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# INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY MANAGEMENT STUDIES

## **Aim & Scope**

ZIJMR is a monthly, referred international research journal at par with the top international journals on the subject. The vision of the journal is to bequeath with academic podium to researchers across the globe to publish their original, innovative, pragmatic and high quality research work. The journal aims at academicians, consultants, policy makers, business managers and practitioners to publish research work of multiple disciplines. The journal is committed to promote researchers with superfluity of understanding to engender new ideas, problem solving models, and disseminate the experiential world class research findings for the benefit of academia, industry and policy makers. The journal welcomes manuscript submissions from academicians, scholars, and practitioners for possible publication from all over the world. The below mentioned areas for submission of research papers/articles/case studies are only indicative

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## Contents

| Sr. No. | Articles / Authors Name   | Pg. No. |
|---------|---|---------|
| 1       | FOOD SECURITY IN INDIA - VULNERABILITY, FOOD SURPLUS<br>AND SUPPLY CHAIN<br><i>-Dr. T.SARATHY</i>                           | 1 - 9   |
| 2       | INFORMATION SEEKING BEHAVIOUR OF FARMERS IN<br>KALWAN TALUKA OF NASHIK DISTRICT, MAHARASHTRA<br><i>-Dr. Medha Mangurkar</i> | 10 - 24 |
| 3       | KINSHIP AMONG THE SIBLINGS' IN "CLEAR LIGHT OF DAY" BY<br>ANITA DESAI: A STUDY<br><i>-Tazhaa Nazir</i>                      | 25 - 31 |
| 4       | LEGAL ASPECT OF CORPORATE SOCIAL RESPONSIBILITY<br><i>-Dr Ramesh Kumar Singh</i>  | 32 - 40 |



# FOOD SECURITY IN INDIA - VULNERABILITY, FOOD SURPLUS AND SUPPLY CHAIN

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## **Abstract**

The food security and nutritional status of the most vulnerable population groups in India is likely to deteriorate further. Ensuing global economic crisis have demonstrated that the world is unprepared for food security. The UN's recent report „The State of Food Security and Nutrition in the World 2020“ projected that the Sustainable Development Goal (SDG) of Zero Hunger by 2030 will not be met. India has fight against malnutrition among vulnerable groups like women and children might be lost. People/food industries with surplus food can to feed the people in need at their near vicinity and reducing the food waste. Non-governmental organizations (NGOs) and other civil society organizations have increasingly started to get involved in food security of vulnerable populations in India. NGOs have involved to food security problems by taking increasingly rights-based and participatory methods. This study highlights the activities and services of IFSA Food Recovery Partner around 30 organizations. IFSA is food security model in FSSAI all necessary support and tie up with hotels, caterers and their associations for enhancing the reach and scale of operations. IFSA use common technology platform, mobile app, and dedicated helpline, common dashboard for end to end process, monitoring and review of the same. The experiences from this evaluation study are expected to provide broad guidelines to better understand the role of NGOs and their contributions towards sustainable food security practices in urban and rural areas.

## **Keywords**

Non-governmental organization, Food Surplus, Food Security, Participation Rate, Resource Recovery, SWOT

## **1. Introduction:**

India tops the list as the most undernourished country with 194.6 million hungry citizens. Despite a remarkable progress in the economy, the country has failed to eradicate hunger at the grassroots levels and is home to 15 percent of the world's hungry. What is more shocking than these troubling facts is that the world produces enough food to feed everyone sufficiently but poverty forces so many of them to

sleep on empty stomach by **Nikitha Sattiraju[2016]**. **Fredrik Wikström et.al[2019]** analyses the most important packaging functions that affect food waste in households for different products, as the reason for wastage can be expected to differ between different products. How packaging functions influence food waste on a product level remains largely unexplored. This is despite the fact that there seems to be a high potential to reduce food waste by better aligning packaging functions to users' specific needs and habits. Both the literature study and the expert workshop indicate that less food per packaging and better information about food safety and storage may help to reduce food waste, but also that productspecific considerations are necessary. Household studies that explicitly focus on the relationship between packaging functions and food waste on a product level are needed for further exploring this relationship.

**Brian Lipinski [2013]** examine to approximately one out of every four calories grown to feed people is not ultimately consumed by humans. Food is lost and wasted to a varying extent across the globe, across all stages of the food value chain, and across all types of food. As a result, overall global food availability is lower than it would be otherwise, negatively affecting food security to produce additional food to compensate for the food that is not ultimately consumed by people. Consequently, social security nets for the underprivileged and most vulnerable are needed as part of the immediate and next phase of emergency. This study has highlight the work of a 30 non -profit organizations and foundations, big and small to trying combat from the cruelty hunger of the most vulnerable people in India. **J Gustavsson et.al [2011]** illustrate that distribution of food losses and waste varies between developed and developing countries, and between rich and poor producers and consumers

## **2. Review of Literature:**

The unparalleled measure of food surplus in universal food supply chains is appealing cumulative attention due to its ecological, social and economic impressions. According to the United Nations Food and Agriculture Organization, 820 million people were already undernourished before today's crisis – including 135 million people experiencing acute food insecurity. As incomes fall, we are already hearing reports of people skipping meals. This wave of malnutrition will have long-lasting impacts on human capital, especially for children **Mari ElkaPangestu [2020]**

**Effie Papargyropoulouet.al[2014]** the food waste hierarchy posits that prevention, through minimization of food surplus and avoidable food waste, is the most attractive option. The second most attractive option involves the distribution of food surplus to groups affected by food poverty, followed by the option of converting food waste to animal feed. Although the proposed food waste hierarchy requires a fundamental re-think of the current practices and systems in place, it has the potential to deliver substantial environmental, social and economic benefits. the issue of food waste should be considered earlier within the food supply chain in order to capture and maximize the waste prevention opportunities. Waste management policies should be integrated and aligned with the wider policies on



food, agriculture, food standards, food poverty alleviation and sustainable production and consumption. **The UNICEF report [2019]**, The State of World's Children, 2019, noted that 69% of the deaths of children below the age of five in India is due to malnutrition, and every second child in that age group is affected by some form of malnutrition (stunting, wasting, overweight). The report finds that 35% of the children suffered from stunting, 17% from wasting, and 33% from underweight

