



Gavesana

# Journal of Management

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# Journal of Management

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The Gavesana Journal of Management is a bi-annual refereed journal of the Vignana Jyothi Institute of Management. Its objective is to disseminate knowledge of contemporary issues related to management and development. The journal seeks to serve as a platform for intellectuals to share the rapid strides made in contemporary research. The Research Journal has been registered with the Registrar of Newspapers for India (RNI)

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# EDITORIAL

Human Resource function (HR), in any organization, has to be that of a strategic or business partner, by developing the talent in the entity through job rotation, job enrichment etc., involving expert teams, business leaders and line management. Such a partnership is a long-term relationship to achieve objectives common to the partners, as also the organization's financial success. In the process, the HR employees, as partners, should perform their assigned roles, and also support the activities of those in other functional areas. This needs a strategic plan which dovetails the HR Vision and Mission into that of the organization.

HR, as a Strategic Partner - increases employee productivity and thus the organization's profitability; enhances competency and talent management; uses the technology and knowledge to formulate, implement and review strategies; copes with the changes in the business environment arising from unforeseen business situations, and globalization; and serves the internal and external customers well. This is done through efficient and effective delivery of human resource services. For this, the HR needs to spend more time in the organization's planning, design and development. It must become part of the business team, involved in planning at the highest level. HR Managers and HR professionals are strategically suited to provide the necessary leadership in change management, which is a challenging task.

The Human Resource Information System (HRIS) has to be effectively used to handle daily administrative HR tasks. Employees can make use of the self-service facility online, to support business strategy development and implementation, which saves time and costs. There should be an HR Head who understands well the strategic partnership/relationship between organizational strategy and human resources. He should be an expert in all HR functions. Someone from within the organization can be groomed for this role.

Research has shown that the HR function will be effective in achieving the business objectives when it assumes the role of a strategic business partner. The top management should ensure this. The administrative reactive approach in people management can no longer support the organization in a competitive business environment. If the HR function is decentralized fully, the line managers and supervisors will eventually put the blame on HR when problems arise. If this happens, it interferes with the effective use of line managers' and supervisors' time in the operations of the organization on daily basis. The line managers and supervisors need to be supported to make them more proficient in managing their subordinates in the performance of daily tasks. Complete participation of HR people in strategy development and implementation promotes HR as a strategic partner. The HR Manager and HR professionals should contribute to business decisions; develop business acumen to understand how a profitable business is run; be customer-centric; and learn how to link HR practices to the organizational business strategy.



The expectations from HR as Strategic Partner include: recruiting the right employees; align corporate values to the recruitment strategy; well-developed competencies of the workforce, and their relevance to organizational core business; participative culture where HR initiatives fully support the overall strategic plan; discard ineffective HR practices that do not contribute to the success of your organization. HR management requires continuous improvement i.e., Kaizen to ensure and retain its relevance as strategic partner. For this, capable and committed people are needed at every level, supported by senior management. Change has to be managed well to avoid or minimize disruption in the organization's activities, and for its success.

The effectiveness of the HR people as a strategic partner is also dependent upon the corporate policies and practices, structure, types of activities carried out, location, effective communication, leadership and motivating employees to keep moving in the right direction as per plan. Every aspect of HR has to be reviewed in the process of implementing the necessary changes and reorganization. Having the right is crucial to help them succeed and engage their full attention with the view to ensure HR truly becomes strategic partner. The HR Scorecard shows whether the organization is making good progress on making HR as strategic partner. The competitive advantage of the organization can be enhanced by aligning the HR strategies to the overall business plan. To ensure that HR truly becomes a strategic business partner, adequate financial backing is necessary. One needs to take measures to eliminate or minimize risks to HR, and it should be ensured that HR plays a meaningful role and not necessarily a major role, particularly during financial crises. It cannot also be a trial and error approach.

In fact, in a business landscape that is changing fast, there is an imminent need for HR to be an active strategic partner. By aligning itself with strategic plans of the business, it needs to foster a stronger relation between the executive team and the workforce. Externally, it can make valuable contribution to branding and the tone of communication. By leveraging customised, more personalised metrics and deep analytics, it can vastly improve organizational learning, training and improve decision making. Consequently, the human capital program will lend more impact, thereby encouraging and enhancing collaboration between various functions across the organization. HR can no longer be just a functional arm, a distant participant, but will have to assume the role of strategic partner, integral to organizational well-being and growth.

**Dr. Ch. S. Durga Prasad**

# 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 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

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## 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.

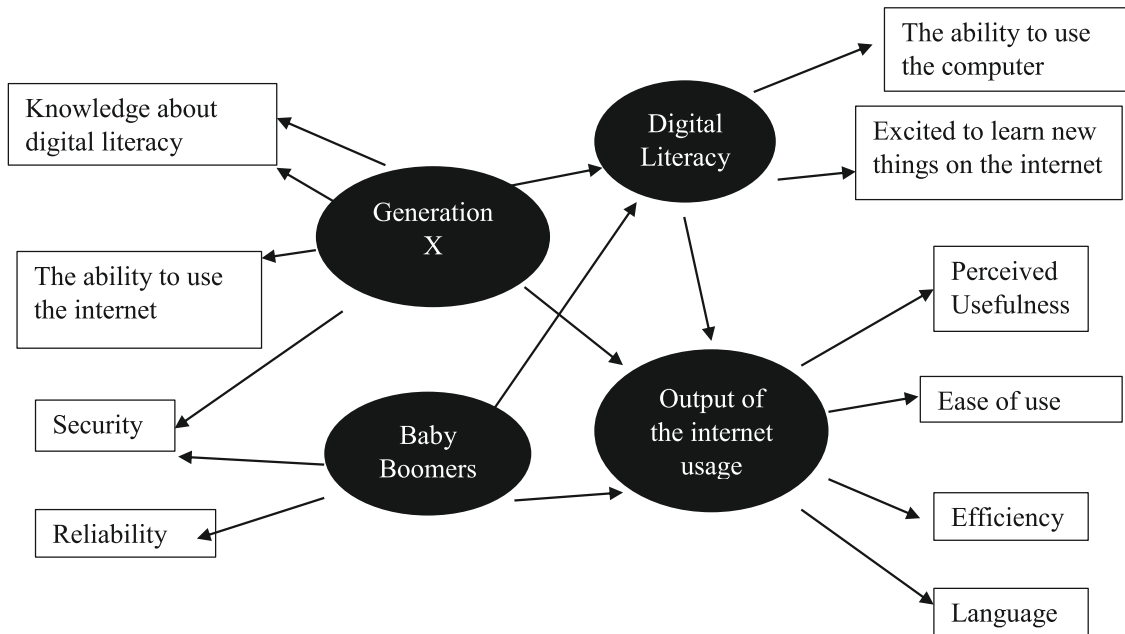
Betts et al. (2019) in their paper studies the perception that older adults have on digital technology. The sample consisted of seventeen older adults who were aged between 54 years to 85 years and it explored how the older population understood the technology in their lives, and this was done by forming 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 afSchreurs 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.ter eight sessions most of the population under study were able to use the software application independently.

## Conceptual Model

Fig 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.

H10:  $\beta_1 = 0$

H1a:  $\beta_1 \neq 0$ .

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

H1a: 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 <sup>a</sup>	.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 <sup>b</sup>
Residual	144.864	88	1.646		
Total	186.000	89			

Note: a. Dependent Variable: usage

b. Predictors: (Constant), age

**Table 4: Coefficients<sup>a</sup>**

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 and Ho, 2002; Hooper, D, Coughlan, J, and Mullen, M 2008).

H<sub>20</sub>: r = 0

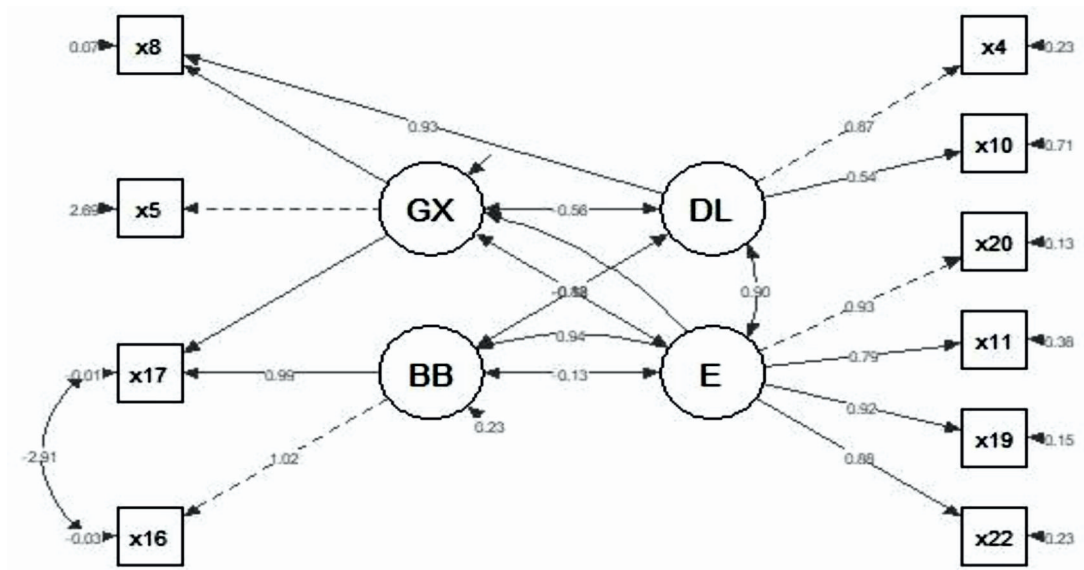
H<sub>2a</sub>: r ≠ 0

H<sub>20</sub>: There is no correlation among the output of internet usage viz., perceived usefulness, ease of use, efficiency, and language

H<sub>2a</sub>: 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 $\chi^2$ 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
x20	Perceived Usefulness
x11	Ease of use
x16	Reliability
x19	Efficiency
x22	Language
x17	Security
x8	Knowledge about digital literacy
x4	The ability to use the computer
x5	The ability to use the internet
x10	excited to learn new things on the internet
DL	Digital Literacy
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.

