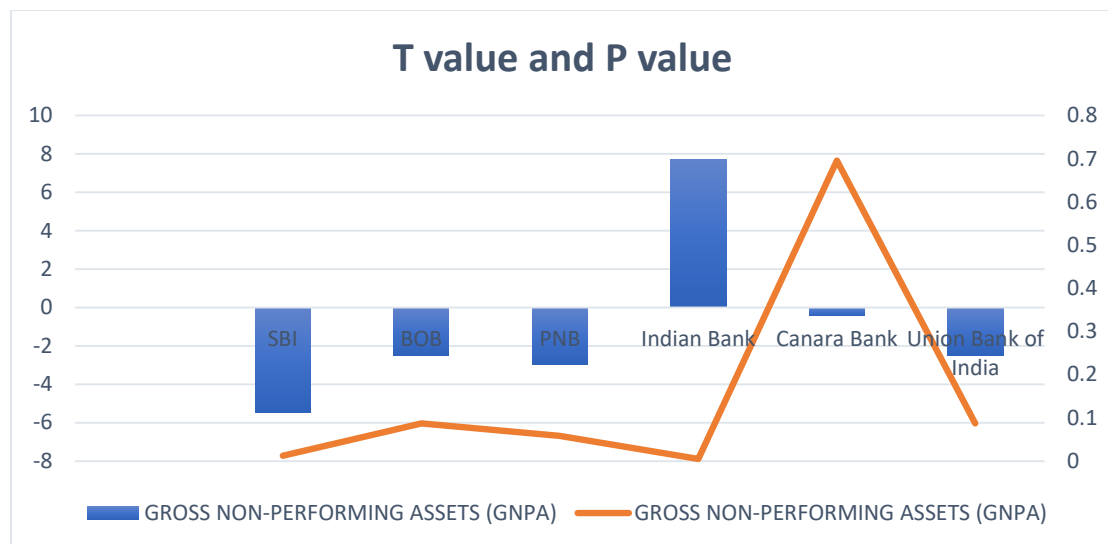
Table 13: Gross Non Performing Assets

GROSS NON-PERFORMING ASSETS (GNPA)						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
SBI	9.220	1.392	6.953	0.587	- 5.454	0.012
BOB	11.215	1.223	10.090	0.467	-2.510	0.087
PNB	15.940	1.169	13.663	0.553	-2.988	0.058
Indian Bank	7.160	0.196	9.928	0.757	7.727	0.005
Canara Bank	8.538	0.262	8.388	0.678	-0.431	0.696
Union Bank of India	14.858	0.500	14.223	0.716	-2.513	0.087

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 12: Gross Non- Performing Assets



Sources: Based on author's calculation

3.3.13 Net non-performing assets (NNPA)

In Table 14. NNPA decreased marginally for all banks including Indian Bank. This is due to the high provisions. And in the case of Canara Bank (t-value =3.584, p< 0.05), and Union Bank of India (t-value =4.050, p< 0.05), the t value is significant and NNPA decreased post-merger. This is because of the increase in the COVID19 loan welfare package issued by RBI, restructuring of loans during the pandemic period, an increase in provisions which leads to the decrease in the NNPA post-consolidation. It indirectly impacts the bank's share price and profitability to a greater extent. Other banks, which are insignificant have a lesser hold on the NNPA on profitability and shareholder value post-consolidation as shown in Figure 13.

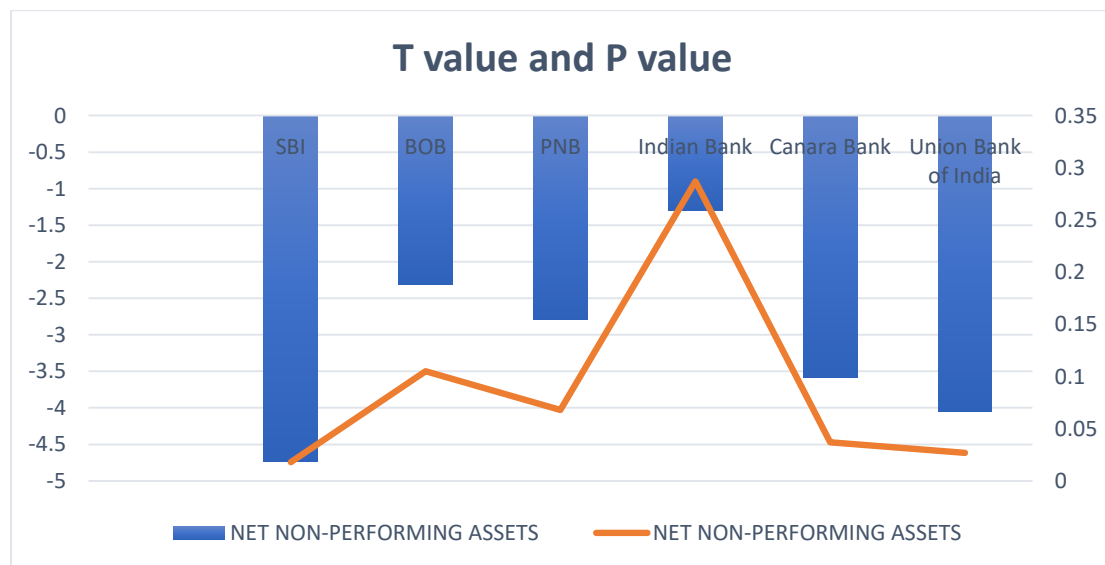
Table 14: Net Non-Performing Assets

NET NON-PERFORMING ASSETS						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
SBI	4.273	1.009	2.685	0.350	-4.735	0.018
BOB	4.463	0.887	3.760	0.424	-2.305	0.105
PNB	6.945	0.808	4.975	0.750	-2.791	0.068
Indian Bank	3.503	0.291	3.110	0.603	-1.292	0.287
Canara Bank	4.945	0.493	3.460	0.585	-3.584	0.037
Union Bank of India	6.673	0.797	4.248	0.737	-4.050	0.027

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 13: Net Non- Performing Assets



Sources: Based on author's calculation

3.3.14 Capital adequacy ratio (CAR)

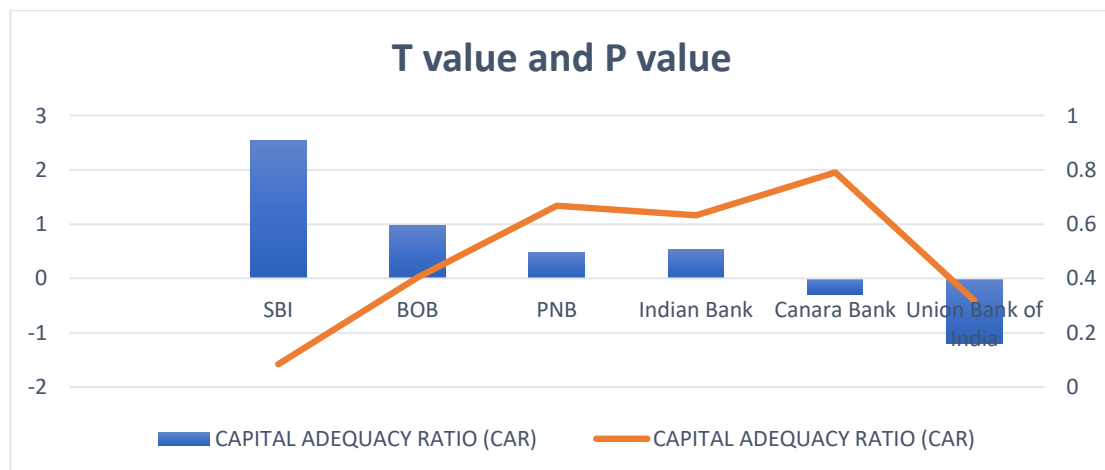
Table 15 shows that the level of significance for the mean difference in Capital Adequacy Ratio for the corresponding study period (Post M&As over Pre-M&As) increased marginally for all banks except for Canara Bank and Union Bank of India. The negative t value indicates the decrease in the CAR ratio of the Canara Bank and Union Bank of India and all t values irrespective of being positive or negative, is insignificant as shown in figure 14. The Capital Adequacy Ratio of commercial banks is used to assess the efficiency and stability of a strong banking system.

Table 15: Capital Adequacy Ratio

CAPITAL ADEQUACY RATIO (CAR)						
Acquirer Bank	Pre-M&As		Post M&As		T-value	P-value
	Mean	Standard Deviation	Mean	Standard Deviation		
SBI	12.733	0.093	13.318	0.406	2.549	0.084
BOB	12.275	0.786	12.815	0.901	0.968	0.404
PNB	13.005	2.157	13.418	0.813	0.474	0.668
Indian Bank	13.925	0.860	14.215	1.029	0.532	0.632
Canara Bank	13.300	1.076	13.150	0.397	- 0.289	0.791
Union Bank of India	13.323	1.874	12.385	0.569	-1.191	0.319

P value: Significant at 5% level

Sources: Based on author's calculation

Figure 14: Capital Adequacy Ratio

Sources: Based on author's calculation

4.0 Findings

It is found that the acquiring bank, Bank of Baroda tends to reduce the Shareholder value the post-consolidation remains lowered despite the good performance of, the targets banks Vijaya Bank and Dena bank prior to consolidation. Canara Bank's Net interest margin increased compared to other banks the reason being an increase in its asset portfolio post amalgamation. The Indian Bank merger cost efficiency is quite low compared to other banks and Bank's Gross NPA increased post-consolidation though it recorded an increase in the net profit post-consolidation. Union Bank and Canara Bank reported a huge rate of increase in their Net profit post-consolidation as both of these banks turned profit-making banks from loss-making banks in their last financial year prior to the consolidation.