**Pawan Agarwal [2017]**, highlighted that food waste and food loss is a global challenge but in India food loss and food waste is quite significant. He brought to notice that while there are a number of food collecting agencies in India, the need of the hour is to integrate all food recovery agencies into a cohesive whole so as to combat food waste more effectively. He stated that "through this initiative, several food collection agencies will be able to work uniformly towards one common goal of saving food and distributing it to the needy so that India is able to eradicate hunger problems as the initiative is an effort to promote food sharing and recovery of surplus food.

**Batra [2018]** agrees one of the biggest hurdles, however, that organisations like Feeding India and Robin Hood Army admit to facing while setting up base is to convince restaurants and people to come onboard. "They (restaurants) weren't sure where the food was going and it took a little bit of convincing and showing them pictures and selfies we took during our drives.

In India, there is this stigma associated with **Jhoothakhaana[2018]** (leftover food) no one wants to donate that," She faced a lot of problems in convincing people to donate food. There were many big corporates that had excess food and yet were reluctant to donate... now, people have become more aware, says **Jain[2018]**.

**Balaji [2017]** said nearly 40% of all our food is wasted,". "Even if we salvage half of this and redirect it to where it is needed, it can create a huge impact on the issue of food waste and food shortage.

**Komal Rau et.al [2015]** summaries in brief the concern of food donation activities and offers a platform that connects donors with NGOs. An idea for avoiding wastage of food, reduction of food wastage and increasing food donation network is presented and impact on society through this medium is made available

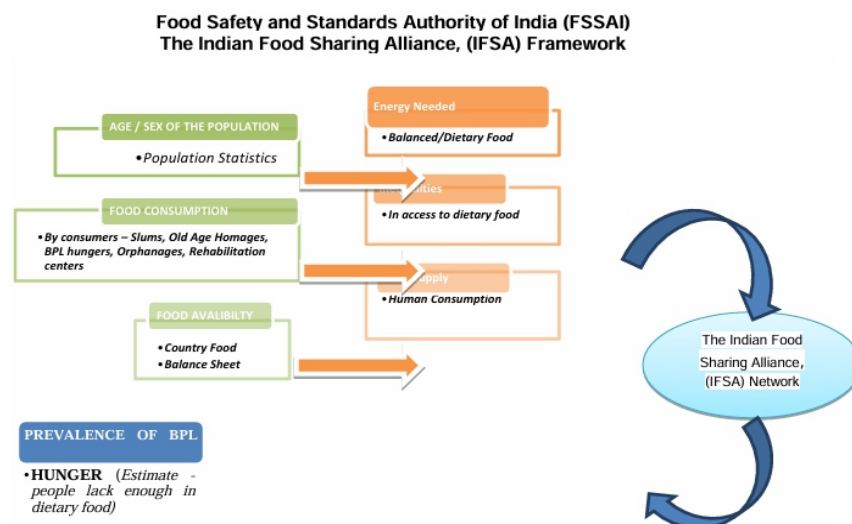
### **3. Impacts on Food Systems:**

Local food systems are fragile in a country like India. About 91 percent of the total workforce is from the informal sector, they include agricultural, migrant, and other workers who entirely depend on daily wages as a mode of living. These vulnerable groups and their families will be the hardest hit during these unprecedented times. Even though the sudden imposition of the countrywide lockdown was a wise move to contain the spread of the coronavirus, local food systems were disrupted. Following the lockdown declaration, temporary workers in cities had to leave to get back to their villages as surviving in the city without regular salaries was implausible. As transportation froze, these people were left with no choice. The home minister immediately advised state governments to ensure ample support including

leave to get back to their villages as surviving in the city without regular salaries was implausible. As transportation froze, these people were left with no choice. The home minister immediately advised state governments to ensure ample support including transportation, food and shelter for migrant workers who were forced to leave. Migrants who were unable to return to their domicile state owing to the countrywide lockdown were given shelters in disaster relief camps with enough food supplies. Food prices skyrocketed across the nation as transportation services were halted and fresh supplies were unavailable. Retailers took advantage of the lockdown situation by imposing exorbitant prices on existing stocks. Black marketers were on the rise that sold essential commodities at an outrageous price. Although food manufactures were exempted from the lockdown, they had to get specific exemption certificates from the authorities to continue production. This led to a further delay, due to bureaucracies that existed in the local and national level. Exploitation of the lockdown situation resulted in the market becoming volatile by selling food items at a higher price. Although the government gave repeated assurance through press conferences regarding food security - on the ground issues were different as mob rushed to stock up essentials. Although India holds a buffer stock of wheat and rice thrice the required norm, palpable effects of food insecurity are observed among the weaker section of the society. India's food supply chain (FSC) will undoubtedly be put through a stress test during this pandemic situation.

#### 4. Methodology

This study investigates Indian food surplus and food waste to tackle role of Non-Governmental Organizations and foundations to registered IFSA under FSSAI involving the food surplus supply chain to support vulnerable population by using SWTO analysis. IFSA brings together Citizens, Food Businesses, Corporates, Civil Society Organizations, Volunteers, Government and Local Bodies in a coordinated manner to prevent food being lost or wasted throughout the supply chain, from initial production down to final household consumption.