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# **A Study on the Influence of Customer Relationship Management on Service Quality and Customer Loyalty : A Study Conducted Among Hotels in Tamil Nadu and Kerala**

Ms. Vimala.K.V\*

## **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.

## **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. 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.

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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.

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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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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. Customer satisfaction had a positive impact on customer loyalty, but the effect of customer trust on customer loyalty was not confirmed. Since its launch in 1985, SERVQUAL has become a widely adopted technology for measuring and managing service quality. Recently, a number of theoretical and operational concerns have been raised concerning SERVQUAL. This paper reviews these concerns and proposes a research agenda.

#### 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

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



<b>Knowledge Management</b>	Tamil Nadu	3.48	.704	1 894	.038	.845
	Kerala	3.47	.744			
	Total	3.47	.719			
<b>Behavioural</b>	Tamil Nadu	3.29	.732	1 894	3.016	.083
	Kerala	3.20	.774			
	Total	3.26	.749			
<b>Attitudinal</b>	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.

Table 1.1 One way-ANOVA between the State 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			

(Source: Author's Primary Collection and Calculation)

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	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	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	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.
- 1) 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.
- 2) 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.
- 3) 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.
- 4) 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.
- 5) 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.
- 6) 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 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.

*Key Words – Tourism | Industry | Pandemic | India | Covid | Kerala*

## Acknowledgment

We would like to acknowledge the local vendors, Staff of Hotels, Food and Beverage Outlets, Spice farmers, and workers for their direct and indirect input in completing this paper.

## 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.

## 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%.

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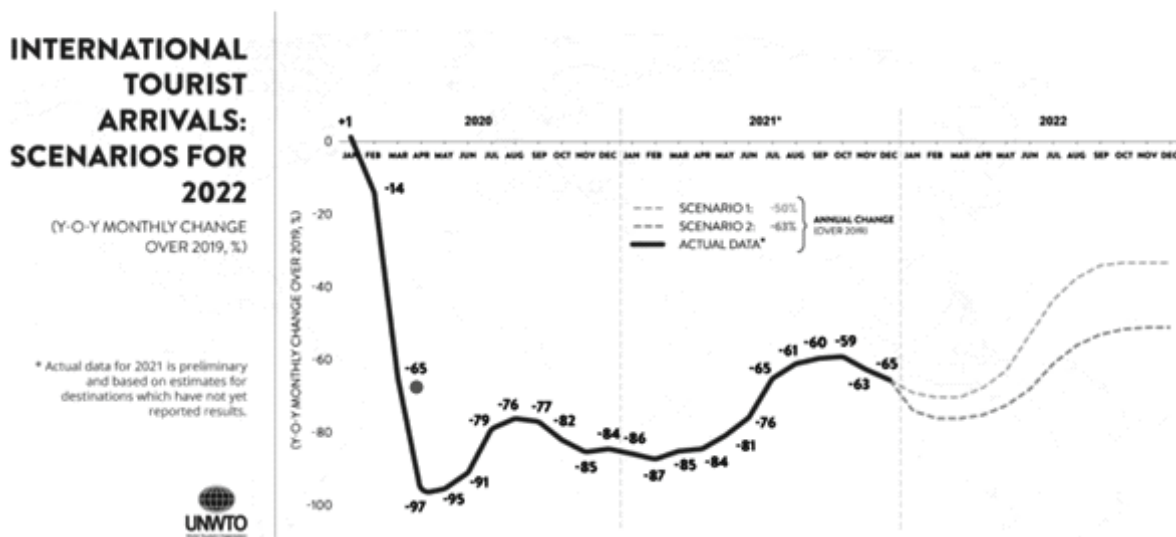
- ✓ Tourism supports one in 10 jobs and provides livelihoods for many millions more in both developing and developed economies.
- ✓ In some Small Island Developing States (SIDS), tourism has accounted for as much as 80% of exports, while it also represents important shares of national economies in both developed and developing countries.

## 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.

### International Tourist Arrivals in 2020 and 2021 and Scenarios for 2022

(y-o-y monthly change over 2019, %)



Source – UNWTO Statistics

## 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.



**FOREIGN TOURISTS' ARRIVAL – INDIA 2021****Table 1**

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

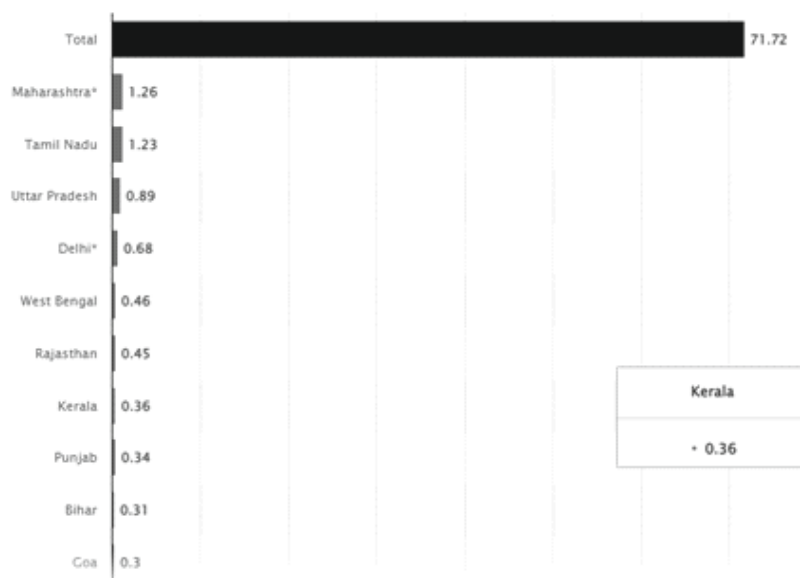
Source : Tourism Statistics – Incredible India – [www.tourism.gov.in](http://www.tourism.gov.in)

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%

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.

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

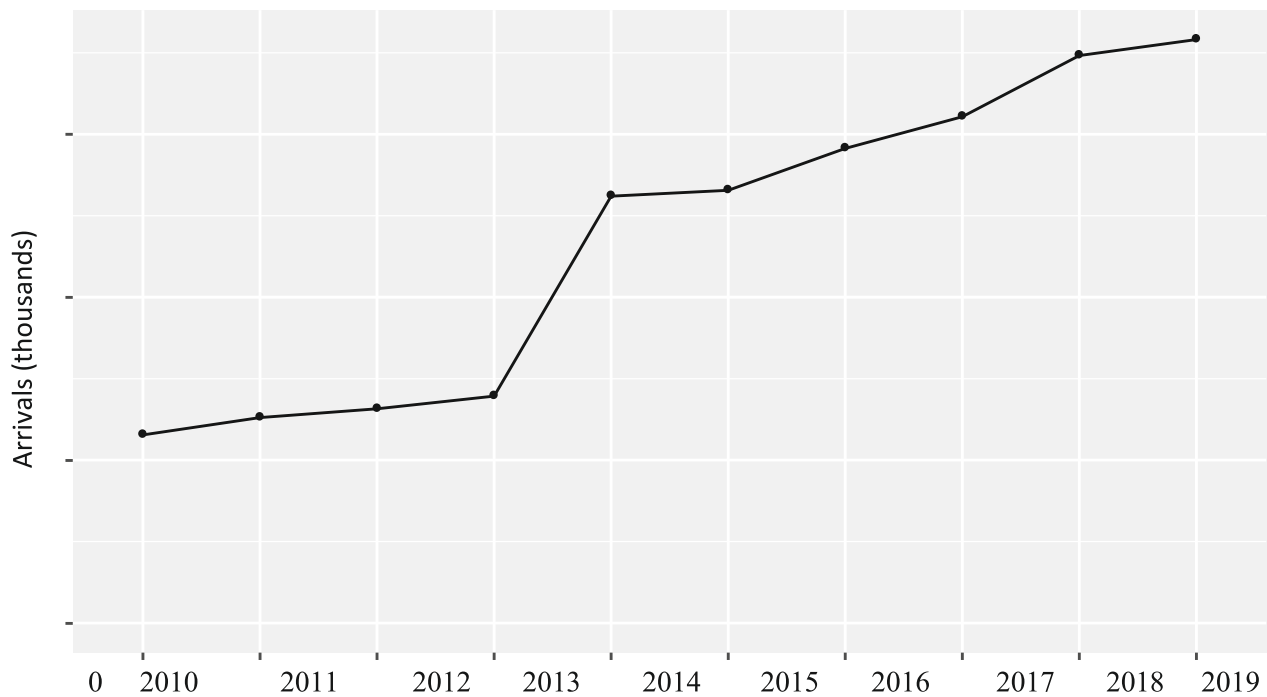
Total Arrivals

Overnight (tourists)

Source : Tourism Statistics – Incredible India – [www.tourism.gov.in](http://www.tourism.gov.in)