The Capital adequacy ratio, Asset quality ratio, Market price per share, Price Book value ratio (PBV), and Market cap being insignificant statistically indicates that the Cost synergies, Profitability synergies will be met in a long period of duration and cannot be measured in the shorter time frame post-consolidation because of the outburst of the COVID19 Pandemic. The t-value though insignificant is not trivial. So, it can be concluded that for a longer time period also, the merger activity of BOB, PNB and Indian bank, Canara Bank, and Union Bank of India has an impact on their left-over earnings.

5.0 Conclusion

In terms of market reactions to merger announcements, the market initially reacted unfavorably to most bank acquisition announcements, lowering shareholder value, but ultimately, there was either destruction or growth of shareholder wealth among public and private sector bank investors. In the banking sector, merger announcements often result in no (or slightly positive) cumulative abnormal returns on acquiring banks' equities and significantly positive abnormal returns on target bank stocks. However, the findings should be viewed with caution. While stock prices reflect the market's expectations for future cash flows, actual results may differ from those forecasts. This is especially true in the case of bank mergers.

To quote Mr. Muthu Raman, Former Managing Director of Tata steel on the day tata steel acquired Corus, "It will take at least another three years before we realize the full synergies of this consolidations". Similarly, it would take at least another two years for the consolidated new entities in the public sector banking to bring out the synergies of such mergers. The major concerns such as Capital Adequacy, Credit delivery and growth, asset quality, and profitability needed to be addressed urgently due to 10.76 lakh crore gross non-performing assets that came to light during the first half of FY2018-19. Hence the drastic step of bank consolidation had to be carried out to restore public confidence in the banking system. However, it is heartening to note that there are clear indications of a pullback as revealed by analysis of financial data post-merger of these banks. The full benefits of such consolidations may take at least another couple of years but it is reasonable to assume that the first step has been taken in the right direction in this matter.

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Pioneering Food Delivery in the Aftermath of a Global Pandemic: A Case Study of Zomato and Swiggy

Mahnoor Sahrash and Anushka Kamashani***

ABSTRACT

The Indian unicorns in the food delivery sector, Swiggy and Zomato, have seen tremendous growth in recent years. This success is attributed to not only their service innovation but also to their exemplary marketing strategies. These companies stand as an inspiration for many upcoming startups. This article gives an insight into the overall market scenarios of the food delivery sector with a special focus on Swiggy and Zomato and their growth trajectories. With delivery services currently being seen as a hotbed for investments, certain fundamental lessons emerge from these two technology-based delivery services, especially in the context of the uncertainty brought about by a pandemic and its aftermath. Focus has also been given to specific practices adopted by Zomato and Swiggy during the pandemic era, that set the tone for their future growth.

Keywords: *Food delivery; Swiggy; Zomato; Marketing; Services.*

1.0 Introduction

The Indian food delivery market is huge. Many people have become habituated to ordering food online. The sector has experienced immense growth in recent years. As of 2019, the organized Indian food market that includes restaurants was worth \$22 billion, of which online food delivery only made up about 15%. That shows the huge growth potential of the food delivery sector in the country. In 2020, India's online food delivery market was valued at approximately \$5 billion. The number of users in this segment in India is expected to amount to 492.9m users by 2025. (glginsights.com, 2021).

The COVID-19 pandemic helped in the growth of the sector, with the urban population being confined to their homes, work from home being the new norm, closure of dine-in facilities, isolation and safety and social distancing taking priority. This sector is expected to reach about \$21 billion by 2026 at a CAGR (compound annual growth rate) of nearly 30% (statista). It is interesting to note, however, that such growth is mainly concentrated in large metro cities such as Mumbai, Delhi, and Bangalore, among others.

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The top 7 to 10 cities make up about 70% of the business and the remaining 490 cities fill in the rest but are growing (glginsights.com, 2021). We've seen an aggressive movement of people to smaller cities, and with the hesitancy of online food ordering decreasing, smaller cities as potential markets are rapidly accelerating. There is higher awareness in these places of the fact that people can get food delivered instead of going to a restaurant. Older parents, who are not the original target generation for food delivery firms, are now starting to place orders. More delivery-oriented companies are seeing opportunities to open in this sector. Greater access to the internet and the extensive use of smartphones resulted in the success of this sector. The revenue of the online food delivery market in India is projected to reach \$13,988mn in 2022. The number of users is expected to amount to 492.9m users by 2025 (Statista).

The food delivery market in India is currently dominated by Swiggy and Zomato which have highly competitive market shares with usage shares being 35% for Zomato and 25% for Swiggy in 2020 (Statista). This highly competitive nature makes it impossible to declare one of them as a market leader in the food delivery sector. Their service innovation, effective marketing strategies and long-term initiatives positioned them as market leaders in the food delivery sector.

1.1 Objectives of the study

- To understand the market scenario of the food delivery sector in India
- To analyze the pandemic performance of Swiggy and Zomato
- To understand the reasons for the popularity of Swiggy and Zomato
- To understand the valuable marketing lessons offered by Swiggy and Zomato

2.0 Review of Literature

Kanteti (2018), in her research paper titled "Innovative strategies of startup firms in India - A study on online food delivery companies in India" attempts a conceptual study to understand the innovative strategies followed by online food delivery startup companies in India like Swiggy, Zomato, Food Panda and Faasos. She notes that the food industry's growth relies heavily on technology and innovation. Restaurant partners benefit from significant cost and efficiency savings thanks to technology. It is critical to concentrate on creating scalable revenue streams in order to be profitable. She believes that the Indian food tech startup industry is ripe for growth and these startups are here to stay in the race. Operations and procedures must be examined and stabilized as well as recognizing and seizing the best opportunity to expand and profit.

Yadav & Muraleedharan (2021), in their research paper titled "Zomato's game plan: Marketing strategies of Zomato" studied the marketing strategies adopted by Zomato and attempted to analyze how these strategies affected the growth of the company. They found that innovation, agility, and effective communication are at the heart of Zomato's marketing tactics. Their voice has a playful, funny, and sometimes even counterintuitive tone to it,

which helps them stand out. Interaction with their audience is their main goal. The study also identifies Zomato's marketing efforts during COVID. Zomato established the Feed the Daily Wager fund to help families of daily wage laborers who are unable to generate any money during these difficult times. They set a goal of 50 million dollars, of which they have already raised approximately 28.13 million dollars. This money is used to provide food packages to households that can feed up to 5 people for a week. In order to ensure that the food reaches the proper individuals, they've worked with a network of NGOs and other groups.

Tribhuvan (2020), in his paper titled "A study on consumers perception on food apps" attempts to find out what is the consumer's perception of online food delivery apps and investigates the factors that have influenced consumer perception of online food delivery apps. The study uses primary and secondary research techniques. The study outlines the important facts about the Indian food delivery industry. By 2023, the Indian internet food market is anticipated to be worth \$12.3 billion. The global growth rate is 9.01 percent, whereas India's online meal delivery sector is increasing at a pace of 15%. Swiggy makes \$1.5 billion in sales, while Zomato makes \$800 million. Between April 2017 and March 2018, both companies delivered 96 million orders. (*Visakhapatnam News, 2020*).

Kumar (2020), in his paper titled "A study on the impact of COVID-19 on home delivery of food items through food delivery platforms" found that the pandemic condition induced by the coronavirus had a significant influence on the online food delivery system. Many restaurants and food delivery partners have created new business models as a result of the traditional means of cooking and delivering food. Furthermore, morale and safety issues about food delivery staff, as well as concerns about the safety of delivery personnel, were severely impacted. He noted that after a few months of lockdown, general usage of online food delivery platforms increased, but many small enterprises had to bear the consequences.

Saxena (2019), in her paper titled "An analysis of food ordering applications in India: Zomato and Swiggy" attempted to identify the pros and cons of the online food delivery apps from the point of view of restaurants and analyze the pros and cons of the online food delivery apps from the viewpoint of customers. She observed that Consumers are most attracted to the feature of Doorstep Delivery, which is available at any time and in any location. Customers are most attracted when they obtain Rewards & Cashbacks, which are followed by loyalty points or advantages. Bad past experience, reviews, and word of mouth are all reasons that deter customers from trying online food delivery applications. This concept with innovation can thrive if it provides continuous and excellent services.

Raj & Kumar (2021), in their article titled "Impact of COVID-19 pandemic on Zomato: A case study" analyzed the financial performance of Zomato in comparison to its competitors during the pandemic. A SWOT analysis is used for this purpose. The study also described the COVID-19 initiatives undertaken by Zomato. The authors opined that even if there has been a slowdown in the market due to client buying habits being influenced by the threat of COVID-19 spreading and the deployment of Lockdown, there has been a slowdown in the market. Following the relaxing of the hotel-related industry's lockdown, we've seen an

upsurge in demand for online meal delivery services. Zomato has made a number of steps to recover from the COVID-19 problem, as well as initiatives to assist its partners.