#### 4.1 Study Area -IFSA partnered Food recovery organisations

The Nongovernmental organization involved reduces food waste through donation and redistribution. The Indian Food Sharing Alliance, (IFSA) [2017] is a social initiative by the Food Safety and Standards Authority of India (FSSAI) to help solve India's food waste and hunger crisis by integrating various partner organizations, Food Recovery Agencies and NGO's. The initiative has been introduced with the aim of promoting the idea of food sharing among citizens and food businesses. This initiative is also aimed at forming a coalition of food collection partners who fight the issue of hunger in the needy and in this way prevent food loss and food waste in the country.

1. Gautam Gambhir Foundation (GGF)

2. Aashray Adhikar Abhiyan

3. All India Roti Bank Trust

4. Annakshetra

5. Delhi Langar Seva Society

6. Double Roti

7. Feeding India

8. Feed The Need Foundation

9. Feed The Poor Campaign

10. Food Security Foundation India

- India Food Banking Network

11. Food Bank – India

12. Giveaway India

13. Glow Tide Society Development

14. Help Foundation

15. Helping India, Feeding India

16. Jeevadayini Foundation

17. Jeewan Hi Udeshya

18. Little India Foundation

19. MCKS Food for the Hungry

20. Mera Parivar

21. No Food Waste

22. Rasoi on Wheels

23. Respondent Development Services

24. Rise Against Hunger India

25. Robinhood Army

26. Roti Bank (Delhi based)



27. Roti Ghar (Khushiyan Foundation)
28. SAB Ki Rasoi
29. Society For The Promotion of Youth And Masses
30. Vijay Sri Foundation (Prasadam Sewa)

## 4.2 SWTO Analysis

SWOT analysis is a technique used to analyse the strengths, weaknesses, opportunities and threats of businesses. As such, SWOT analysis is used to identify strategies for role of NGOs in food security. Especially donation and redistribution and they help the NGO to manage and prioritize them for achieving food security.

### Indian Food Sharing Alliance (IFSA)-SWOT ANALYSIS



## 5. Result and Discussion

IFSA is a platform by Food safety and Standards Authority of India (FSSAI) to promote the NGOs to participate in food security. Especially donation and redistribution and they help the NGO to manage and prioritize them for achieving food security. Surplus food is picked up from the food donors and packed in clean and covered containers. Surplus food is stored and transported in appropriate hygienic condition at appropriate optimum temperature suitable for perishable and non-perishable food separately. Transporting vehicle is cleaned on a regular basis and not for purposes other than delivering food. This food is distributed or served to the needy before the expiry. Spoiled food is avoided at any case and



preferably diverted to identify composting units and bio-gas plants which is an alternative solution to handle the waste food. This ensures that effective food waste management and sees that it doesn't reach dustbin or landfills. NGO staff and volunteers are oriented with personal hygiene and sanitation practices for maintaining hygiene standards while handling food. The database is maintained in which the details of surplus food viz. details of donor, hunger spots, donation date, food item, food quantity, date of distribution are recorded. This project aims to provide food 2 Lakh meals per month to the hungry people and will save nearly 100 tons of food. Addressing nutritional security, especially of those groups that are highly vulnerable to malnutrition, is an important priority for India. Food surplus and food waste can definitely play a key role – if they are included in mainstream nutrition programmes, especially those focussing on nutrition sensitive in food supply chain. The following functions come under the IFSA platform:

- Help regional NGO head or coordinators organize their incoming leads
- Let food donors alert an NGO when excess food is available.
- NGOs to alert volunteers and transport crew on food collections
- Forms and methodologies to help volunteers assess the quality of the food received
- Help co-ordinate various team to different hunger zone on the Pan India map based on need and priority.
- Will also be used to schedule regular food pickups, delivery and track this processes from registered food suppliers.

## 6. Conclusion

**Deborah Cohen[2005]** Food security is a complex problem. Patching up the problem with goodwill isolated interventions without consulting the local community is prone to failure. A coordinated, multistranded approach is needed involving organisations from different sectors. The Indian Food Sharing Alliance, (IFSA) approach serves to stay away from crevice between the Ngo and Donor. This approach serves to give the sustenance waste to the penniless individuals who are battling for nourishment. The approach unite these two, in such a route, to the point that these NGOs can persuade the "nourishment to be squandered" without bother, and the inns/eateries/party-lobbies discover these sustenance seekers with no additional exertion then it will serve a more noteworthy cause and will be an enormous administration to mankind. Ultimately, improving food security will help governments achieve the millennium development goals. Not only will it help to eradicate hunger, it will help to reduce child mortality and improve maternal health. But, most importantly, it will help to break the cycle of poverty. This will mean we are putting food in people's pockets so they don't go hungry, and making sure food keeps moving and zero food waste.