**Figure 3**

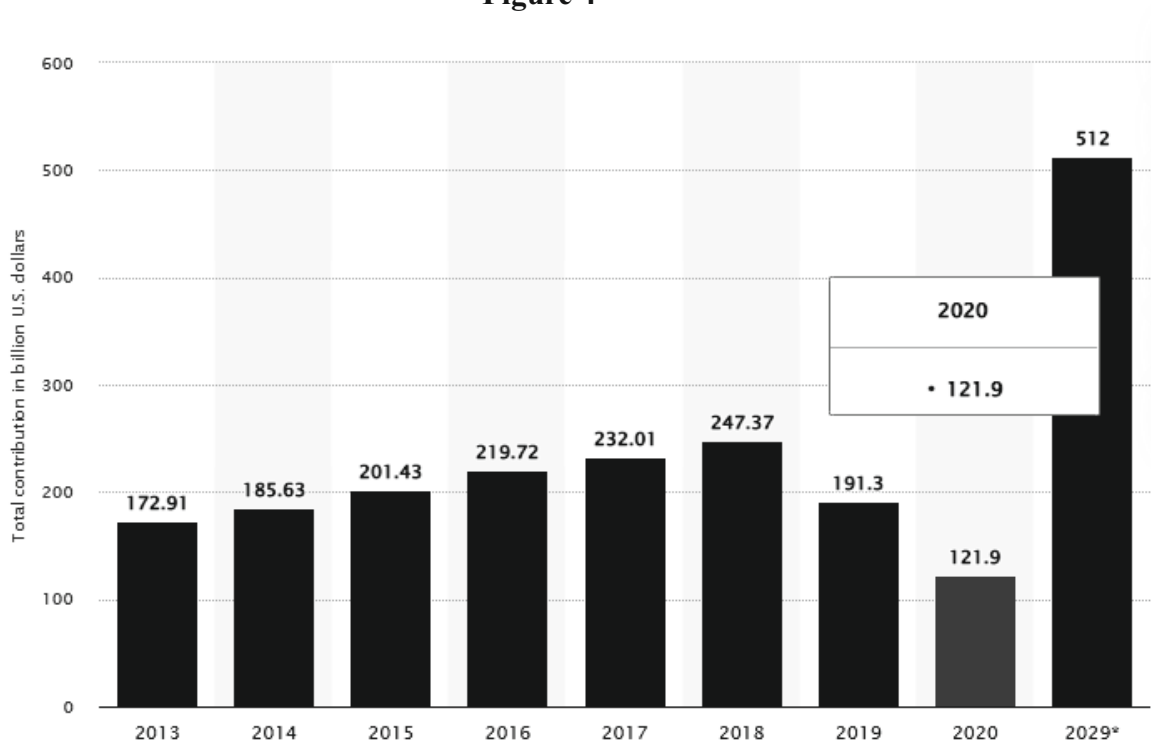


Source : Tourism Statistics – Incredible India – [www.tourism.gov.in](http://www.tourism.gov.in)

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.

**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)**

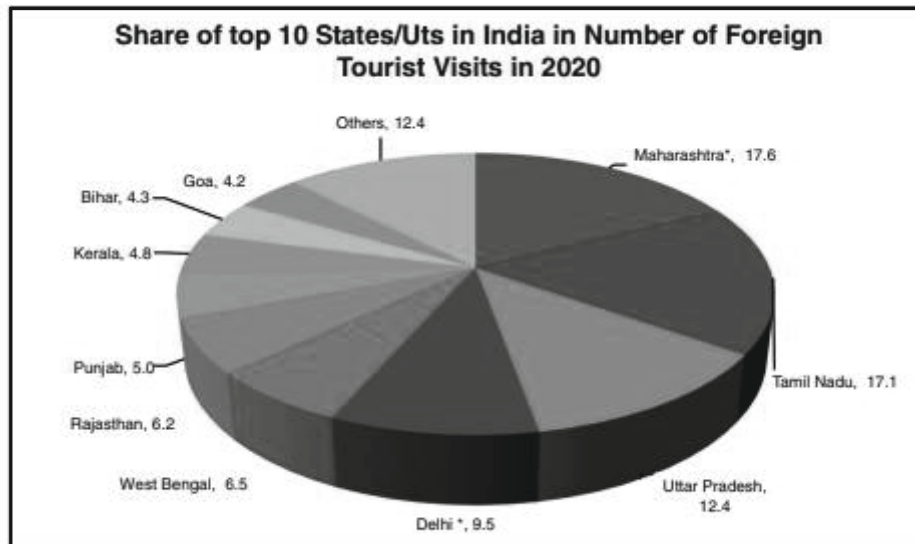
**Figure 4**



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.

### **Kerala significantly contributes to the Indian revenue from its Tourism Sector**

**Figure 5**



Source : Tourism Statistics – Incredible India – [www.tourism.gov.in](http://www.tourism.gov.in)

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

Source: Department of Tourism, GoK

<b>Kerala Tourism at a Glance</b>	
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.

## **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

### **Few things the industry learned during the Crisis**

#### ✓ **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.

#### ✓ **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 travelers

#### ✓ **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

## **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.

## **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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Statistics | UNWTO

- **UNWTO TOURISM DATA DASHBOARD**

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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 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 .

### 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.

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:

1. Operating leverage
2. Financial leverage
3. Combined leverage

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## 2. Objective of the Study

1. To examine the pattern of operating, financial and combined leverage and its impact on the overall profitability of WIP Ltd.
2. 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. 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. 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.

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.

#### *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.

#### **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)

### 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.

### 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)

### Interpretations

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

### 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)

### Interpretations

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

### 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)

#### Interpretations

In the ratio of financial leverage is declining .

#### 5. 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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# Green Banking Initiatives –A Special Reference Towards Public Sector Banks in Southern Districts of Tamilnadu

M. Narayanan\* and S. Chandrasekaran\*\*

## 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.

**Key Words:** 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. Bangladesh is one the most environmentally influenced country in the world; keeping this in mind, Bangladesh Bank established a Green Banking Policy in 2011. 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.

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## 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

Nirmala r. 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 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

#### *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.

### 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.

### 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 Tamilnadu. 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.

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### 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
	<b>Total</b>	<b>80</b>	<b>100</b>
Age	Below 20	4	5
	21 to 30	49	61.25
	31 to 40	13	16.25
	Above 40	14	17.5
	<b>Total</b>	<b>80</b>	<b>100</b>
Educational Qualification	Upto +2	13	16.25
	Diploma courses	9	11.25
	UG	21	26.25
	PG	37	46.25
	<b>Total</b>	<b>80</b>	<b>100</b>
Marital Status	Married	36	45
	Unmarried	44	55
	<b>Total</b>	<b>80</b>	<b>100</b>



Occupation	Student	31	38.75
	Professionals	11	13.75
	Government employee	10	12.5
	Private employee	19	23.75
	House wife	9	11.25
	<b>Total</b>	<b>80</b>	<b>100</b>
Residential	Rural	33	41.25
	Urban	25	31.25
	Semi-urban	22	27.5
	<b>Total</b>	<b>80</b>	<b>100</b>

*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 20 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	<b>V</b>
2.	E-Banking/Internet Banking	444	5.55	<b>I</b>
3.	Debit Card	349	4.363	<b>II</b>
4.	Credit Card	239	2.988	<b>III</b>
5.	Smart Card	164	2.05	<b>VI</b>
6.	E-Wallet	154	1.925	<b>VII</b>
7.	Paytm	192	2.4	<b>IV</b>
8.	Others	138	1.725	<b>VIII</b>



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

**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. 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, Azmi, & Irfan, 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

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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. 2020 (Bhumika)

### **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, Joseph, & Deshmukh, 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.

### **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, Duobien, and Liubinien (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.T (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 Magdalena Jeliska and Micha B. Paradowski (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 Sangita 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 A. 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: It is 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 Swati Soni and Tina 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.

Ansi Ranji and V. Krishna Priya are the authors (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, A. Asbari, M. Fahlevi and M. Mufid, A. E. Agistawati and Y. Cahyono and P Suryani (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 Pooja Jain and U. S. 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 and Heather M. 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 Class2. 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:

1. Personal profile
2. Company Information/ Job Profile
3. Support from Officers
4. Support from Co-workers
5. Support from Co-workers
6. Positive Parenting
7. Parental Satisfaction
8. Spouse Support
9. Domestic Support
10. Role Overload
11. 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.

1. There is no significant influence of work life balance among the groups of Demographic variables of the respondents.
2. 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**

<b>Work Life Balance and Demographic Variables</b>				
		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

#### 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 Pooja Jain and U. S. 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 A. 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, Duobien, and Liubinien (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.T (2021). This study also says that the teaching professionals were feeling work over load to a moderate level that impacts their job satisfaction level.

## 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.

## 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 unpredictable. 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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# **An Investigation to the Effects of Employee Commitment and Employee Performance Impact of Big Five Personality Traits: A Constructive Breakdown in Banking Sector in Kerala India**

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## **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. 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

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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, Viswesvaran, & Schmidt (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, Molyneux, Wilson, & Tavakoli, (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, Tsui, Zhang, & Ma (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, Potočnik, & Zhou (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 fulfillment 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, Fischer & Subich (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, Gardner, Gavin, & Broberg, (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**

Variables		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			
	Clerk	1.65	0.278	4		

Openness	Manager	1.67	0.296		0.1	0.98
	Total	0.56	0.099			
	Clerk	1.75	0.330	4		
Extraversion	Officer	1.72	0.284	636	4.86	0.01
	Manager	2.02	0.266			

Source: Primary Data

## Interpretation

1. 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.
2. 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.
3. 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.
4. 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.
5. 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**

Variables		Mean	Std. Deviation	df	F	Sig
Conscientiousness	Employee	1.66	0.318	10	0.942	0.49
	productivity			627		
	Employee					



Agreeableness	productivity Employee	1.65	0.246	10	0.484	0.90
				627		
Neuroticism	productivity	3.76	0.552	10	0.854	0.58
				627		
Openness	Employee productivity	1.65	0.297	10	0.484	0.90
				627		
Extraversion	Employee productivity	1.74	0.320	10	11.74	0.00
				627		

Source: Primary Data

## Interpretation

1. 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.
2. 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.
3. 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.
4. 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.
5. 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**

Variables		Means	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		
Neuroticism	Employee	3.76	0.562	10	0.854	0.58
	Productivity			627		
Openness	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

1. 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.
2. 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.
3. 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.
4. 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**

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

3. 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.
4. 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.
5. 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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# Impact of Depleting Ground Water Resources on the Start-Up Ecosystem and Rural Entrepreneurship

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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 an 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.