Kaviya *et al.*, (2021), in their paper titled “A study on digital marketing strategy towards food delivering apps during pandemic” attempted to study the digital marketing strategies of Swiggy and Zomato, their comparison, and the covid's impact on food deliveries. They stated that Zomato has grown in popularity to the point where it now claims to be the industry leader in food delivery. They've surpassed a monthly run rate of 21 million people. Zomato's incredibly designed user interface is appealing to users, simple and easy to navigate, and this has helped it stand out from its competitors. Swiggy has a hyperlocal product delivery technique. They're even concerned about the tiniest details. Swiggy places a strong emphasis on the logistics of the business. Swiggy realized from the start that the best way to break into the delivery market was to develop a strong logistics network, and as a result, Swiggy has built a solid and long-term company logistics structure. It has its own increasing fleet of delivery partners, which presently numbers 1.25 million active partners.

3.0 Analysis and Discussion

3.1 Growing by leaps and bounds

The Indian food delivery industry is experiencing fast-paced growth spearheaded by Swiggy and Zomato. They are the leading brands in the food delivery sector. Their effective marketing strategies and competitive offerings successfully kept the traffic coming, thereby driving sales. Their focus on innovation and agility proved extremely yielding.

Zomato is the first unicorn in India to go public on the stock exchanges. It has come a long way and evolved to be one of the greatest in the industry, from being known as Foodiebay in 2008 to being renamed Zomato in 2010 to being what it is now (date2compete.com, Sep 28, 2021). Its business strategy has transformed from that of a restaurant discovery company to one that focuses on delivery and operations.

As of September 2021, Zomato had about 173,000 eateries, up to 43,000 in 2019. In the first half of FY2020, Zomato's income increased by 225 percent, setting a new high. According to the company's biannual report, revenue was \$205 million, up from \$63 million in the first half of the previous year. (Feedough.com, 2021). Since its commencement in the food delivery sector in 2015, it has delivered 1 billion orders (The Economic Times, Aug 11, 2021). Zomato has experienced its fair share of peaks and valleys and has successfully recovered from numerous failures and life-threatening catastrophes.

To grow its operations, UberEats was acquired for \$350 million (The Economic Times, 2020). Zomato has a 45 percent market share in the meal delivery business and operates in 24 countries. In FY 2020, the average order value was 286.9 dollars, while in FY 2021, it was 395.4 dollars (Q4). When comparing the financial year 2019 to the financial year 2020, Zomato's revenue increased by 105 percent. However, throughout the same time span, its prices only climbed by 47%. In 2018, it made \$68 million in revenue, rising to \$206 million in 2019 and \$350 million in 2020. (Feedough.com, 2021).

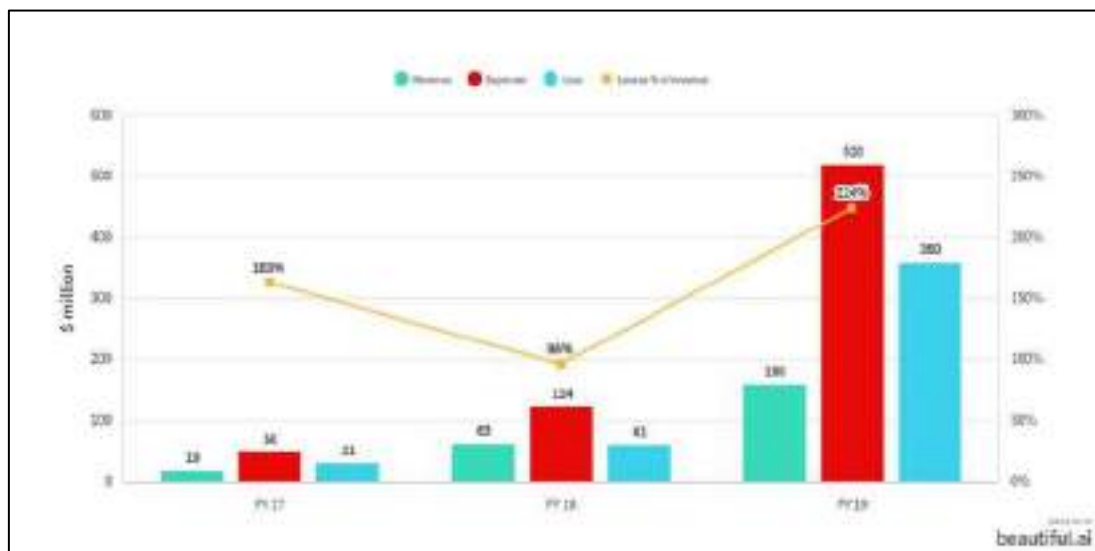
Figure 1: Zomato’s Revenue



Source: www.feedough.com

Swiggy, which was launched in 2014, has risen to the top through successful entrepreneurship, new initiatives, cost-effective operations, dynamic environment adaptation, and exceptional marketing methods. Swiggy Company reported a revenue of 133 crores and a loss of 200 crores for the fiscal year 2016-17. The Better Awards were given to Swiggy by The Economics Times in 2017. Swiggy was also included in Forbes magazine's 2017 edition of the Forbes 30, UNDER 30 INDIA. (The Economic Times, Nov22, 2021).

Figure 2: Swiggy’s Revenue and Losses



Source: www.crosstalk.investopad.com

As of September 2021, Swiggy had 1,28,000 restaurants on its platform. Between June 2020 and June 2021, the company's revenue increased 2.8 times (Business Insider, Aug 13, 2021). Swiggy made \$2,776 crores in sales in the fiscal year that ended in March 2020. As of 2019, it processes over 45 million orders per month and plans to expand to 520 Indian cities by 2020. (The Economic Times, Nov22, 2021).

It has launched a new business called 'Swiggy Instamart,' which specializes in groceries delivery. In addition, it has launched a local courier service called 'Swiggy Genie' to bolster its post-pandemic market.

Swiggy has had its fair share of delivery agent and staff issues, but it has always tried to resolve them and maintain maximum stakeholder satisfaction. Swiggy's success may be ascribed to a "customer-backward" mindset, service innovation, dynamism, competitive efforts, successful marketing and collaborations, and a laser-like concentration on client orientation and satisfaction.

3.2 A test of resilience- the pandemic experience

During the coronavirus pandemic, many businesses, especially those involved in the delivery of basic commodities, had to deal with several setbacks. During the lockdown, many people did not have the appropriate permits to operate their businesses. Against all obstacles, India's resilient companies have stepped up to help not only their customers but also others.

Food delivery companies had an advantage during the pandemic in terms of remote functioning and technology-based operations since everything was moving from offline to online. With restaurants being shut down for many months, food delivery platforms served as a lifeline for restaurants to ensure some business continuity. The increase in customers' ordering-in during the pandemic serves as a testament to the surge in demand for food delivery apps and the subsequent increase in their market. Many restaurants and hotels which have delivered through online platforms were able to grow their delivery revenue throughout 2020. Ready-to-eat food delivery has emerged as a key industry, thanks to the introduction of appealing, user-friendly apps and tech-enabled driver networks, as well as changing consumer expectations. Early on in the pandemic, lockdowns and physical separation rules provided the food delivery sector a huge boost, with delivery being a lifeline for the struggling restaurant industry.

3.2.1 The rise of contact-less delivery

During the pandemic, assuring customers of safety was the need of the hour. Key safety policies such as no-contact delivery, greater delivery partner hygiene, and best safety standards practices for restaurants were established to overcome the fear factor and restore consumer confidence, while also conveying these measures and proper food handling practices to consumers. Consumer awareness of food ordering has spread over time, thanks to the WHO and other sources, resulting in a resurgence of demand. To ensure safety, Swiggy and Zomato conducted regular temperature checks of the delivery personnel and tracked the same of the restaurant staff.

Contactless Delivery has become the norm during the pandemic. Swiggy and Zomato have been at the forefront, heavily emphasizing this to assure customers of safety. The goal of contactless deliveries is to reduce the distance between the delivery partner and the customer. The fewer people a delivery partner interacts with, the lower his risk of catching a virus, and even lower his risk of spreading it to other customers or restaurant executives.

3.2.2 Maintaining the evolving hygiene standards during the pandemic

Swiggy and Zomato ensured that Restaurants promote a high level of hygiene. Every four hours, restaurants scrub down every possible touchpoint, including chairs, tables, doorknobs, worktops, and sinks. 3-ply face masks were distributed to all staff involved in food preparation (bytes.swiggy.com, May 8, 2020). At collection areas, hand wash facilities were set up to allow delivery partners to practice proper hand hygiene. All orders were packed in a separate bag to ensure that the food container does not come into contact with anyone during transportation. This was rigorously monitored to ensure maximum safety.

3.2.3 The emergence of cloud kitchens

Another significant phenomenon observed during the pandemic is the emergence of cloud kitchens or delivery-only restaurants that effectively beat the pandemic blues and thrived during these times. A cloud kitchen is a delivery-only restaurant business with no physical premises, no dine-in facilities, and no takeout counter. In other words, it's a restaurant kitchen that only accepts delivery orders and doesn't have a regular dining area. There is no expensive infrastructure, no waitstaff, no tables, no furniture, nothing. (unengage.in).