## 7. Reference:

1. Nikitha Sattiraju [2016], "These NGOs have made a difference in lives of thousands by giving them a good meal". <https://yourstory.com/2016/10/world-food-day-ngos>
2. Fredrik Wikström, Helén Williams, Jakob Trischler, Zane Rowe [2019], "The Importance of Packaging Functions for Food Waste of Different Products in Households", *Sustainability* 2019, 11, 2641
3. Brian Lipinski [2013], "Instalment 2 of "Creating a Sustainable Food Future" Reducing Food Loss and Waste", *Working Paper* | 1 -40
4. J Gustavsson, C Cederberg, U Sonesson [2011], "Global food losses and food waste", *Extent, Causes and Prevention Rome*.
5. Mari Elka Pangestu [2020], "Hunger amid plenty: How to reduce the impact of COVID 19 on the world"s most vulnerable people", <https://blogs.worldbank.org/voices/hunger-amid-plenty-how-reduce-impact-covid-19-worlds-most-vulnerable-people>.
6. . Effie Papargyropoulou . Rodrigo Lozano b , Julia K. Steinberger c , Nigel Wright d , Zaini bin Ujang [2014], "The food waste hierarchy as a framework for the management of food surplus and food waste", *Journal of Cleaner Production, Journal of Cleaner Production*, 1-10.
7. The UNICEF report [2019], "The State of the World's Children 2019 -Children, food and nutrition", <https://data.unicef.org/resources/state-of-the-worlds-children-2019/>
8. Pawan Agarwal [2017], " FSSAI Introduces „Save Food, Share Food, Share Joy" Initiative ", <https://foodsafetyhelpline.com/fssai-introduces-save-food-share-food-share-joy-initiative/>
9. Batra [2018], "Say not to food dumping! A look at the organisations working to ensure zero food wastage in India", <https://www.financialexpress.com/india-news/say-not-to-food-dumping-a-look-at-the-organisations-working-to-ensure-zero-food-wastage-in-india/1422330/>
10. Garnett and Wilkes [2014], "Appetite for change: social, economic and environmental transformations in China's food system", <https://www.fcrrn.org.uk/fcrn/publications/appetite-for-change>
11. Jain [2018], "Say not to food dumping! A look at the organisations working to ensure zero food wastage in India", <https://www.financialexpress.com/india-news/say-not-to-food-dumping-a-look-at-the-organisations-working-to-ensure-zero-food-wastage-in-india/1422330/>
12. Balaji [2017], "An Indian NGO"s unique idea to curb food wastage: Taking from the wedding and giving to the poor", <https://scroll.in/magazine/828950/an-indian-ngos>

*unique-idea-to-curb-food-wastage-taking-from-the-wedding-and-giving-to-the-poor*

13. Komal Raut, Nimesh Shah, Akash Thorat [2015], “ Food donation portal”

<http://ijarcet.org/wpcontent/uploads/IJARCET-VOL-5- ISSUE-4-906-908.pdf>

14. The Indian Food Sharing Alliance[2017], “Save Food, Share Food, Share Joy” Initiative”

, Food Safety and Standards Authority of India,

<https://sharefood.fssai.gov.in/partner.html>.

15. Deborah Cohen [2005], “Achieving food security in vulnerable populations”, *BMJ.*, 331(7519): 775–777.

# INFORMATION SEEKING BEHAVIOUR OF FARMERS IN KALWAN TALUKA OF NASHIK DISTRICT, MAHARASHTRA

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## **ABSTRACT**

This study explores the information-seeking behavior of farmers in Kalwan talulka of Nashik district in the state of Maharashtra. A survey of 250 randomly selected farmers was conducted using structured questionnaire. The results show that the majority of farmers belonged to 35-46 age group, had completed intermediate education, holded 1-3 acre land and with an annual income of 1-3 lakh. The farmers mostly grew cereals, pulses and vegetables. The farmers seasonally seek agricultural information. Neighbors, extension workers, television channels, social media platforms such as You tube and Whats app were the preferred sources of agricultural information. The challenges faced by them included lack of awareness about agricultural sources, government schemes, irregular contact sessions with extension workers, and network issues. The authors recommended that a library and information centre should be established that will assist the farmers in finding pin-pointed information both in online and offline mode.

**Keywords:** farmers, information seeking behaviour, agriculture information sources, challenges, Kalwan taluka, Nasik.

## **Introduction**

The agricultural information plays an important role in the life of farmers. The information is disseminated to farmers through different channels of information such as family, friends, government officers, mass media sources i.e. television, radio, newspapers, social media and now artificial intelligence. Farmers need information on various topics viz. crop management, pest management, market trends, financial sources, weather forecast etc. The farmers are empowered by providing them right information in the right form and at right time that will help them in making informed choices can influence their productivity and decision-making capabilities. By investigating the information seeking behaviour of farmers, the study try to highlight the barriers voices and perspectives. Understanding how farmers seek information and what barriers they encounter is essential to develop resources and programs tailored to their needs. The outcomes of the study may provide necessary insights that can lead to empowerment initiatives, helping farmers become more self-sufficient and confident in their decision-making processes. Effective communication is vital for sharing information in agriculture. With an aim to understand the information seeking behaviour of farmers residing in Kalwan taluka, Nasik district of the state of Maharashtra, India, the authors conducted a survey.



Maharashtra, one of India's most agriculturally significant states, has made progress in modernizing its farming sector while maintaining its rich agricultural traditions. Despite challenges such as uneven rainfall and drought-prone regions, Maharashtra has successfully diversified its agricultural base, adopted modern technology, promoted sustainable farming practices, and strengthened its cooperative movement. These developments have significantly enhanced productivity, increased farmers' incomes, and boosted agriculture's overall contribution to the state's economy.

With a total cultivable area of approximately 17.43 million hectares, Maharashtra continues to lead in the production of grapes, oranges, bananas, sugarcane, cotton, jowar (sorghum), and oilseeds. The state government, along with various agricultural institutions, has introduced innovative irrigation projects, organic farming initiatives, and market reforms to make agriculture more resilient and profitable for farmers.

Nashik district, located in Maharashtra India has a total cultivable area of approximately 64,000 hectares. The district's cropping pattern includes food grains such as rice bajra, jowar, wheat, and maize. Nashik is known as Wine capital of India. The district also plays a significant role in onion production. There are fifteen talukas and four subdivisions in Nashik district. Kalwan taluka falls under Kalwan subdivision. Kalwan Taluka is nestled in the Sahyadri mountain range and is home to a 100% tribal population. The region features a hilly terrain and shares its western boundary with Gujarat. The primary occupation here is farming, supported by rivers such as the Girna, Kurad, Behadi, and Tambli, which contribute to the land's fertility. Major dams in the area include Chanakapur and Purad Bhegu. Key crops cultivated in Kalwan include finger millet (nagali), rice, maize, onion, and wheat, along with various vegetables. Besides agriculture, people are also engaged in fishing, handicrafts, trade, and animal husbandry to earn a livelihood.