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**KEY WORDS:** Economy, overexploited, spatially and temporally, trend, anthropogenic and climatic factors, Mann–Kendall test, Sens slope estimator

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## 1.0 Introduction

Water is the most fundamental substance to the existence of Life. Water scarcity in 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 m<sup>3</sup>/year of available water per capita and in northern Chile, water availability per person is lie between 500 to 1000 m<sup>3</sup>/year such a range is considered internationally to be constraining for the sustainable and economic development of countrys (Johnson et al., 2001; L. 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; S K 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 230km<sup>3</sup> (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 examined 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 has 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.

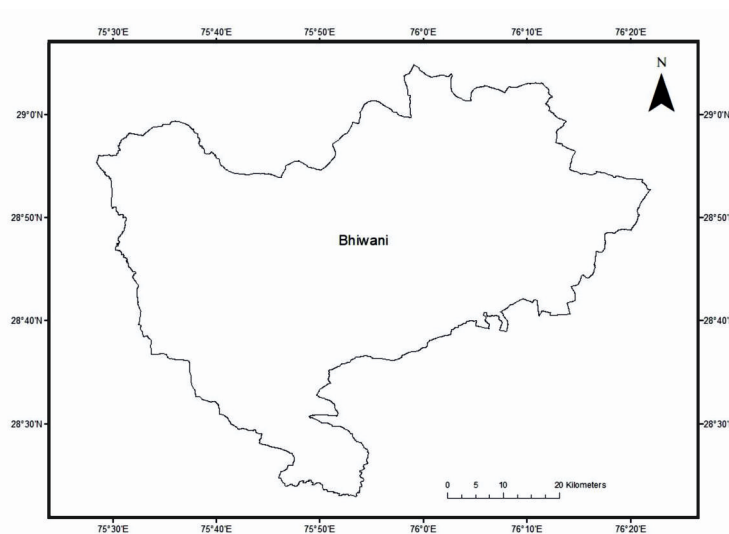
The literacy rate and density of population in the district are respectively 76% and 342 per sq.km. Approx. 21% of the population lives in urban area and remaining 79% population leaves in rural area. Dohan is the major river of the district and flows in direct response to precipitation. Only the tails 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

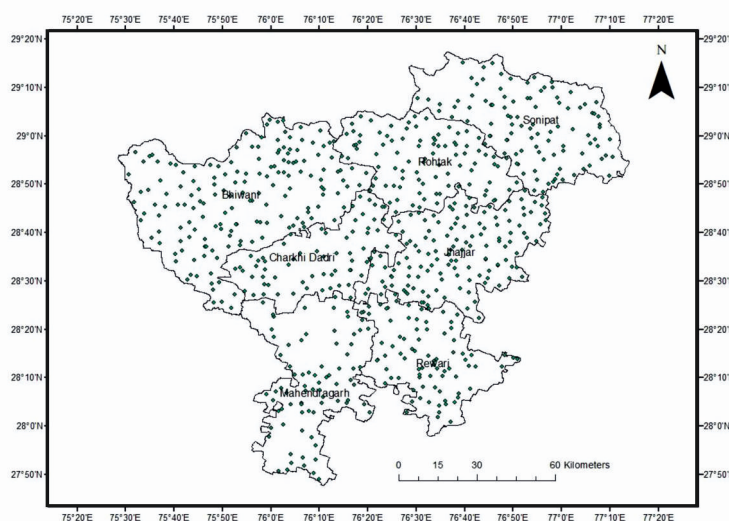
This study is mainly based on secondary data, which have been procured for the period 1974–2021 from the Groundwater Cell, Department of Agriculture, Government of Haryana, Panchkula. It records the depth to groundwater level biannually during pre-monsoon and post-monsoon seasons. Data of a 7 community 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.

**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)*

## 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 Arc-GIS 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 Arc-GIS 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)

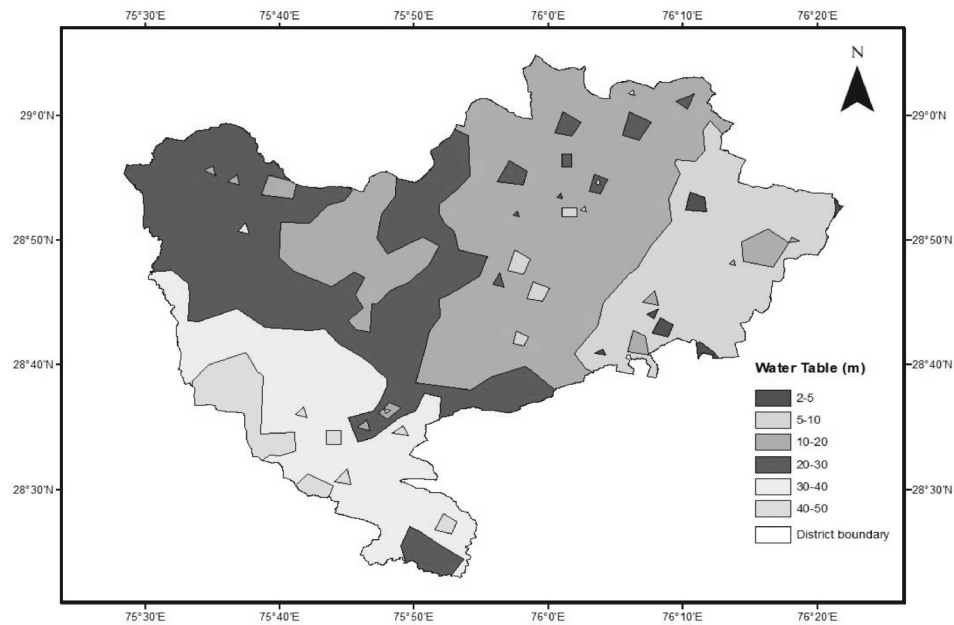
**Table 7: Area (000 ha) under different groundwater depths (m) from 1974 to 2021**

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)

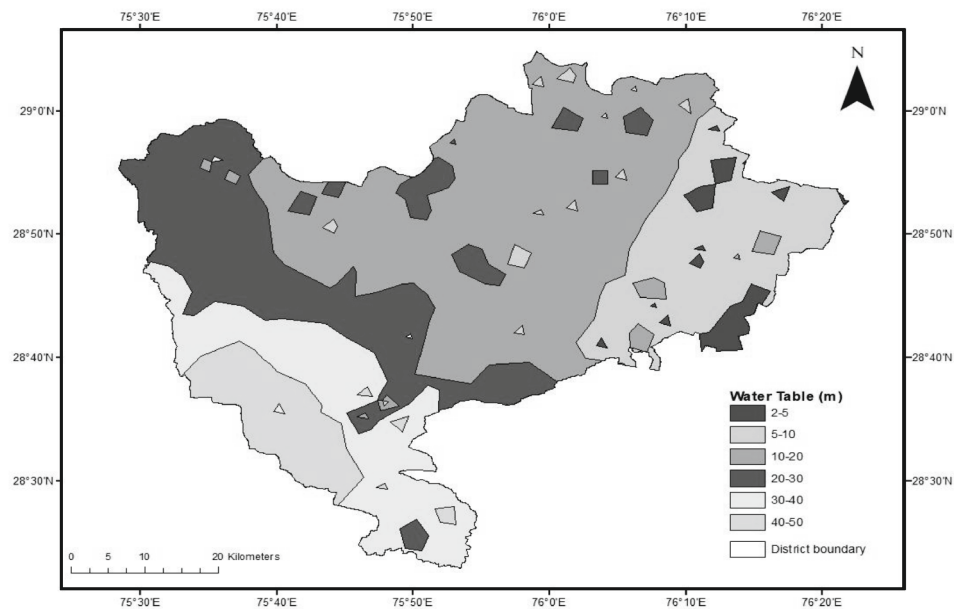
- Spatial variation of groundwater depth from 1974 to 2021

**Figure: 3 Spatial variation of groundwater depth in 1974**



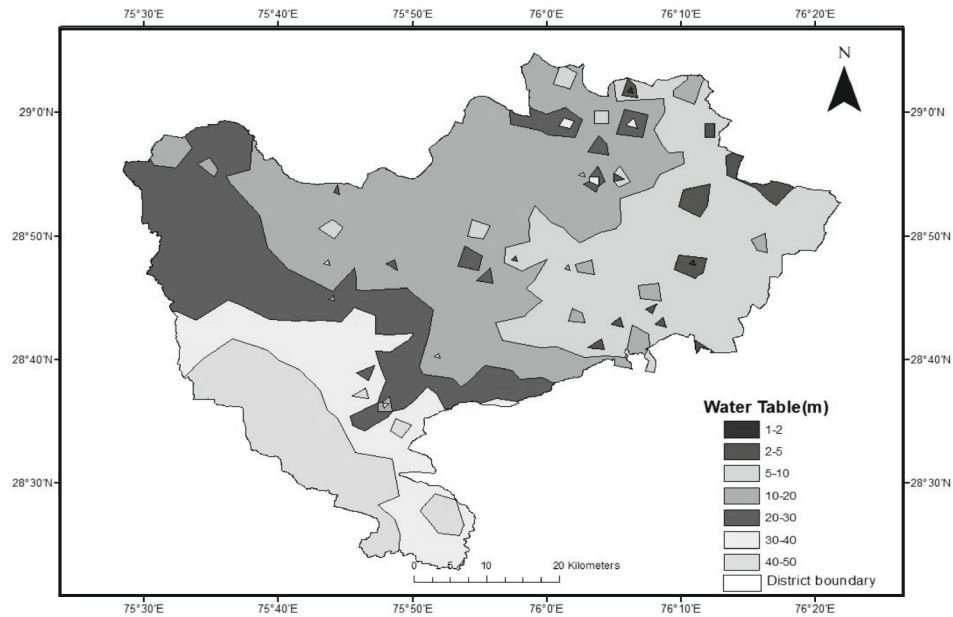
*Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)*