Customers can place orders online using online food aggregator applications or restaurant apps and get food delivered to their respective locations. Such a model worked perfectly well for food delivery aggregators during the pandemic times as well as in the current times. Seeing this as a great revenue opportunity, Swiggy and Zomato are heavily investing in such models.

3.2.4 Pioneering marketing communication

Rather than traditional brand marketing, Swiggy and Zomato focused their communication strategies and campaigns throughout the pandemic on doing their part for consumers and the restaurant and delivery partner ecosystem. The communication was designed with the consumer's sentiment in mind throughout the crisis. The pre-lockdown and early lockdown periods concentrated on cleanliness and safety procedures, with the goal of informing customers about how ordering in is safe and what precautions they should take. (Thedrum.com, Dec 3, 2020)

In times of crisis, customers turn to companies they know and trust. These are the times that put a company's value and trust to the test. With the use of technology, logistical prowess, and a thorough awareness of hyper-local trends, the food delivery platforms were

able to establish themselves as necessary services during the lockdown and following unlock stages.

3.2.5 Displaying action-oriented corporate social responsibility

Swiggy has announced the creation of the Swiggy Hunger Saviour COVID Relief Fund, which will be utilized to safeguard the safety and well-being of its delivery partners and their families. Sriharsha Majety, Swiggy's co-founder and CEO, has pledged half of his annual income to the fund. Swiggy's goal for this fund is to raise Rs 10 crore, and it has already raised over Rs 4 crore from initial contributions from Swiggy's founders and staff. In another initiative, Swiggy plans to deliver food and essentials to daily wage workers from partner restaurants, which are also at risk of shutting down due to a lack of revenue. It states that it has been helping thousands of kitchen workers, waiters, and chefs to earn a living in these times. This initiative was launched in partnership with Milaap. (yourstory.com, April 5, 2020).

In the midst of the coronavirus pandemic's 21-day shutdown, Zomato has launched Zomato Market, a grocery delivery service. Zomato Market, like its counterpart Swiggy Stores, is a hyperlocal grocery delivery service. At the moment, it is only available in Delhi, Punjab, and Kerala. Zomato also announced earlier in April 2020, the introduction of a Gold Support Fund to help millions of restaurant workers in the food industry cope with the COVID-19 pandemic. In April 2020, all earnings from the sale of Zomato Gold annual memberships will be used to support restaurant housekeepers, cooks, and waiters, as well as their families, in these trying times. (yourstory.com, April 5, 2020).

A lot has changed in the food delivery landscape with the onset of the coronavirus pandemic. The initial setbacks and challenges were inevitable but the consistent and innovative efforts of food delivery giants like Swiggy and Zomato during this period ensured survival and growth. Their ability to tap into the advantages of technology, remote conditions, customer trust, and loyalty proved to give successful results during the pandemic. Most importantly Swiggy and Zomato have been able to retain customer trust and attract new ones by assuring them of maximum safety which is another factor contributing to their success.

Both organizations have achieved their current status as a result of a clear focus on delivering customer value and ensuring customer happiness. They work along similar lines and are in direct competition with one another. Their outstanding marketing methods and activities have greatly boosted their popularity, distinguished their services and attributes, and aided their expansion in the food delivery business. Swiggy and Zomato have valuable lessons and ideas to impart to any company considering entering this market.

3.3 Some valuable marketing lessons offered by Swiggy and Zomato

3.3.1 Customer empowerment

It is not a new saying that the customer is the king. However, he is the king not just because he consumes but also because he reviews. Customers are becoming more sophisticated with increased levels of awareness and availability of choices and information.

Their feedback, ratings and reviews play a great role in influencing potential customers. It is important to cater to all the needs of the customers, exceed their expectations by providing a multitude of services and ensure quality. The success of Swiggy and Zomato in the food delivery industry is primarily due to positive customer response and feedback and high customer satisfaction and service value delivery.

3.3.2 Holistic marketing

From a contextual point of view, Holistic marketing requires external, internal and interactive marketing (Kotler & Keller, 2016).

External marketing describes promotion, pricing, etc (Kotler & Keller, 2016). In the food delivery space, external marketing plays a pivotal role and its success ensures competitive advantage. Both the firms have excelled in this area, especially through digital media.

Internal marketing describes the training and motivation of employees to serve the customers well. Pioneering in this area will guarantee quality customer service and positive customer feedback (Kotler & Keller, 2016).

Interactive marketing describes the employee's skill in serving the client (Kotler & Keller, 2016). Functional quality matters along with technical quality. It is not enough to deliver food to the customer's doorstep. The food must be fresh, hygienic, delivered on time and properly packed.

3.3.3 Service quality

It is very important to understand that no amount of promotional techniques will work unless there exists high-quality service. User-friendly interface, easily available customer service, employing the right technology, etc, play a role in ensuring quality. The determinants of service quality⁵ - Reliability, Responsiveness, Assurance, Empathy and Tangibles must be emphasized on and companies must work towards enhancing quality through these determinants. At the same time efficient use of technology in service delivery becomes inevitable to ensure superior service quality.

3.3.4 Relevance

The importance of staying relevant to current trends, issues, events, etc cannot be stressed enough. This is so due to the changing scenarios and the dynamic nature of the economy and the consumer markets. In fact, Zomato has successfully marketed its service by staying relevant and using techniques like moment marketing, understanding the audience's nature, sensing the audience's pulse and always managing to attract their attention. Similarly, Swiggy is introducing new services to meet the changing and growing customer demands- 'Swiggy Instamart' for grocery delivery and 'Swiggy Genie' for hyperlocal courier service. One intriguing aspect of their marketing communications is that both Swiggy and Zomato deliver relatable content to their audience.

3.3.5 Differentiation

This is important to stay ahead of your competitors. Differentiation of service offerings can take place in many ways, through people and processes that add value. The service offering must include innovative features. Secondary services can be added to the primary service package. Zomato started off as a restaurant booking and reviews service and later entered the food delivery sector. This move has made food delivery a primary service package and restaurant booking and reviews as its secondary service.

4.0 Conclusion

It can be said with no doubt that Swiggy and Zomato are successful in the food delivery sector due to their service innovation, service quality, customer orientation, service differentiation, successful efforts in staying relevant and adapting to the dynamic environment and most importantly due to their holistic marketing efforts and strategies. Their strong adherence to customer-oriented values and efficient service delivery motive have positioned them at the top. Swiggy and Zomato have an excellent track record with regard to their marketing communications which is evident on social media. Newcomers into the food delivery industry have much to learn from the leaders and their ways of delivering not just food but also great customer satisfaction. Their initiatives and approaches to fighting the pandemic are commendable and make the organizations more resilient than ever. The pandemic and the resulting lockdown caused a shift in how people consume products and buy food. The demand for secure, easy-to-access, and convenient services aligns perfectly with the existing food delivery app models. The food services industry led by Swiggy and Zomato has effectively moved forward by streamlining their services to satisfy the increased demand.

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A Sustainable Supply Chain Management through TQM: A State of the Art Literature Review

*K. S. R. Sarma**

ABSTRACT

Global competition made competitiveness an imperative for sustainable growth of organizations. This competitiveness is influenced by many parameters like quality, delivery, cost, technology, features, flexibility, and customer service etc. of products and services offered by the organizations. Organizational excellence is a result of the composite score for all these performance parameters. Depending upon the business environment and the intensity of competition, importance for different parameters vary. Supply chain management (SCM) decisively influences all these performance parameters thus deciding the sustainability of organizations. Unlike in the past where SCM was considered more as a dominant issue in production operations, it is now the most important consideration in service operations as well, thus becoming a part and parcel of organizational value chain. The issues to be addressed in the enlarged scope of Supply Chain Management are many and invite attention in the context of the inevitable considerations of economic, environmental and social performance which define the Triple Bottom Line of organizations. TQM as a philosophy survived the test of times and continued to be relevant in the context of business excellence and organizational sustainability. In view of its focus on continuous improvement as the basic tenet, all enlightened organizations across the world embedded TQM philosophy into their operational strategies. TQM organizations which could scale business excellence levels continue to survive the onslaught of global competition. While the philosophy promotes a customer-centric culture, the tools and techniques deployed as TQM interventions facilitate operational efficiency and customer satisfaction. This paper focusses to establish the importance of supply chain management in the changed context of competitive business environment and reiterate the relevance of using TQM as a veritable vehicle for ensuring sustainable growth of organizations.

Keywords: *SCM; TQM; Sustainability; Quality; Delivery; Technology.*

1.0 The Dynamic Business Environment and the Imperatives for Survival

Post-globalization, whether an organization operates globally or not, has to face global competition even in local markets. Therefore, all systems, procedures, rules, regulations and criteria for success apply equally even for all local players.

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In view of the intensity of competition and the volatility of global economy, organizations initially focus more on survival in view of the uncertainties and risks involved. Among many conditions for survival, profitable operations attain utmost importance. Profitability depends upon the ability to compete and succeed in the market place through actionable competitive advantage. When it comes to business environment, Indian business scenario is no way different from global picture except for a few advantages it is presently endowed with. "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

1.1 Business challenges and the criteria for sustainability

Economic development keeps on exhausting the planet's loads of normal capital, notwithstanding the endeavours of many organizations to limit their effects, through exercises like diminishing their carbon impressions and developing closed loop manufacturing system. India has 13 out of 20 worst polluted cities in the world. Presently placed at no.3 position, very soon it will occupy no. 1 status, overtaking China. It was established that the present global concern for climate change due to Green House Gas (GHG) emissions is mainly due to industrialization, which was significantly contributed by the developed countries. With shifting of manufacturing activity to China during 90s, due to its low cost operations, China became no.1 in emissions. When India dominates manufacturing scene as predicted, it will overtake China as the topmost polluter.