#### **OBJECTIVES:**

1. To find out the socio-economic status of farmers in Kalwan taluka of Nashik district.
2. To find out the channels and sources of information used by farmers.
3. To identify the information needs of the farmers community in the rural areas of Kalwan taluka.
4. To find out major problems encountered by the farmers when accessing and using information.
5. To understand the farmer's expectations from libraries.

#### **SCOPE:**

There are 152 villages in Kalwan taluka and 86 Gram Panchayats. For the present study, the researcher selected one gram panchayat which includes two villages. They are as follows:-

1. Sakore & 2. Sakorepada

#### **RESEARCH METHODOLOGY:**

The present study was an exploratory one on the Information-seeking behaviour of farmers in Kalwan Taluka of Nashik District. As it was an exploratory study, the required data were collected using a

questionnaire. The study area consisted of two villages, namely Sakore and Sakorepada, from Sakore Grampanchayat of Kalwan Taluka.

There were a total of 250 farmers in the above two villages, with 90 farmers in Sakore and 160 farmers in Sakorepada. From each of these villages, 40 and 70 farmers, respectively, were randomly selected for the study. Thus, a total of 110 farmers were randomly selected from the two villages for the survey. The collected data were analyzed, tabulated, and graphically presented in the form of charts.

### **LITERATURE REVIEW:**

In order to get an insight of the research topic the researcher browsed and studied number of documents on information seeking behavior of farmers rural farmers, tribal farmers, progressive farmers etc. At the time of searching literature different keywords were used such as Information need. Information seeking behavior, Information sources, Agriculture development crop production, crop cultivation, search behaviors of farmers, Information dissemination.

A literature search has been conducted with the help of several keywords i.e. Information seeking, Information needs, Agriculture information sources, Kalwan taluka Nashik, Agriculture, Farmers.

#### **Information needs, Information seeking behavior of farmers:**

Yousuf et al. (2023) investigated in their study to assess the information needs of apple growers in the Baramulla district of Jammu and Kashmir. The research highlighted the increasing challenges posed by diseases and pests in apple cultivation. The authors emphasized that providing updated and relevant information is crucial for enhancing production & productivity in the face of these challenges. They identified key areas where apple growers require information including plant protection measures, new agriculture techniques, government schemes, and post-harvest practices. The study utilized a structured interview schedule and statistical analysis to gather data from 300 apple growers, revealing that factor such as land holding and access to information sources significantly influenced their information needs.

The findings suggest that extension services can play a vital role in bridging the information gap and empowering farmers through training & awareness programmes overall, this research underscores the importance of tailored information dissemination to support sustainable apple farming in the region.

Singh et. al. (2024) undertook a study on the agricultural information needs of farmers in Uttar Pradesh, focusing on the m-kisan services initiated by the government of India in 2013. The study revealed that farmers have significant information deficiencies across various agricultural practices, particularly in sowing operations which had the highest information followed by pre- sowing activities and post-sowing activities. The research highlighted that farmers required information on high-yielding varieties, seed availability and soil nutrient deficiencies based on Soil testing. Notably, the study found variations in information needs across different agroclimatic zones, with the North Eastern plain zone and Bundelkhand zone exhibiting the highest deficiencies. The authors emphasized the need for targeted

advisory services to address these gaps, particularly in less productive regions. Overall, the findings underscore the importance of understanding farmers information needs to enhance agricultural productivity and support sustainable farming practices in Uttar Pradesh.

#### **Information sources used by farmers:**

Panda et. al. (2022) carried out study in Uttar-Pradesh that aimed to assess the information source utilization patterns among livestock & poultry farmers. A total of 120 farmers, comprising 40 from each sector (dairy, piggery and poultry) were selected randomly for the research. The methodology involved semi-structured personal interviews and online surveys via Google forms. The findings revealed that the majority of respondents exhibited medium levels of information source utilization with information and communication technology (ICT) being the most utilized source, followed by mass media and extension agency contact significant Contributors to information source utilization included education, land holding, and experience in farming, while age showed a negative correlation. The study suggests that enhancing ICT platforms could improve the dissemination of quality information and Knowledge to farmers, emphasizing the need for education and training in effectively using these tools for better management practices. Yalakonda and Chandrasekaran (2023) investigated the credibility of information sources and channels as perceived by paddy farmers in Telangana State. It aimed to understand the transformation of farmer's information needs from demand-driven to need based, conducted in four villages of Khammam district. The research utilized a structured interview method for data collection from 120 randomly selected farmers. The findings revealed that opinion leaders, progressive Farmers, and agriculture scientists were perceived as highly credible sources, while television was rated as a credible channel. Approximately one-third of respondents exhibited high overall credibility. The study suggested that extension agents should enhance dissemination processes through credible sources and channels identified, which could improve agricultural technology adoptions and farmer productivity.

#### **Input of ICT in agriculture:**

Bansal et. al. (2022) identified the farmer's awareness and use of different ICT tools of Gudli village of Mavli block in Udaipur district, Rajasthan, India. The primary aim of the research was to assess know awareness and use of different ICT tools by farmers, particularly focusing on mobile phones. The research methodology involved collecting data from 100 farmers using participatory rural appraisal techniques supplemented by questionnaire - based interviews. The findings revealed that 100% respondents owned mobile phones, with 64% utilizing internet facilities. However, only 20% possessed personal computers or laptops. The authors suggested that "future plan of conducting such study would be to develop different apps for agriculture to increase production and productivity of crops. Madhushekar et. al. (2023) investigated a study in twelve villages across Bhuvanagiri and Jangaon districts of Telangana, India, with the aim of analysing farmer's perceptions and usage of social media in

agriculture utilizing an ex-post facto research design. The researchers employed purposive and random sampling technique to collect data from 120 respondents through structured interviews. The findings revealed that 84.16% of farmers utilized mobile phones and social media platforms, with YouTube being the most preferred (67.50%) for agriculture information, while WhatsApp was the correlation between social media use and factors such as education, farm size, and annual income, but noted a negative correlation with age and farming experience the authors suggest enhancing agriculture extension services through the effective use of social media to facilitate better information dissemination to farmers.