**Figure: 4 Spatial variation of groundwater depth in 1984**



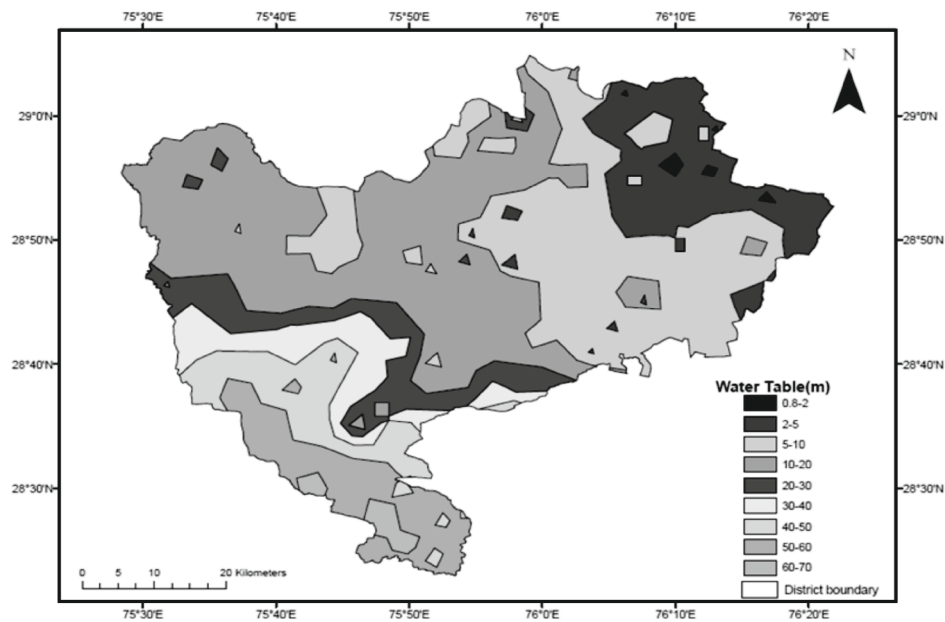
*Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)*

**Figure: 5 Spatial variation of groundwater depth in 1994**



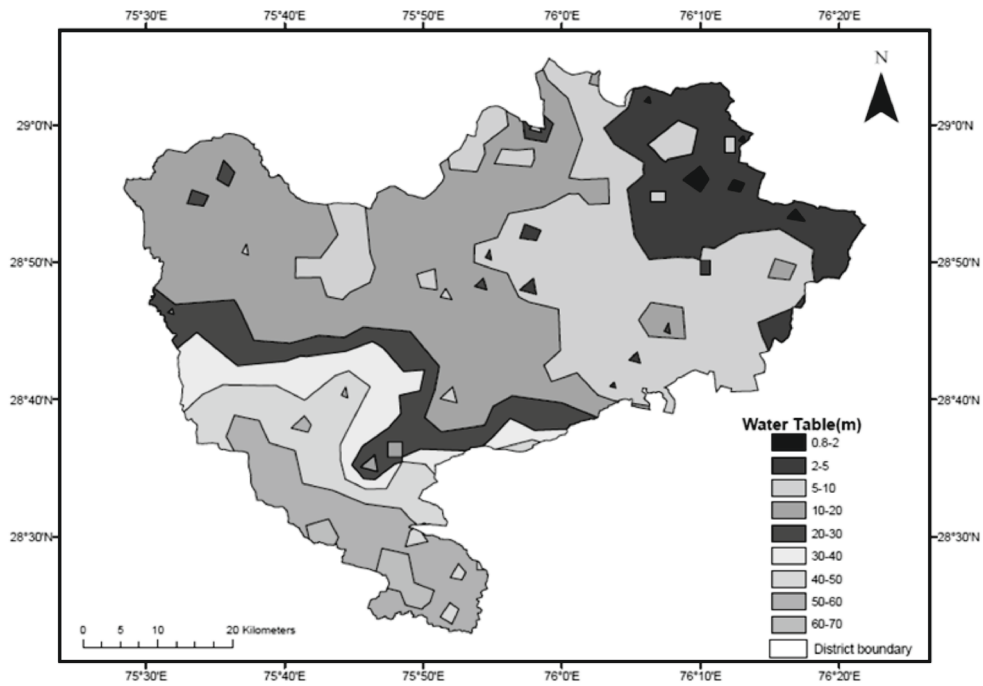
*Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)*

**Figure: 6 Spatial variation of groundwater depth in 2004**



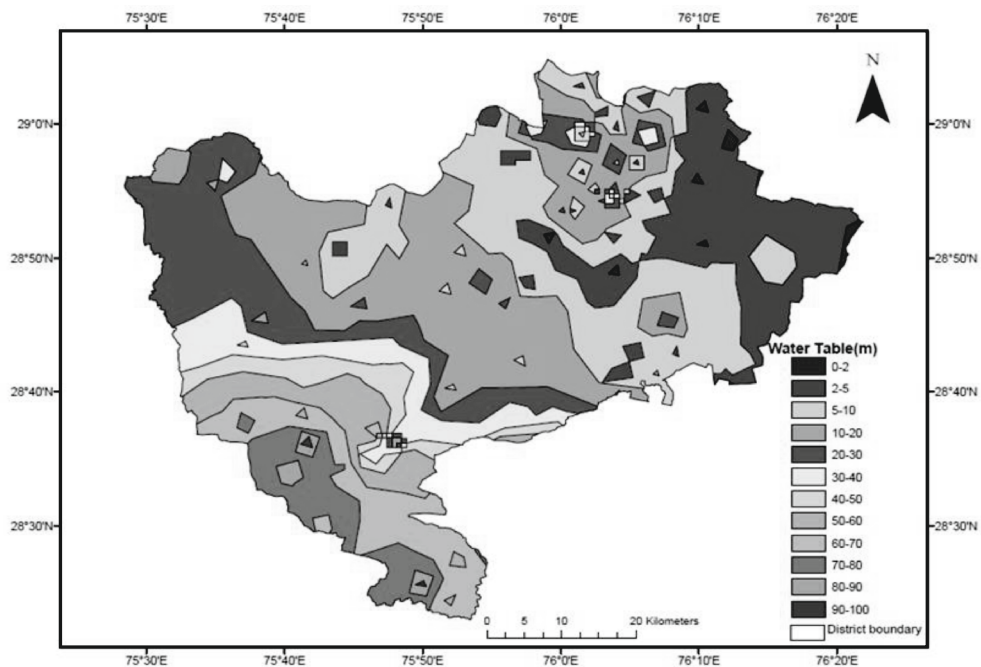
*Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)*

**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.

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 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)*

**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 develop- ment
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).

**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).

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).

#### 4.2 Spatial and Temporal Variations of Groundwater Fluctuation of Bhiwani

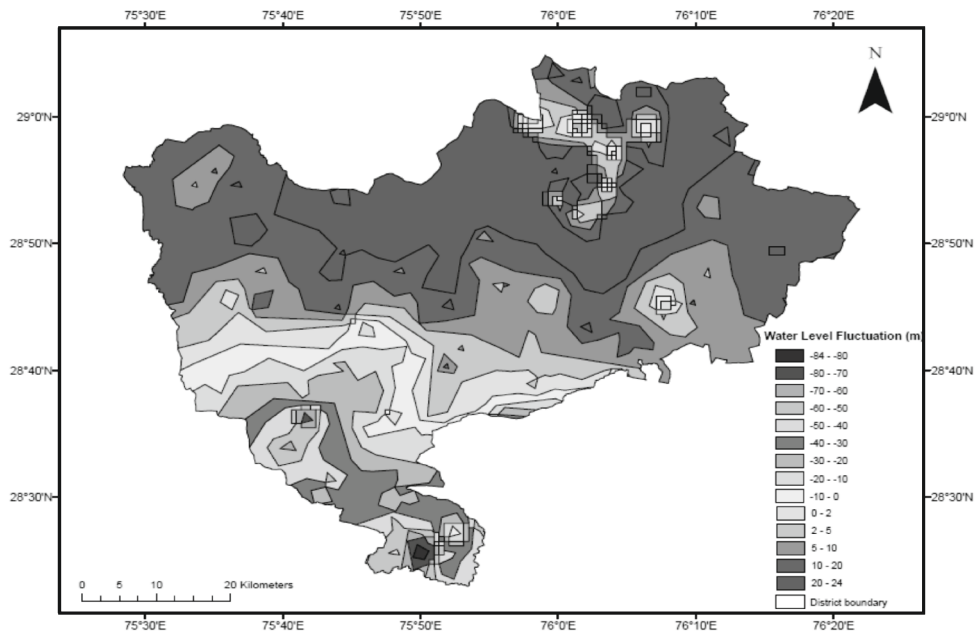
District wise average groundwater fluctuation (cm) was calculated (Table 15) by taking 1974 as reference year, i.e., 1974-1984, 1974-1994, 1974-2004, 1974-2014 and 1974-2021 for Bhiwani districts. Average fluctuation of the study area was calculated through cumulative arithmetic mean by considering the 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.

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 a average decline of 14.8 cm per year was observed during the study period of 1974 to 2021 in the Bhiwani district.