- Environmental impact of its increasing manufacturing operations will be the highest challenge for India, a major threat to sustainability.
- Associated with environment protection is the need to achieve significant levels of economic performance to service its obligations of generating employment, housing for all by 2022, affordable healthcare, universal education etc. This puts inclusive growth as another inevitable challenge to focus on community development.
- Customers, in addition to best quality at lowest price on demand are insisting on environmental protection, regulatory compliance, ethical governance, corporate social responsibility and profitable operations. Customer delight in an enlarged scope of supply chain operations is yet another challenge.
- Mainstream investors are insisting on value generation through sustainability
- Suppliers expect win-win partnerships on a long-term basis for supporting the operations of the organizations.
- Stakeholders like the regulators, governments, NGOs etc. have their own expectations from organizations to support accelerated socio-economic development

To sum up, **sustainability of operations is the most important challenge for the country** as it addresses the entire spectrum of sustainable performance management. Sustainability enables companies to profit and grow and maintain **competitive advantage**.

Competitive advantage comes through producing goods and services of world class quality by focusing on efficient and sustainable supply chains. Reassessing manufacturing footprint is necessitated by changing trends of global operations.

- The essentials for the sustainability are Productivity, green operations, waste minimisation, optimum allocation of resources and sophisticate IT tools.
- A survey of successful organization suggests that an integrated green supply chain strategy, facilitated by TQM principles is a sure way to ensure competitive advantage and sustainable growth of organizations.

Harvesters, as the companies wedded to sustainability management are addressed, they focus on sustainability through innovation, market share maximization and profit maximization. Significant relations among geographic business units is hall mark of sustenance through regulators, suppliers, NGOs and citizen groups.

Suppliers of Walmart, through a Sustainability Supplier Assessment evaluation ensure that they are in alignment with its sustainability objectives

- Starbucks has hosted a coffee cup suit at MIT for seven years, with the objective of improving the life cycle value of coffee cups, it included the representative and competitors. It ensured the harvesting practiced did not damage the rain forests.
- Nestle faced problem when they used the palm oil ingredient which was sourced from forest nd which is the depleting resource in making kit kat. Nestle was forced to correct the process.
- Coca Cola made substantial investments to redesign pet bottles by using biodegradable sugarcane waste and reduce use of plastic.

Pollution free packaging, sustainable sourcing practices, reducing releasing of industrial affluent are made as central theme of supply chain management. In general the supply chain practices adversely affect the human health and safety. Hence sustainable SCM is aimed at redesigning to reduce the intensity of risks.

1.2 Green supply chain management (GSCM)

While supply chain management is the essential aspect of operational excellence, Green Supply Chain Management offers holistic solutions for sustainable Supply Chain management. Practitioners of GSCM realised some benefits as follows:

- **Financial pay offs** include reduced operating costs, increased revenue, lower administrative costs, lower capital costs.
- **Customer related pay offs** include increased customer satisfaction, product innovation, increase in market share, improved reputation and new opportunities.
- **Operational pay offs** include process innovation, productivity gains, reduced cycle times, improved resource yields and waste minimisation.
- **Organizational pay offs** include employee satisfaction and reduced attrition, improved stakeholder relationships, reduced regulatory intervention, reduced risk and increased organizational learning.

Companies are focusing on sustainable business practices through strategies incorporating climatic changes, scarcity of resources, uncertain regulations and volatility in business. P&G launched a performance rating index and sustainability score card through consumption of water and waste management, GHG emissions to assess the supplier performance.

1.3 Shifting global supply chains

Manufacturing is migrating from China that served as the workshop of the world for two decades, unable to sustain competitiveness. All MNCs, including those in China are looking for low cost locations elsewhere in the world. It has adopted China+1 strategy to achieve global expansion with at least one unit outside China and investing in R&D and innovation.

From the above discussion, following conclusions may be drawn.

- The crucial aspect of SCM is sustainability
- The below factors are impacting the business to focus more on population growth, environmental concerns and scarce resources.
- Sustainability at every stage is playing a major role in SCM, companies are responsible for their suppliers' environmental liabilities.
- Adoption and implementation of GSCM can provide long term strategic benefit to organizations, in addition to providing a competitive edge, putting it firmly on sustainability track.

To understand the shifting economies of global manufacturing, the BOSTON Consulting Group (BCG) studied world's 25 leading exporting economies (which account for 90% of global exports of manufactured goods) along four key dimensions: Manufacturing wages, labour productivity, energy costs and exchange rates.

2.0 Major Findings of the Study

- Manufacturing cost competitiveness of some countries including India held steady.
- Manufacturing must be done at regional level by maintaining the global standards.
- Goods consumed in specific regions will be made at close locations.
- Periodic reassessment of manufacturing footprints to shore up competitiveness.

3.0 Adjusting to Rapidly Moving Cost Competitiveness

Volatility and cost competitiveness will remain dynamic. There are profound implications for global operations calling for a need to enhance productivity levels to global benchmarks.

Supply chain decisions should be based on latest understanding of competitiveness within regions instead of seeing low cost vs High cost. The winners will align their operations with the shifting economies of global manufacturing.

4.0 Advantage India

MNCs are looking at India not merely as a low cost base, but as a place of growing consumption and sustainable market. To capture and capitalize this opportunity, Indian companies must look at the changing patterns of cost-competitiveness and reassess their operations footprints and reengineer their strategies. Government is taking initiatives to ensure ease of doing business in India. Advantages for India are:

- Demographic dividend
- Industry-friendly initiatives of the Central and State Governments) to ensure ease of doing business
- Initiatives like Make in India strategy, Swatch Bharat and AMRUT (Atal Mission for Rejuvenation and Urban Transformation) and Defence offset policy to attract foreign companies with latest technology, upgrade skills, infrastructure, and quality levels and explore opportunities to export products and services made in India.

Sustainability campaign is focussed on the entire spectrum addressing the Triple Bottom Line of economic, social and environmental performance of organizations.

5.0 Supply Chains to be Customer Driven

- Best quality at least cost on demand
- Customer more knowledgeable than the seller.
- Customers demand compliance to environmental regulations and business ethics.
- Want world class products and services and interested to know how and where they are produced.
- Partnering with other organizations.
- Customization is the current trend.
- Competition is led by advances in industrial technology, increased globalization, and tremendous improvements in information availability and creative business designs.
- Sustainable development is reflected by better and more stable economic systems, greater equity, increased health and wellbeing, strengthened communities and improved relations with nature.
- To put a pathway to low carbon, developments in climate resilience needs to be addressed.
- To regionalise manufacturing, companies are establishing manufacturing units' closure to the places of consumption to minimise logistic problems like transportation, local sourcing and talent search.

6.0 Innovation, the Essential Aspect of Sustainable Supply Chains

According to a study by BCG, INSEAD, sustainability champions across the world focused on innovations in resources management as a part of Total Return on Resources strategy. And adopt resource management as a strategic differentiator to give sustainable growth

- Ford advocated sustainability as a performance enabler as energy efficient operations and eco-friendly automobiles are bound to reduce overall costs and increase profitability.
- Renault employed circular economy model and used 90% less water, 80% less energy, 70% less oil and less waste and achieved higher operating margins.
- Toyota, a major victim of Tsunami of 2011 in Japan that disrupted its supply chains chaotically, employed anticipatory supply chains to bounce back to market leadership.

7.0 The Challenges of Supply Chain Management

Organizations spend large part of their budgets on purchasing materials and services. SCM is a significant source of competitive advantage as most of the resources of an organization are deployed there, transformation of inputs into outputs happen, defectives are produced, productivity is judged and the cost of operations is estimated. Achieving business excellence predominantly depends upon the efficiency of SCM. Success of Walmart is attributed to its efficiency in Supply chain management through deployment of latest technology, IT, partnerships with vendors, local sourcing, cost competitiveness and inventory management.

7.1 Green Supply Chain Management (GSCM)

Implementation of TQM, SD, BPR, EMS and Lean are navigating to a paradigm shift in productivity levels and global competitiveness, paving way for sustainable supply chain performance. SCM's entire focus is on resources productivity through minimisation of waste and environmental pollution, low energy consumption and material resources and cutting operational costs.

7.2 Effective waste management is an integral part of GSCM

When waste is managed efficiently, resource productivity is high enabling cost efficiencies, leading to operational efficiency and profitability, ensuring sustainability and competitive advantage.

7.3 Risk management

Tsunami proved that one major event can disrupt many elements of global supply chains. Sustainability is ensure by integrating environmental considerations into supply chain management, such as product design, material procurement and selection, manufacturing

processes, final product delivery to consumers, and product life cycle management according to a useful lifecycle approach.

7.4 Supply chain management challenges

- Globalization of manufacturing operations
- Limited resources and unlimited demand
- Safety and quality products and services
- Shorter lead time, less inventory and better throughput
- Supplier base consolidation
- Access to latest technology
- Green Supply Chain Management and Waste Management

8.0 TQM and its Growing Importance

TQM is not a stage in quality journey but a management philosophy aimed at business excellence. It focuses on quality in management instead of mere quality management.