### The future of farming: Using AI (Artificial Intelligence)

Ghate and Kulkarni (2024) aimed to evaluate the effectiveness of an AI-based pest management advisory system integrated with integrated pest Management (IPM) strategies for cotton farmers in India, specifically in the states of Karnataka and Maharashtra. The research utilized a smartphone application named "cottonace", which enabled farmers to monitor pest populations through pheromone traps and receive timely pesticide spray advisories. Data was collected through weekly monitoring of traps by lead farmers, who documented insect's counts and communicated findings via the app. The results indicated a significant reduction in pest attacks and a potential income increase up to 22% during the 2021-22 season. However the subsequent multistate experiment in 2021-22 showed no significant benefits due to unusually high rainfall, which led to lower pest populations. The study suggest that while AI can enhance

pest Management and reduce environmental pollution, a cautious approach is necessary to address labor displacement and the effectiveness or competing technologies, such as mating disruption methods and mechanical IPM advisories.

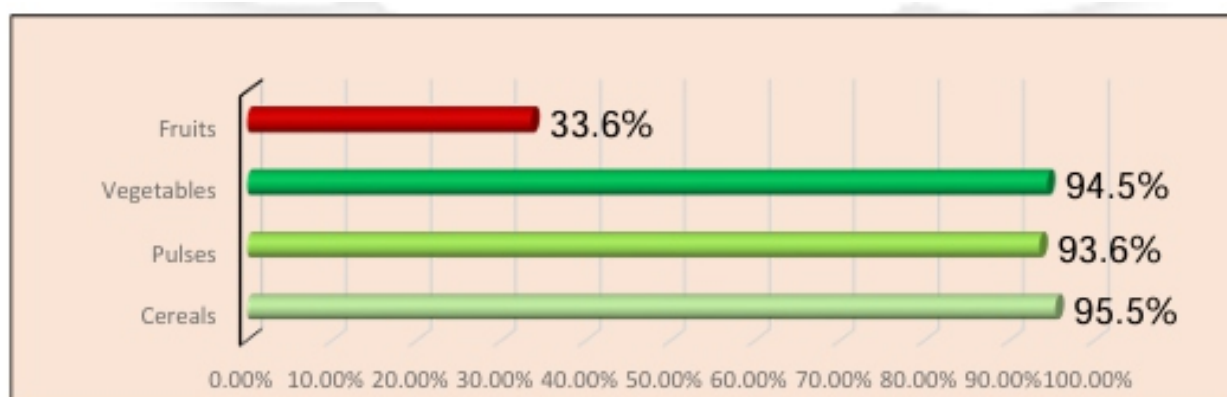
**Table 1 Demographic Information**

| Age Group        |                    | Frequency & Percentage |
|------------------|--------------------|------------------------|
|                  | Years              |                        |
|                  | 15-25              | 6 (5.5%)               |
|                  | 26-35              | 34(30.9%)              |
|                  | 35-46              | 37(33.6%)              |
|                  | 46-55              | 21(19.1%)              |
|                  | 56- Above          | 12(10.9%)              |
| Landholding size | Below 1 acre       | 12(10.9%)              |
|                  | 1-2 acres          | 25(22.7%)              |
|                  | 2-5 acres          | 47(42.7%)              |
|                  | 5-10 acres         | 20(18.2%)              |
|                  | 10 acres more      | 6(5.5%)                |
| Annual Income    | Income             |                        |
|                  | Upto Rs. 50,000    | 18(16.4%)              |
|                  | Rs.50,000 – 1 lakh | 21(19.1%)              |
|                  | Rs. 1 – 3 lakhs    | 30(27.3%)              |
|                  | Rs. 3 – 5 lakhs    | 26(23.6%)              |

|                    |                    |            |
|--------------------|--------------------|------------|
|                    | Above Rs. 5 lakhs  | 15(13.6%)  |
| Primary occupation | Occupation         |            |
|                    | Farming            | 90(81.8%)  |
|                    | Labor              | 2(1.8%)    |
|                    | Farming business + | 6(5.5%)    |
|                    | Other              | 12(10.9%)  |
| Language known     | Language           |            |
|                    | Marathi            | 110 (100%) |
|                    | Hindi              | 94(85.5%)  |
|                    | English            | 22(20%)    |

The data from Table 1 reveals that most farmers (34%) are aged between 35 to 46 years, followed by 31% in the 26 to 35 age group, indicating that farming is mainly done by middle-aged individuals. Regarding the education, the data shows that most farmers are educated up to the 10th and 12th standards, each accounting for 30% of the respondents. The majority of farmers (43%) have landholdings between 2 to 5 acres, followed by 23% who own 1 to 2 acres. About 18% have 5 to 10 acres, while only 11% own less than 1 acre. Most farmers (27.3%) earn between Rs. 1 to 3 lakhs annually, followed by 23.6% who earn Rs. 3 to 5 lakhs. About 19.1% fall in the Rs. 50,000 to 1 lakh range, while 16.4% earn less than Rs. 50,000. Only 13.6% of farmers have an annual income above Rs. 5 lakhs, indicating that the majority have moderate income levels. The majority of farmers (81.8%) are fully engaged in farming as their main occupation.