**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)  
+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**

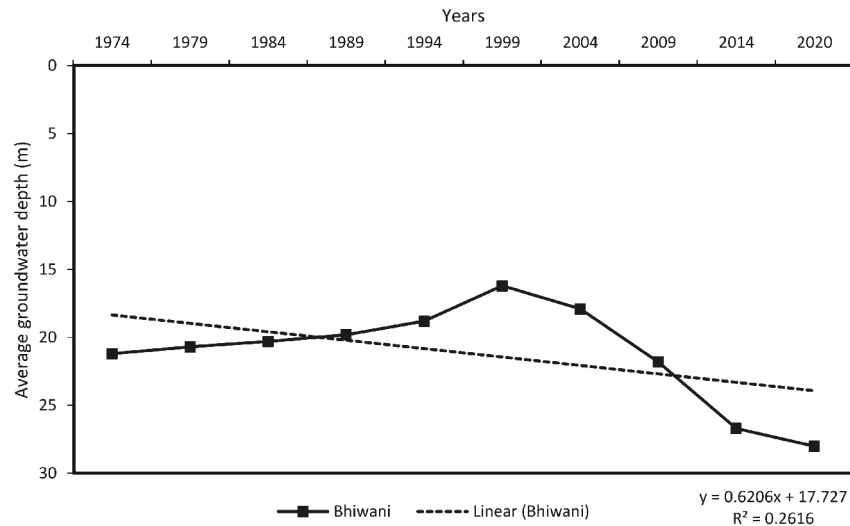
Range of fluctuation (m)	Average fluctuation (m)	Per year fluctuation (m/year)	Area (000 ha)	Percent area	S.D
-84 to -80	- 82	-1.74	0.25	0.08	2.51
-80 to -70	-75	-1.60	0.91	0.28	3.48
-70 to -60	-65	-1.38	1.40	0.42	2.11
-60 to -50	-55	-1.17	5.05	1.53	8.95
-50 to -40	-45	-0.96	8.69	2.64	18.18
-40 to -30	-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

**Figure 10: Average five year interval groundwater depth (m) in Bhiwani district for the study period 1974-2021**

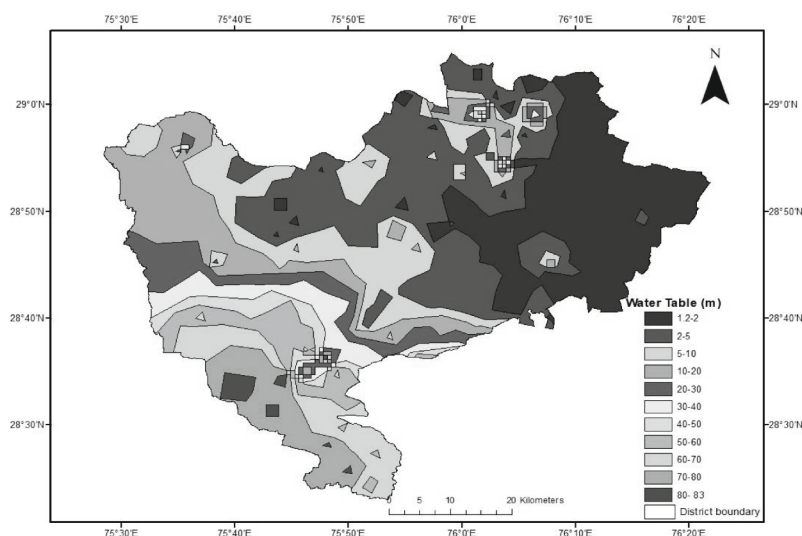


Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

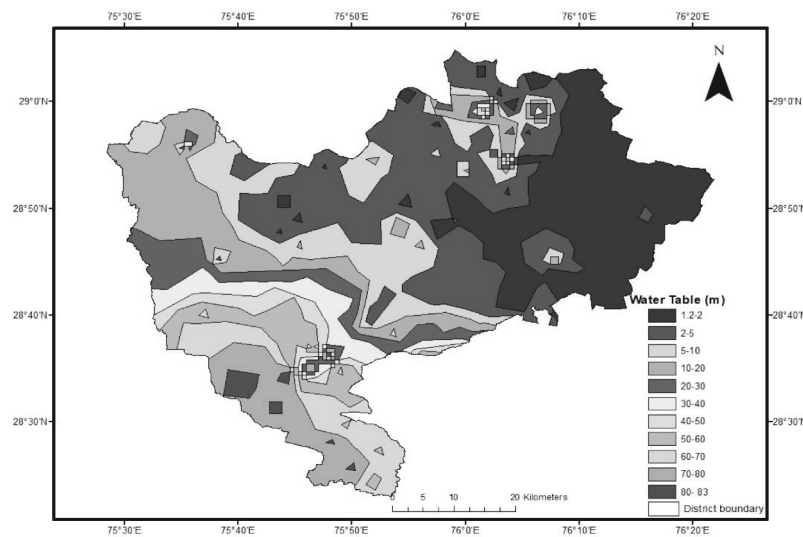
### 4.4 Seasonal Effect on Groundwater Depth

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 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)

**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. 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.

**Table 14: Area (000 ha) under different groundwater depths (m) for the period 1974 to 2021**

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

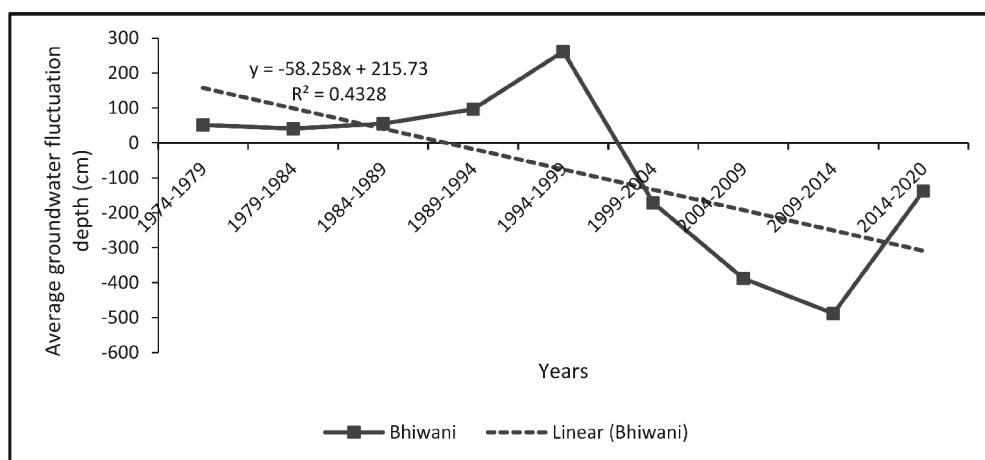
Source: Secondary data obtained from groundwater cell, department of agriculture, Panchkula, Haryana (India)

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

### 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.

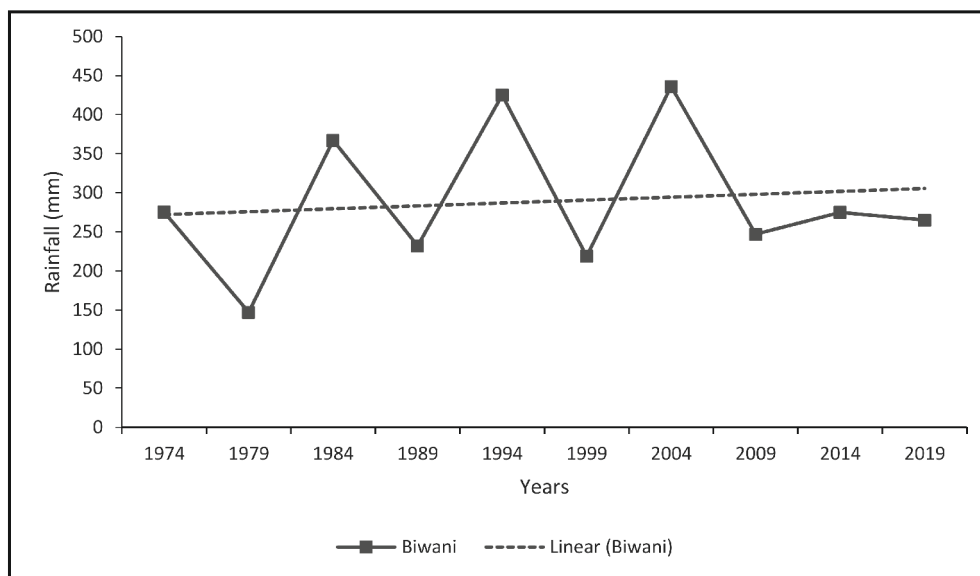
#### (a). Average Annual Rainfall (mm)

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

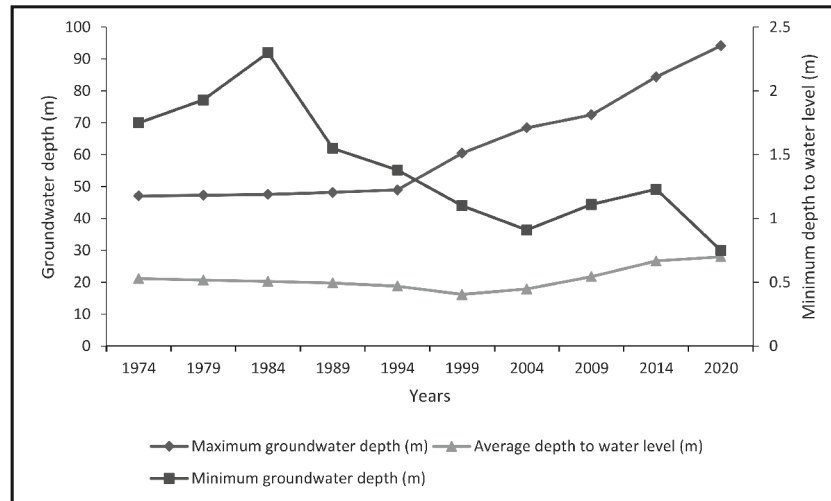
The most conspicuous falling groundwater level trends and patterns with greater negative fluctuations over the study period (1974–2021) are in Bhiwani district (Figs. 10 and 13). Groundwater levels have depends significantly in these regions by affecting most of the water-related activities (especially 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**