TQM encompasses every activity an organization does- strategy formulation and deployment, winning and retaining customers, corporate governance, and regulatory compliance, strict adherence to business ethics, environmental protection and community focus. Quality in every activity in the supply chain leads to operational excellence through best quality, lowest costs and fastest process times, all leading to customer delight and sustainable operations.

All global business excellence models, which were earlier called National Quality Awards, are based on TQM philosophy, standards and interventions. All these models insist on efficient supply chains and supplier partnerships to realize benefits of synergy.

Green efforts, lean processes and globalised supply chain are integrated into a complex business environment. The Green Supply Chain Strategy is an effort to minimize the negative impact of a company and its supply chain on the natural environment. Lean focuses on waste minimisation.

8.1 TQM as a facilitator of efficient supply chain

There are many common features between TQM and SCM- Both are customer-centric, organization-wide and insist on excellence. Lean, JIT, Six sigma, Quality at Source, zero-defects make Quality Free, providing best competitive advantage. TQM, when embedded into every stage of SC, enables operational excellence. SCM is tuned to customer requirements and TQM is aligned with customer satisfaction. This is achieved by eliminating inefficiencies, integrating processes and manufacturing products only upon receipt of the order. TQM interventions facilitate efficiency improvement. Focus of TQM is Customer Satisfaction through Continuous improvement, zero defect or right first time and every time

Supply chain management on the foundations of TQM can ensure efficiency in terms of environment management

Systems thinking of SCM as facilitated by TQM Continuous improvement of SCM-PDCA approach

Circular Economy and Reverse Logistics- Reduction, Reuse, Recycling. The circular economy, which minimizes resource and energy consumption and maximizes recycling, has the potential to add up to \$ 1 trillion to the global economy by 2025.

SCM, when embedded with Six Sigma, JIT, Lean, Kaizen, QMS, EMS etc. becomes TQM Elimination of non-value added activities through Waste management addresses reduction, control and prevention by using the waste management hierarchy.

8.2 Important measures for sustainable development

- Technology-appropriate, locally adaptable, eco-friendly, resource-efficient and culturally suitable
- Promoting environmental education and awareness
- Sustainability-based resource usage (sustainability depends on system sustainability)
- Improving quality of life including social, cultural and environmental dimensions

9.0 Conclusions

Sustainable Supply Chain Management is an achievable, actionable and essential proposition in the volatile business environment. A study by MIT and BCG established that

- 70% of the CEOs are permanently wedded to sustainability.
- Most managers believe that sustainability strategy provides competitive advantage.
- Harvesters are integrating their operating frameworks and strategies dynamically in an eco-friendly way.
- Addressing climate change is a huge business opportunity. Companies are taking this opportunity to develop new products and services to identify and address climate risks in their businesses and supply chains.

In the 17 Sustainability Development Goals adopted by the member nations of the United Nations in September, 2015, at least 6 focus on sustainable supply chains- Good Health and Wellbeing, Decent Work and Economic growth, Industry, Innovation and infrastructure, Responsible production and consumption, climate action and partnerships for the goals.

- Realising that resource efficiency is essential for sustainability, champions focused on Total Return on Resources.
- Supply chains are intrinsically linked to cost reduction, resource conservation and speed of delivery, ensuring competitive advantage and profitability
- Both TQM and SCM are based essentially on customer-centric models.

- As both TQM and SCM are organization wide activities, embedding TQM principles all along the supply chain, is bound to produce excellent results, which ensure most profitable and sustainable operations.

This calls for **cross-disciplinary innovation**- sustainability-oriented innovation can create breakthroughs. Today, competition is not between companies, but it is between supply chains.

- Firms with superior supply chain operations will have a competitive edge
- Supply chain managers must be familiar with the principles of TQM and EMS
- Suppliers play a vital role in implementing sustainability practices as most of the materials and services are outsourced.

Measures of Excellence are mostly common to TQM and SCM as both are essentially customer-focused. They provide competitive advantage through reduced costs, enhanced quality and customer satisfaction, happening on the vehicle of continuous improvement. Both focus on energy efficiency, resource efficiency, sustainability, lean management, JIT, Six Sigma etc.

Socially just, environmentally friendly and economically viable supply chains will be a natural consequence of embedding TQM principles in operations.

With better ease of doing business initiatives by the central and state governments, opportunities for India may be immense, aided by its demography. If this bus is missed, the 4th Industrial revolution will go out of India's hands. Country level commitments for environment protection gives businesses certainty and an indication of where investments will be safe and rewarding.

Any mission is leadership driven, more so in India where "Yatha Raja, Tatha Praja is the established work ethic." When leaders decide and resolve, sustainable supply chain management becomes a reality.

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A Study of Latest Trends in Indian Rural Markets Scenario

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ABSTARCT

Rural market includes all business activities which are involved in the flow of goods and services from producers to rural consumers. The definition of rural as given by the Census of India is not being Urban. There can be several approaches to understand the rural markets. Rural market covers all marketing activities which include forecasting the demand, product planning, distribution and facilitating the entire marketing process, with the aim of satisfying the rural consumers. Rural markets offer growth opportunities as the urban markets are increasingly becoming competitive and in many products even getting saturated. Now, income level and standard of living are increasing rapidly in rural areas. The demand for brands is also increasing. This study focuses on the latest trends, strategies and challenges in Indian rural marketing scenario.

Keywords: *Rural; Market; Trends; Indian; Scenario.*

1.0 Introduction

Usually, rural areas are located at the outskirts of the towns and cities and are far away from the same. They have very less density of population. Most of the rural areas are surrounded by the agricultural fields, barren lands and forests. For all practical purposes such as administration, demographic and geographic segmentation etc., the rural areas defined differently in various countries.

The rural economies are different from the urban economies due to the cultivation of various crops, horticulture, cattle rearing, agri-based industries, and so on. The main agro-based industries in India are textile industry, sugar industry, tea industry, coffee industry and vegetable oils industries, leather goods industry etc. Infrastructural facilities like roadways, railways, electricity, television, telecommunication and internet networks etc. are not adequate in the rural areas.

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The rural economies are vulnerable to floods, draughts, forest fires, pandemics, and so on. People migrate to urban areas for want of good education and training facilities, employment opportunities, health facilities etc. Despite various schemes and efforts of the central and state governments, all the above factors make the rural areas not to grow much or grow at a very slower rate.

In some countries as well as in some of our states, the governments are enabling socio-economic development at a faster pace by providing good and wide roads, extension of railway lines, drinking water facilities, continuous electricity supply, telecommunication, television and internet networks, banking, credit and insurance facilities, and so on. The government of India has also planned some smart cities in rural areas. The governments are also encouraging setting up of good engineering, medical and pharmacy colleges, industries, NGOs and so on for the all-round development of rural areas.

1.1 Objectives of the study and research methodology

This study has certain objectives like the following ones:

- To study the prevalent scenario of Indian rural economies
- To study the latest trends in Indian rural markets scenario
- To focus upon the policies and strategies in effective rural marketing

2.0 Review of Literature

The literature available on the latest trends in Indian rural markets scenario can be reviewed as follows. Kalotra (2013) identified that there is a high potential in rural India but exists major differences between the existing and the desirable levels of rural marketing. Market has a lot of potential buyers. However, tapping their needs and wants and promoting to them is a herculean task.

Kumar & Dangi (2013) observed that rural India offers sustainable sales and profit for growth. Since rural population is two thirds of India of the Indian population and incomes are on rise, rural India offers good scope for growth in sales revenues and profits. Rani and Shrivastav (2014) learned that focusing on the Indian rural market is a good option as its market is increasing day by day. A lot of corporates and marketers prefer to locate and expand in total India because its market is expanding year on year. Sivanesan (2014) studied that farming mostly depends on the climatic conditions and, hence, the need or purchasing capability isn't regular. The purchasing power in rural India is influenced by the patterns of harvesting the crops. Hence, there is a need for mapping the marketing with the patterns of harvesting the crops.

3.0 Research Methodology

Research design adopted for this study is descriptive research. So as to attain the objectives of this study, the type of data relied upon is secondary data. The sources of data include various websites, online newspapers, online journals etc.

4.0 Analysis and Discussion

4.1 Indian rural marketing

Rural marketing and urban marketing are different and they are interdependent. Agricultural and forest produce are supplied by the rural areas to the urban areas whereas the consumer, durable and other goods and services are supplied by the urban areas to the rural areas.

4.1.1 Marketing

Marketing refers to identifying the potential customers' needs, wants and desires, planning, executing, designing, procuring, producing, promoting and delivering the goods and services to satisfy their needs and wants and fulfil their desires and getting the feedback so as to improve the quality and range of the products and services.

4.1.2 Rural marketing

Wheat, rice, cotton, sugar and so on and produced in rural areas. The same are also consumed in rural areas. The surplus produce is sold outside the rural areas for the benefit of people in urban and other rural areas. Rural marketing has to focus on economic goods, promotion and distribution through conventional and non-conventional means and so on.

4.1.3 Potential drivers of the rural marketing system

The main reasons why the corporates focus on rural markets and develop effective marketing strategies are to tap the potential of rural markets which can be described as follows:

4.1.3.1 Higher purchasing power

Rural people are more in number and are growing at a faster rate compared to the urban people and hence they have higher purchasing power.