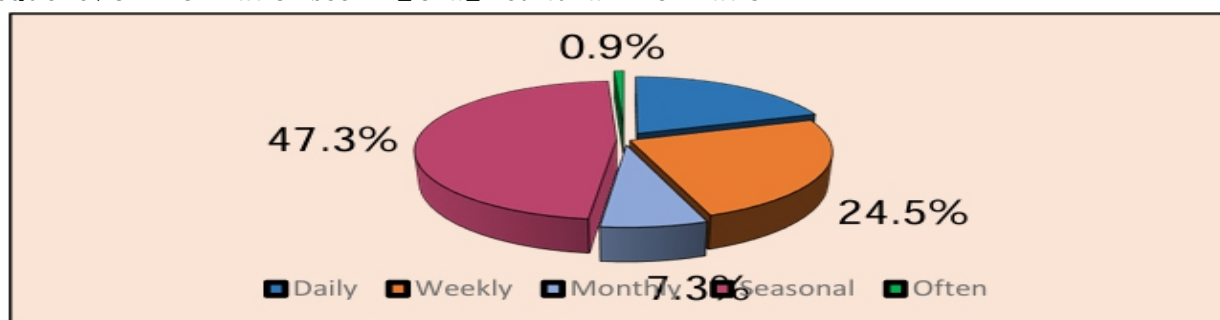
#### Farmers primarily growing this crops



**Fig. 1 Crops grown by farmers**

Fig. 1 reveals that most farmers grow cereals 95.5%, pulses 93.6%, and vegetables 94.5%, indicating a strong focus on essential food crops. Only 37 farmers grow fruits, which means fruit cultivation is much less common compared to other crops.

#### Frequency of information seeking of agricultural information



**Fig. 2 Frequency of information seeking**

The majority of farmers (47.3%) seek agricultural information seasonally, which indicates they look for updates mainly during key farming periods.



**Table 2 Agricultural information sources of the farmers**

| Source              | Always [n] (%) | Sometimes [n] (%) | Never [n] (%) | Total [n] (%) |
|---------------------|----------------|-------------------|---------------|---------------|
| <b>Personal</b>     |                |                   |               |               |
| Friends             | 33 (30%)       | 75 (68.18%)       | 2 (1.82%)     | 110 (100%)    |
| Relatives           | 44 (40%)       | 65 (59.09%)       | 1 (0.91%)     | 110 (100%)    |
| Neighbours          | 16 (14.55%)    | 85 (77.27%)       | 9 (8.18%)     | 110 (100%)    |
| Other               | 5 (4.55%)      | 28 (25.45%)       | 77 (70%)      | 110 (100%)    |
| <b>Formal</b>       |                |                   |               |               |
| Gram Sevak          | 15 (13.64%)    | 50 (45.45%)       | 45 (40.91%)   | 110 (100%)    |
| Gram Panchayat      | 20 (18.18%)    | 30 (27.27%)       | 60 (54.55%)   | 110 (100%)    |
| Agriculture Officer | 12 (10.91%)    | 12 (10.91%)       | 86 (78.18%)   | 110 (100%)    |
| Extension Worker    | 15 (13.64%)    | 65 (59.09%)       | 30 (27.27%)   | 110 (100%)    |
| <b>Informal</b>     |                |                   |               |               |
| Radio               | 6 (5%)         | 2 (2%)            | 102 (93%)     | 110 (100%)    |
| Television          | 39 (35%)       | 66 (60%)          | 5 (5%)        | 110 (100%)    |
| Newspaper           | 15 (14%)       | 45 (41%)          | 50 (45%)      | 110 (100%)    |
| Agriculture Website | 10 (9%)        | 15 (14%)          | 85 (77%)      | 110 (100%)    |
| Apps for Farming    | 11 (10%)       | 20 (18%)          | 79 (72%)      | 110 (100%)    |
| YouTube             | 40 (36%)       | 55 (50%)          | 15 (14%)      | 110 (100%)    |
| WhatsApp            | 39 (35%)       | 55 (50%)          | 16 (15%)      | 110 (100%)    |
| Facebook            | 10 (9%)        | 22 (20%)          | 78 (71%)      | 110 (100%)    |
| <b>TV Channel</b>   |                |                   |               |               |
| Saam TV             | 15 (13.64%)    | 72 (65.45%)       | 23 (20.91%)   | 110(100%)     |
| DD Sahyadri         | 22 (20%)       | 83 (75.45%)       | 5 (4.55%)     | 110(100%)     |
| ABP Majha           | 20 (18.18%)    | 82 (74.55%)       | 8 (7.27%)     | 110(100%)     |
| Zee 24 Taas         | 18 (16.36%)    | 80 (72.73%)       | 12 (10.91%)   | 110(100%)     |
| DD Kisan            | 17 (15.45%)    | 76 (69.09%)       | 17 (15.45%)   | 110(100%)     |
| Doordarshan         | 23 (20.91%)    | 78 (70.91%)       | 9 (8.18%)     | 110(100%)     |
| Krishi Darshan      | 19 (17.27%)    | 72 (65.45%)       | 19 (17.27%)   | 110(100%)     |
| Kisan TV            | 8 (7.27%)      | 48 (43.64%)       | 54 (49.09%)   | 110(100%)     |
| Other               | 5 (4.55%)      | 3 (2.73%)         | 102 (92.73%)  | 110(100%)     |

| Newspaper         |             |             |             |            |
|-------------------|-------------|-------------|-------------|------------|
| Deshdoot          | 5 (4.55%)   | 10 (9.09%)  | 95 (86.36%) | 110 (100%) |
| Sakal             | 10 (9.09%)  | 20 (18.18%) | 80 (72.73%) | 110 (100%) |
| Lokmat            | 15 (13.64%) | 40 (36.36%) | 55 (50.00%) | 110 (100%) |
| Loksatta          | 10 (9.09%)  | 10 (9.09%)  | 90 (81.82%) | 110 (100%) |
| Pudhari           | 10 (9.09%)  | 10 (9.09%)  | 90 (81.82%) | 110 (100%) |
| Gavakari          | 15 (13.64%) | 30 (27.27%) | 65 (59.09%) | 110 (100%) |
| Maharashtra Times | 10 (9.09%)  | 10 (9.09%)  | 90 (81.82%) | 110 (100%) |
| Prahar            | 5 (4.55%)   | 10 (9.09%)  | 95 (86.36%) | 110 (100%) |
| Punya Nagari      | 10 (9.09%)  | 25 (22.73%) | 75 (68.18%) | 110 (100%) |
| Other             | 5 (4.55%)   | 10 (9.09%)  | 95 (86.36%) | 110 (100%) |