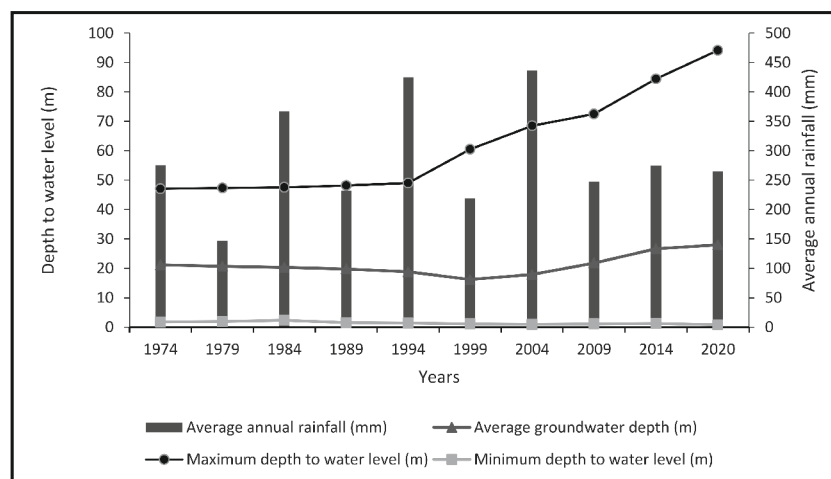
Source: Secondary data obtained from department of Metrological, Chandigarh, Chandigarh(India)

**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)

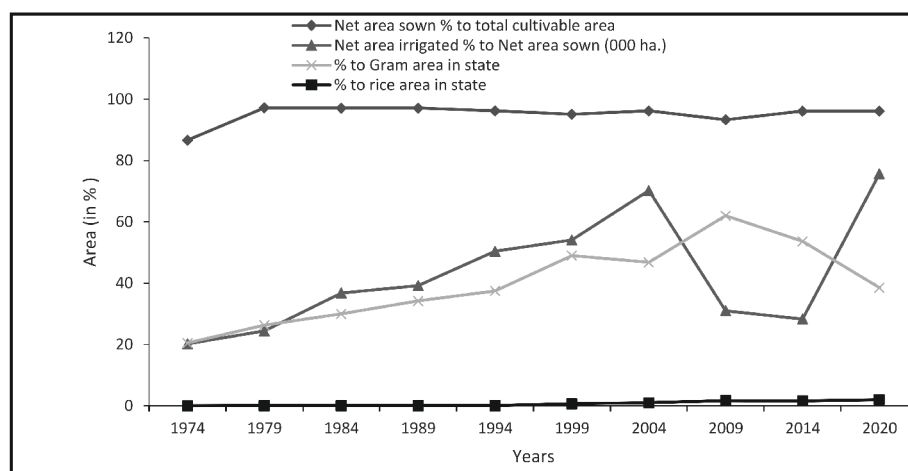
### (c). Impact of cropping pattern on groundwater level

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. 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

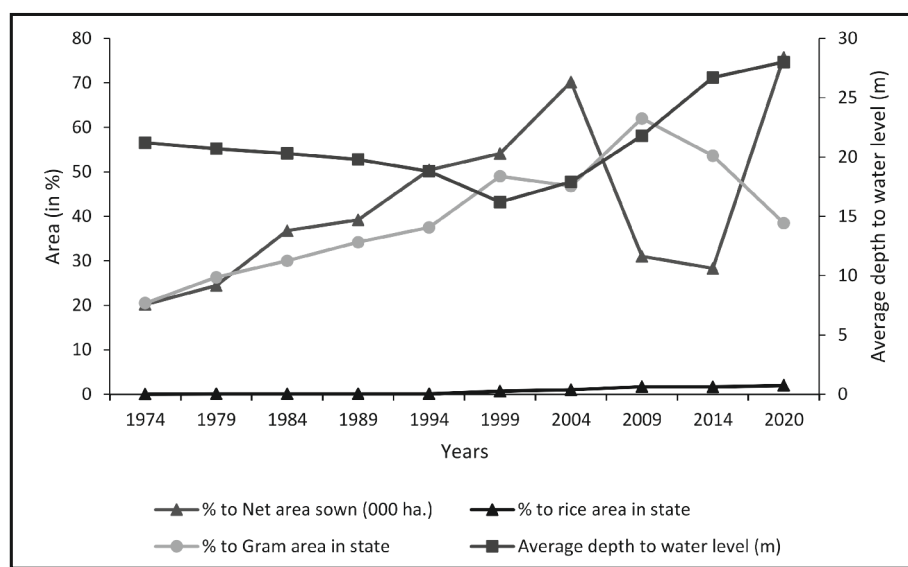
Irrigated area in Bhiwani district has been increased from 89000 ha in year 1974 to 302000 ha in year 2021, which reflects 239.3 % increase in the irrigated area (Fig. 18). As well as percent to net area sown is also increased from 20.2 to 71.3 percent in the study area (Fig. 19). It is already cited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



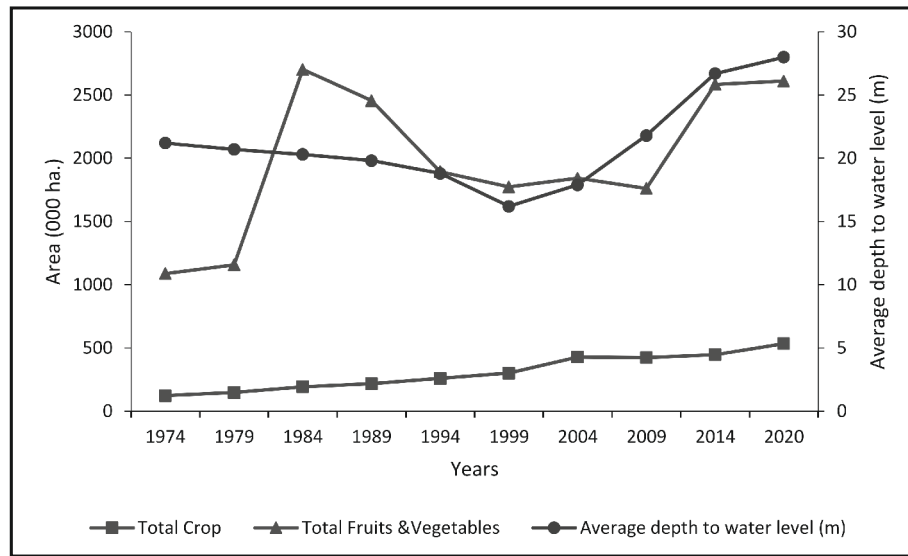
Source: Secondary data obtained from different organizations, department of agriculture, Panchkula, Haryana (India)

**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**



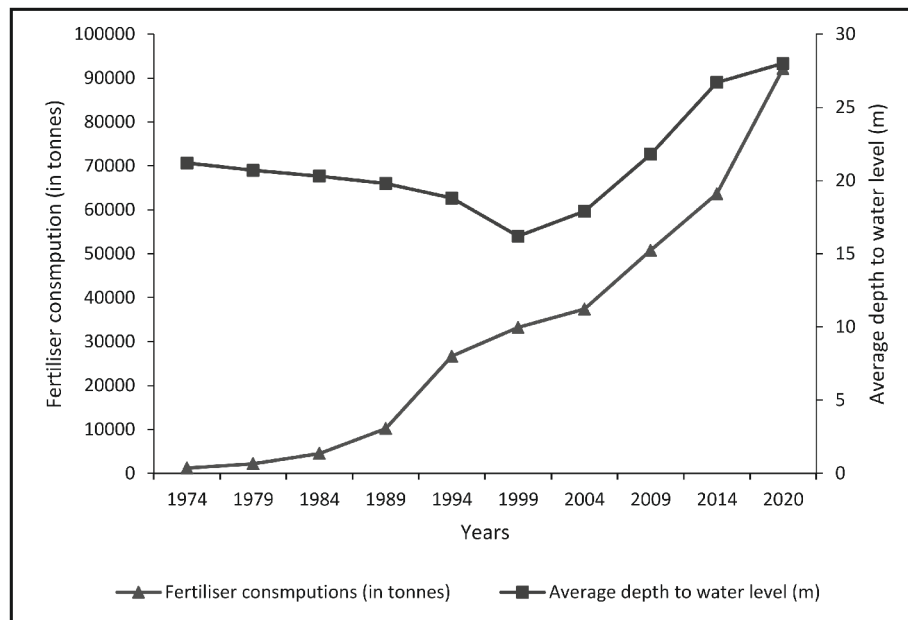
Source: Secondary data obtained from different organizations, department of agriculture, Panchkula, Haryana (India)