4.1.3.2 Scattered and large rural population

The population in rural areas is scattered, i.e., the density of population is less. Hence, the marketers need to focus on mobile distribution channels like mobile ATMs, mobile vegetable supplies etc.

4.1.3.3 Infrastructural development

The infrastructure such as roadways, railways, airways, seaways, power grid, telecommunication and cable TV networks, health and educational facilities are inadequate in rural areas. This implies that the rural marketing is a herculean task.

4.1.3.4 Growth in rural market

Rural market is growing steadily because of various factors like income and money transfer schemes of the central and state governments, good employment opportunities,

development of good health and educational facilities, remittances by people in urban areas and in foreign countries and so on. This is an attractive factor for marketers.

4.1.3.5 More income from the agriculture

Due to various initiatives of the central and the state governments, the farmers are earning more revenue from the agriculture which in turn leads to their good purchasing and saving power.

4.1.3.6 Traditional look and feel

Rural people give good weightage to old customs and traditions. This encourages the marketers to offer good products and services matching with the traditions and customs of the rural people.

4.1.3.7 Varying demand patterns

The demand patterns of rural people for fast moving consumer goods and consumer durable are varying and hence marketers need to focus upon these patterns so as to establish and grow in rural areas phenomenally.

4.1.3.8 Socio-economic background

The socio-economic background of the rural people is very much diversified. Marketers need to focus an eye upon these backgrounds for their survival and growth.

4.1.4 Significance of development of rural infrastructure

How rural infrastructure is significant in improving the rural economy and lives of the rural people can be explained as follows.

4.1.4.1 Roadways

Roadways provide connectivity and mobility to rural people. They also provide a great means so as to reach the rural people. Hence, the respective governments have to plan and execute to develop good roadways.

4.1.4.2 Water supply system

Water is the backbone of civilizations. Safe drinking water and water for agricultural and other purposes has to be supplied. If there a good water supply system, it leads to good growth of rural population, good growth in cultivation of various crops, savings in terms of buying and supplying water, good health, and so on.

4.1.4.3 Supply of sufficient electricity

Supply of sufficient electricity is the boon for civilization, modernization, urbanization etc. If rural areas get adequate electricity supply, it leads all round development of not only rural people but also rural economies.

4.1.4.4 Housing infrastructure

The house is the main parameter for civilization, modernization and urbanization. If there is no adequate housing infrastructure, no economic activity is possible.

4.1.4.5 Telecommunication, cable TV and broadband networks

Now-a-days, telecommunication, cable TV and broadband networks have become essential for communication, entertainment, updates, news coverage, work from home, online classes, webinars, online shopping etc. Hence, the respective governments and private operators need to establish good telecommunication, cable TV and broadband networks.

4.1.4.6 Sports facilities

Indore and outdoor stadia, football, volley ball, cricket and other grounds etc. need to be developed for physical and mental fitness, entertainment, getting rewards and awards etc. in rural areas.

4.1.4.7 Mini Commercial and shopping complexes and malls

Mini Commercial and shopping complexes and malls need to be developed in rural areas so that the unorganised and organised marketers can reach the rural people effectively and efficiently. One of the factors for the growth of rural trade and rural economies is commercial complexes.

4.1.4.8 Educational facilities

Education and especially higher education is very much essential for the development of rural areas and rural people. For want of education, the rural people migrate to urban areas like Indians migrate to USA, UK, Germany etc. for want of education. Hence, educational institutions have to be established with public and private participation.

4.1.4.9 Health care facilities

Rural people need good and affordable facilities like clinics, hospitals, multi-speciality hospitals, diagnostic centres etc. Even though primary health care centres exist in rural areas, they are not considered as substitutes to the super speciality hospitals by the rural people.

4.1.4.10 Public and private toilet facilities

Another very important of the rural people is private and public toilet facilities. The local bodies have to take care of the development of public toilet facilities. Whereas the central and state governments should support the rural people in the construction of private and individuals toilet facilities. These facilities ensure that the rural areas are developed on par with the urban areas.

4.1.4.11 Open air theatres and function halls

Another much needed infrastructure to be developed in the rural areas is development of open air theatres and function halls so as perform functions, ceremonies, recreational activities etc. These facilities help the rural people to preserve and promote their customs and traditions.

4.1.4.12 Establishment of citizen service centres

Citizen service centres are very much needed in rural areas to obtain birth and death certificates, trade licenses etc. Even these centres were established in some rural areas, the number has to be increased for the convenience and comfort of rural people.

On the whole, it can be concluded that the development of rural economies mainly depend upon development of roadways, supply of safe drinking water, supply of adequate electricity, development of good housing facilities and so on.

4.2 Latest trends in Indian rural markets

The latest trends in rural marketing can be summarized as follows:

4.2.1 Development of rural e-commerce

Thanks to internet coverage by various internet service providers and data enablers such as Airtel, Jio etc., of late, e-commerce sites like Amazon, Flipkart etc. have developed their networks in rural areas. Now, the rural people are also able buy online various FMCGs and durables like their counterparts in urban areas. The recent sales in rural areas through e-commerce is above 40 million USD. This is one of the latest trends in rural marketing. Other e-commerce sites can also extend their networks in rural areas.

4.2.2 Demo tents

Many organized and unorganized sellers of durables like bikes, cars, real estate etc. are using demonstration tents in rural areas. With this they are able to get good sales. The prominent users include dealers of Royal Enfield, TVS etc. This is another latest trend in rural marketing. This trend has to be encashed by other sellers and marketers.

4.2.3 Mini stores

Many organized and unorganized sellers and marketers are opening mini stores in rural areas. The prominent ones include HUL Shakti, ITC e-Choupal & Caupal Sagar, Godrej Aadhaar, Warana Bazar, DSCL Hariyali Kisaan Bazaar etc. This is another latest trend in rural marketing. This trend has to be availed by other unorganized and organized national and international marketers.

4.2.4 Mini showrooms

Mini showrooms are also opened by sellers of durables like bikes, cars, etc. Maruti Suzuki started opening such mini showrooms at the space to accommodate one or two cars in

places like Narsapur, Medak district, Telangana. This is another trend in rural marketing. This trend has to be taken advantage by other national and international marketers dealing with rural consumer durables.

4.2.5 Trade shows

Many Trade shows are also being arranged in rural areas. Many sellers and marketers are opening stalls in such trade shows. These look like mini industrial exhibitions. Agricultural, forestry, fisheries and other food products are made available in these trade shows. The prominent shows include Grain industry expo, Farm Tech Asia, Indian International Dairy expo, India Grain Mech expo etc. The unorganized and organized sellers and marketers can take advantage of these trade shows.

4.2.6 Credit facilities

Credit facilities have also been increased in rural areas. Governments are also initiating many schemes like self-help groups so as to extend the credit facilities. Innumerable banking and non-banking financial companies have also been set in rural areas. This is another trend in rural economies. This trend has to be taken advantage by various marketers dealing with rural consumer durables, real estate etc.

4.3 Marketing strategies, policies and CSR initiatives to capture the growing rural markets

The marketers need to adopt the following strategies, policies and CSR initiatives to capture the growing rural markets.

4.3.1 Strategies and policies

4.3.1.1 Keeping the products and services at the affordable levels

Since the income levels of rural people are less against those of urban people, the marketers need to offer their products at affordable prices, keeping at the vicinity of the rural people.

4.3.1.2 Training and employing rural people

Rural people need to be trained and employed in production, procuring, human resource management, marketing etc. so as to increase their income levels and make them feel that the products are made by them, owned by them and belong to them.

4.3.1.3 Using agricultural, forest and other rural inputs

Rural inputs such as agricultural inputs, forest inputs and other inputs are very invaluable. Hence, those inputs have to be used by the marketers so as to make the rural people actively involved in the production, procurement, exports etc. and earn their livelihood.

4.3.2 CSR Initiatives

4.3.2.1 Spending a part of profits towards rural welfare

The marketers need to spend a part of their profits earned towards rural welfare such as providing good health, education, drinking water facilities etc. This will help them save the expenses in terms of obtaining those facilities and spend those savings on the goods and services of their choice.

4.3.2.2 Encouraging rural people to be innovative and creative

Rural people are unique and they have a lot of innovative and creative qualities like their urban counterparts. To encourage and support their innovations and creations, they have to be offered grants, aids, awards, rewards etc. These innovations and creations help the marketers a lot directly and indirectly towards sales, profits etc.

4.3.2.3 Protecting and promoting rural culture, traditions etc. by organizing various events

Rural culture, traditions, customs etc. bond the rural people like anything. The corporates need to organize the events so as to protect and promote the same. These events indirectly make the rural people loyal to the corporates and their products and services.

4.3.2.4 Developing rural areas on par with the urban areas

The central and state governments initiate various programs for developing the rural areas on par with the urban areas. The marketers at the corporates should take active role in the process of developing rural areas on par with the urban areas. This will help the corporates indirectly so as to win the hearts of the rural people and thereby increase their revenues and profits.

5.0 Conclusion

Based on the above presentation, it can be concluded that if the marketers take up right policies, strategies and initiatives, they can win the hearts of the rural people which in turn leads to good sales, revenue, profits and so on of their products and services for the benefit of marketers and society at large.