**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**



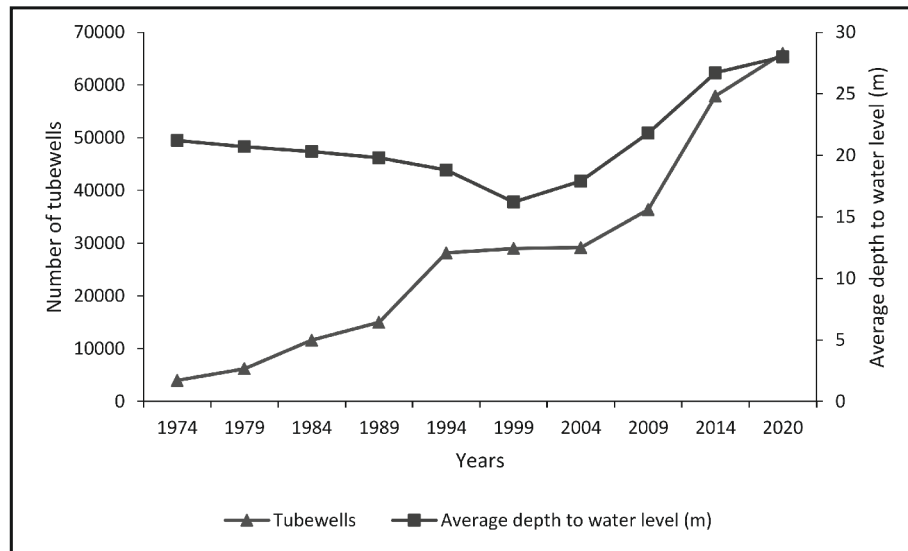
Source: Secondary data obtained from different organizations, department of agriculture, Panchkula, Haryana (India)

**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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# Strategic communication in Tourism Industry

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## Abstract

The travel and tourism industry are critical to the economy and has become highly competitive to attract domestic and foreign tourists. The promotion efforts play a crucial role in attracting the tourists and promoting the places as destination brand. Tourism is an experiential product, and therefore strategic communication plays a vital role in influencing perception and attitude towards tourist destinations. The research paper attempts to analyse some of the significant campaigns and study the new developments in tourism industry in the post-Covid -19 scenario. The paper suggests the strategic communication strategy for the tourism industry.

Key words: Strategic communication, tourism industry, destination brand

## Introduction

India was ranked 34 according to Travel & Tourism Competitiveness Report 2019 by WEF

(World Economic Forum). The contribution of the travel and tourism industry was US\$ 121.9 billion In 2020 and was expected to go to US\$ 512 billion by 2028. The travel and tourism sector's contribution were around 4.7% to India's GDP in 2020. Technological developments have significantly impacted tourism and travel, with portals such as makemytrip.com, Oyo rooms homestays, etc. There is also intense competition and promotion efforts by respective states to woo tourists. The measures would Dramatically boost the economy and provides employment.

Rai, S., & Nayak, J. K. (2019) observed that branding was challenging in the tourism industry and conceptualized the branding model for India. The study had established a relationship among predecessors of commitment, and trust, which can influence brand advocacy.

Hudson, S. (2011) examined the relationship between film production and destination branding. There are opportunities to be tapped and leveraged for mutual benefits of the film and tourism industry.

Dash, P. C., & Samantaray, M. N. (2018) conducted an exploratory analysis to identify tourism experience factors during the Nabakalebara event at Puri, India. The factors identified are escapism, education, esthetics, education, entertainment, esthetics, escapism, and ease of facilities. Ip et al. (2011) explored the use of ICT for strategic and operational areas of management such as marketing, guest services, revenue management, HR, etc.).

Gulati S. (2021) observed that social media plays an effective role in bridging the knowledge gap for sustainability and building awareness and interest among tourists for sustainable tourism. Kaur, A., et al. (2016) conducted image analysis for destination Hill station brands in India and found that natural attraction was perceived as a common attribute while infrastructure merits attention.

## Objectives of the study

1. To study the iconic tourism campaigns in the Indian tourism industry
2. To study the recent advertising efforts taken by the state governments to boost tourism post-Covid -19
3. To study new developments tourism industry and suggest strategies for boosting domestic tourism.

## Iconic campaigns in tourism industry

1. Rajasthan was able to win the hearts of the viewers with the creative TVC with the tag line "Jaane Kya Dikh Jaaye,"

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## **2. Madhya Pradesh: The heart of India**

Madhya Pradesh, Known as heart of India, had delivered creative adverts such as 'Hindustan Ka Dil Dekho' and 'Surang', capturing all the great tourist destinations of the state. (Kanha's tigers, Khajuraho's famous sculptures, Mandu's Jahaz Mahal, Sanchi Stupa, and Ujjain's Mahakal Aarti. Mahakal Aarti.

## **3. Maharashtra Unlimited**

The tourism adv. vividly captures the Western Ghats, calm beaches, and history to surprise and delight the travelers.

The tourists are in awe of Mumbai, the dream city of India.

## **4. Jammu & Kashmir: Where Time Stands Still**

The adv. transfers the visitor or tourist to the new world and captures the pristine glory.

## **5. Gujarat: Khushboo Gujarat Ki**

Amitabh Bachchan, as the endorser, captures the spirit of the state in terms of attractiveness, picturesque sights, etc. One of the famous slogans was 'Breathe in a bit of Gujarat.'

## **6. Devbhoomi Uttarakhand**

The advt made by Wilderness films captures the divinity and pristine beauty of the state.

## **7. Bihar: Kahin Chhut Na Jaaye Chhath**

Chhath puja is a major festival in Bihar, and this ad captures the emotions that one has for home on such occasions. Certainly, it's a unique ad for a unique state to promote tourism.

### **Incredible India campaign (2002)**

The campaign objective was to position India as a sought-after destination choice by highlighting the various aspects of yoga, culture, history, religions, spirituality, tradition, and ecology. Both print and TV media was used for the campaign, which had successfully epitomized the different aspects of India. The inflow of tourists reached 5.38 million and earned forex revenue of \$ 11 747 million in 2008

### **Atithidevo Bhava (2008)**

Tourism experience also rests on the behaviour of the local population towards the tourists. Integrity, etiquette, and responsibility are important. Hence, the campaign Atithidevo Bhava (guests are like gods) while educating the masses about responsible behavior and also for preserving heritage, cleanliness, and hospitality. This would go a long way to instill confidence in the foreign tourists traveling to India and make India a preferred destination in the world.

### **Tourism commination in post Covid -19 Scenario**

Kerala tourism had campaigns such as 'Change of air and travel for good' to boost tourism. 'Change of air' advt removes the inhibitions and negative perceptions towards travel and infected air amid pandemics. The Uttarakhand tourism department had launched the campaign "White Winters" to promote tourism. Winter in Uttarakhand begins in October and ends in March. Kerala Tourism also launched movies: 'Your moment is waiting' in the US, UK, Germany France, which will take the potential tourists to these movies if they type 'travel' in search in their iPad, and iPhone. The 3-minute video can also be shared across social media. It was hit and well received.

## Revenge tourism

Kerala tourism had started a campaign revenge tourism aimed to motivate travelers hitherto not traveled due to covid -19. As an act of revenge, to go to someplace after a prolonged stay at home. Several initiatives such as beach tourism, monsoon tourism, and cruise tourism are on the cards to boost tourism. The revenge travel is evident from air travel data from Jan to Feb 2022. Places like Goa, Hill stations (Manali, Shimla, Ooty,) and pilgrimage places (Shirdi, Tirupati, and Prayagraj are teeming with tourists in 2021. India has a broad tourist season, summer and winter; however, typical places like Srinagar are thronged in winter. The additional air routes for smaller towns. Several travel portals like Cleartrip had announced big travel sales with discounts for flight and hotel bookings (domestic and international).

## Uttarakhand tourism

Uttarakhand tourism has taken several initiatives for promoting remote destinations covering all budgets, from homestays to hotels. Immunity boosting campaigns such as Garwali and Kumaoni cuisines were launched in 2020. New circuit routes for unknown destinations with PPP need to be explored. The newly carved state enjoys distinct advantages, pilgrim circuit (Char Dham), hill stations like Mussoorie and Nainital, adventure sports for river rafting, and eco-tourism spots l (Jim Corbett National Park and Nanda Devi National Park.

## Efforts to boost domestic tourism

With restrictions on international travel, travel portals launched several steps to spur domestic travel. "My India" campaign was launched by MakeMyTrip to nudge travelers to travel to less prominent destinations across the country. Thomas Cook ad launched India Holiday packages with discounts on local travel. The travel experience of Allepy is likened to Venica using social media to reach out to tourists. There is a new phenomenon known as "workcations", enabling work and vacation together because of WFH. OYO Hotels & Homes has launched several films ChalRegistaanJaayoRe, 'Chal Pahad', Chal Beach Chalein' films, to explore different places.

See Table1 for Strategic communication strategy. It explains the strategic communication strategy

**Table 1: Strategic communication strategy**

<b>Post Covid-19 Strategic tourism communication strategies</b>	<b>Communication objectives</b>	<b>Media</b>
Explore events specific to the region and linkages with the film industry in India. Explore weekend gateways, workcations, etc., to boost domestic tourism. Encourage the use of ICT by stakeholders in tourism. Explore unique packages across various types of tourism.	Awareness of the destination brand. Arouse Desire and develop conviction to visit destination brand, and call to action. (Web sitelink, enquiry no, links on social media etc.)	YouTube films, use of social media. Print and Television.
	New short weekend campaigns for Workcations.	
	Emphasize unknown and unexplored areas, tourism eco system ex in terms of stay, travel, food.	

**Conclusion:** Iconic tourism campaigns have highlighted experiential aspects of tourism in respective states. The post covid -19 tourism will be seeing a shift from revenge tourism to destination tourism, highlighting the destination components of the tourism. Tourism campaigns need to balance the communication efforts between safety and trust for the tourists and, at the same time, emphasize the tourism experience. Preferably, the drive needs to include a call to action, website links, etc., which will enable measuring the campaign's effectiveness. Based on seasonality and theme, tourism campaigns are to be designed. There is a need to associate tourists with positive associations and forge relationships that may lead to the advocacy of the destination brand. Events such as festivals specific to the region and time also attract tourists. There is also a need to strengthen tourism infrastructure using the PPP (public-private partnership) model.

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