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The Impact of Covid-19 on Online Shopping of Consumers and the Factors Influencing Online Purchase Intention

Manasa Gowda N. and G. Alex Rajesh***

ABSTRACT

The COVID-19 pandemic has impacted the lifestyle and motivation of so many individuals all across the world and their purchasing habits have shifted as well. The study determines the impact of the pandemic on online shopping. The study has also identified the most important factor influencing online consumer shopping behavior. The main objective of the study was to investigate the effect of covid-19 on online shopping; to analyze the problems faced during covid-19 and also to study the factors influencing the online purchase intention. The study was conducted on the people of Bangalore; sample size for the study was 100. The study found that the main significant factor for online shopping is Time and Convenience followed by wide range of products, better price, Discounts, deals and offers. E-commerce platform allowed users to have a wide range of products at their convenience and also it helped them in doing that from the comfort of the place where they are.

Keywords: *Purchase intention; Online shopping; Consumers; Consumer behavior; Covid-19.*

1.0 Introduction

COVID-19 has been a dangerous virus which is being spread; the first Covid case has been reported in the Wuhan. These viral diseases infection can spread easily by the discharge from the saliva droplets of the person who is infectious and also by the sneezing or the cough by any person who is already being infected. As on the year 2021, in the India there is availability of vaccines to stop the spread of covid 19 virus. Most of these vaccines are much more effectively working against the cure of the COVID-19 disease

Introduction to the world economy in general and international trade in particular have experienced significant losses as a result of the coronavirus Covid 19 epidemic, which is still ongoing. Multiple factors have exacerbated the precarious scenario in which firms and end consumers have found themselves. Consumers have increased their purchases on the online internet marketplace due to the global lockout, social distance, and other precautions taken to limit the spread of the COVID-19 virus, among other considerations. During the lockdown and quarantine period, the corporate landscape underwent fast change.

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The COVID-19 pandemic has impacted the lifestyle and motivation of so many individuals all across the world; their purchasing habits have shifted as well. The current study aims to analyze this shift in consumer behavior. In achieving this objective, the study determines the impact of the pandemic on online shopping across industries, due to pandemic situation raised from the spread of COVID 19 virus has made to identify the priority of the online digital consumers. The study has also identified the most important factor influencing online consumer shopping behaviors based on the multi stages survey.

The study aims to test proposed approaches to assess the purchasing behaviors of the online consumer, which can contribute to the identifications of the trend and patterns of the online digital shopping. Hence, it can also be the components of a comprehensive toolkit in the designing of the e-commerce strategies, used both in the state levels and for the individual company.

1.1 Need and relevance of the study

To understand the growth of e-commerce due to consumer change in behavior towards online shopping and to know the factors that influence for this change in behavior. When traditional shopping becomes difficult or even terrifying, people are increasingly inclined to shop online.

2.0 Literature Review

Gu *et al.*, (2021) the study was conducted in ten fastest E-commerce growing nations, it has been found that during pandemic there is a high impact on awareness and experience among consumers.

Nichabha *et al.*, (2021). The study was conducted to understand the factors influencing online purchase intention. The study has found that “perceived usefulness” had a high impact purchase intention.

Di Crosta *et al.*, (2021) the study was conducted on understanding consumer behavior towards necessity and non-necessity products, the consumer spending level on necessity products were high in comparison with non-necessity products.

Fatema & Siddiqui (2021). The study was conducted to know the factors influencing online buying behavior during covid19 pandemic. The study considered eight factors to understand its influence on online shopping. The research found that there is a positive effect on online consumer behavior between quality and features, price, durability and performance, reliability and trust, E-service, security, time, service quality and ease of use.

Prebreza & Shala (2021) the study was conducted to understand the impact of various factors on online shopping behavior. Hypothesis has been framed to test the relationship between factors and online shopping behavior; the study revealed that there is a positive relationship between quality and price, socialism on online shopping behavior.

Pham *et al.*, (2020) the study has found that the covid19 pandemic shows a moderating role in making consumers to buy online.

Aggarwal & Kapoor (2020) The study conducted to understand the effect of Covid-19 on online shopping behavior, it was a descriptive study and the study has found that covid19 pandemic made consumers to rely more on online shopping. Demand for FMCG goods increased during pandemic.

3.0 Research Methodology

This is the method of a conducting the study of a research paper in a way of systematic manner, the research and the study becomes easy and the result orient, if the study is correctly planned and structured. The current study is descriptive and exploratory.

3.1 Objectives

- To investigate the effect of COVID 19 on online shopping.
- To analyze the problems faced during COVID 19.
- To study the factors influencing online purchase intention.

3.2 Data collection

The data is collected from primary sources via questionnaire which is shared among the customers who are shopping online in Bangalore city.

3.3 Scope of the study

- The research is focused on online buying.
- The data is collected from the consumers in Bangalore

3.4 Sampling

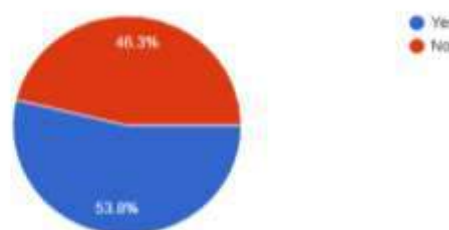
Sampling Technique	Convenience Sampling
Sample Unit	Online Shopping Customers in Bangalore
Sample Size	100

Source: Primary data)

4.0 Data Analysis

4.1 Challenges and stock availability

Figure 4.1: Showing Stock Availability

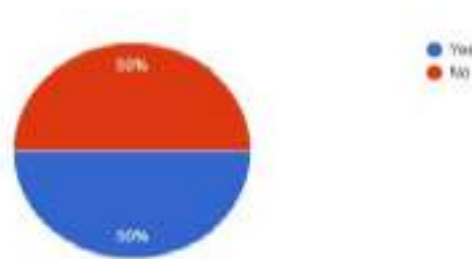


Source: Primary data

From the above chart it is clear that out of 100 respondents, 53.3% of consumers found it easy in finding what they need in stock whereas 46.3% of the respondents found it hard in finding stocks.

4.2 Predicament on availability

Figure 4.2: Showing Predicament on Availability



Source: Primary data

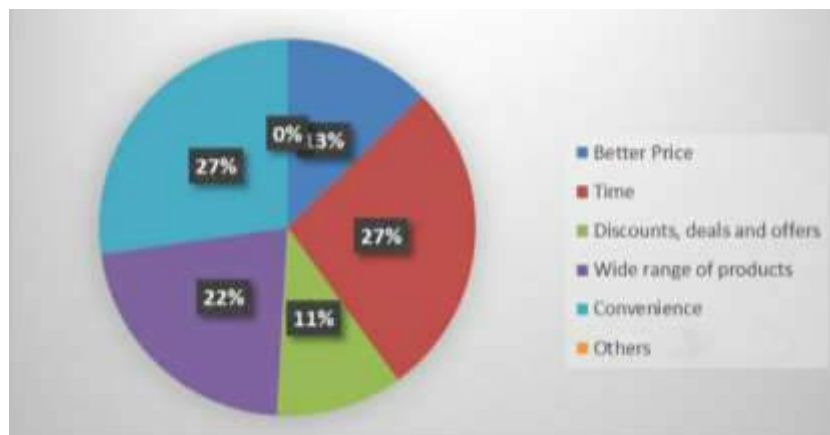
The study shows that 50% of the respondents found it hard to in getting what they were looking for whereas the rest 50% from 100 respondents which comes to 50 people found what they were looking for.

4.3 Challenges faced in return policies of goods

The study shows that 59% of the respondents out of 100 people found hard for the return policies of goods during Covid pandemic situation; whereas the rest of people which comes around 41% of the respondents told it was not hard for the returning policies of goods.

4.4 Factors influencing online shopping

Figure 4.3: Showing Factors Influencing Online Shopping



Source: Primary data

From the study, it can be inferred that the main significant factor for online shopping is time and convenience followed by wide range of products, better price, discounts, deals and offers

5.0 Conclusion

It was best time for e-commerce industry as the consumers felt this was the best option to do shopping over traditional practices. The Covid-19 norms and restrictions especially the lockdown made the drastic shift of the consumers from regular buying to online purchasing and there was a positive impact of pandemic on online buying.

The consumers felt it was much easy for them; they enjoyed shopping online as it saved lot of time and the need of the consumers was able to meet as there were no restrictions of hours of searching it on online. It seemed that the online business has grown very high in this short period of time.

Electronic purchasing will be a bright spot in India in the next years. In India, following COVID-19, attitudes regarding E-buying are improving. It will be extremely beneficial in preventing the spread of Corona from person to person. The Covid-19 epidemic has prompted more active online buying by consumers; today, E-shopping is a better source in this Corona virus situation, and E-retailers sell products that are generally purchased in supermarkets. This shows that even if there are some factors which pull the customers back from online shopping, in this pandemic situation it is more convenient for everyone to shop online rather than going out. Online shopping is easier and all the things come to your fingertips. The study helped in understanding the online shopping behavior from which to prepare a timely response in the future. The whole study shows how convenient e-commerce platform was during the lockdown and how easy was it for the customers to get what they wanted. E-commerce platform allowed users to have a wide range of products at their convenience and also it helped them in doing that from the comfort of their house of the place where they are. So, we can conclude this on the note that online shopping is more convenient and easier at any time for anyone.

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