Table 2 shows the usage of different information sources viz. personal, formal, informal, TV channels, and newspapers. Most of the farmers said they sometimes get agricultural information from neighbours (77.27%), followed by relatives (59.09%) and friends (68.18%). Some farmers also get information from other sources like local Shopkeepers (25.45%), but this group is smaller. This shows that informal personal contacts — especially friends, relatives, and neighbours — play an important role in how farmers gather agricultural knowledge. Among the formal personal sources, Extension Workers received the most positive feedback, with 59.09% of respondents stating they "sometimes" rely on them. Similarly, Gram Sevaks also showed a notable level of positive response, with 45.45% of respondents indicating "sometimes". A majority of farmers never receive help from Agriculture Officers (78.18%) and Gram Panchayats (54.55%), which highlights a significant gap in the support system. Among the informal sources, television emerged as the most positively received source of agricultural information, 60% stating they use it "sometimes." YouTube and WhatsApp also demonstrated strong engagement, each with 50% of respondents using them "sometimes". The data indicates that DD Sahyadri is the most commonly used TV channel for receiving agricultural information, with 75.45% of respondents using it sometimes. Similarly, ABP Majha and Zee 24 Taas are also popular, with 74.55% and 72.73% of respondents using them sometimes, respectively. Doordarshan also shows a strong reach, with 70.91% using it sometimes. In other option some farmers rely on ETV marathi, TV9 marathi for receiving agriculture information. Overall, most respondents rely on mainstream channels like DD Sahyadri, ABP Majha, and Zee 24 Taas for agricultural updates.

Among the newspapers, Lokmat has the highest usage, 36.36% using it sometimes. Gavakari follows with 27.27% using it sometime. Punya Nagari has 22.73% using it sometimes, showing a fair level of engagement. The "Other" category also shows a small portion of respondents who use Sanchar, Janmat newspapers either always or sometimes. This table helps to understand which newspapers are more commonly used by respondents for getting agricultural information.

**Table 3 Use of Government scheme**

| Government scheme                      | Always<br>[n] (%) | Sometimes<br>[n] (%) | Never<br>[n] (%) | Total<br>[n] (%) |
|--|-------------------|----------------------|------------------|------------------|
| Pradhan Mantri Kisan Saman Nidhi       | 40<br>(36.36%)    | 50<br>(45.45%)       | 20<br>(18.19%)   | 110<br>(100%)    |
| Pradhan Mantri Pik Vima Yojna          | 25<br>(22.73%)    | 60<br>(54.54%)       | 25<br>(22.73%)   | 110<br>(100%)    |
| Kisan Credit Card                      | 35<br>(31.82%)    | 55<br>(50.00%)       | 20<br>(18.18%)   | 110<br>(100%)    |
| Pradhan Mantri Krushi Sinchayee Yojna  | 10<br>(9.09%)     | 15<br>(13.64%)       | 85<br>(77.27%)   | 110<br>(100%)    |
| Soil Health Card Scheme                | 10<br>(9.09%)     | 15<br>(13.64%)       | 85<br>(77.27%)   | 110<br>(100%)    |
| Krishi UDAN Scheme                     | 5<br>(4.55%)      | 10 (9.09%)           | 95<br>(86.36%)   | 110<br>(100%)    |
| KCC for animal husbandry and fisheries | 5<br>(4.55%)      | 10 (9.09%)           | 95<br>(86.36%)   | 110<br>(100%)    |
| PM Kisan Maan Dhan Yojna               | 10<br>(9.09%)     | 15<br>(13.64%)       | 85<br>(77.27%)   | 110<br>(100%)    |
| m-kisan Portal                         | 5<br>(4.55%)      | 10 (9.09%)           | 95<br>(86.36%)   | 110<br>(100%)    |
| National Agricultural Portal           | 5<br>(4.55%)      | 10 (9.09%)           | 95<br>(86.36%)   | 110<br>(100%)    |
| Seed Net Indian Portal                 | 5<br>(4.55%)      | 10 (9.09%)           | 95<br>(86.36%)   | 110<br>(100%)    |
| Other                                  | 1<br>(0.91%)      | 5 (4.55%)            | 104<br>(94.55%)  | 110<br>(100%)    |

According to Table 3, it is seen that the most used schemes are Pradhan Mantri Kisan Saman Nidhi, with 45.45% using it sometimes, and the Kisan Credit Card, with 50% sometimes. The Pradhan Mantri Pik Vima Yojna also has a good number of users, with 54.55% sometimes. The Other category has the least use, in that KISAN PM KUSUM scheme with 4.55% using it sometimes. This shows that while a few government schemes are commonly used by farmers, others are used less frequently.

**Table 4 Use of agricultural mobile apps for farming**

| Agricultural mobile apps | Always<br>[n] (%) | Sometimes<br>[n] (%) | Never [n]<br>(%) | Total<br>[n]<br>(%) |
|--------------------------|-------------------|----------------------|------------------|---------------------|
| Meghdoot                 | 10<br>(9.09%)     | 15<br>(13.64%)       | 85<br>(77.27%)   | 110<br>(100%)       |



|  |                |                |                 |               |
|--|----------------|----------------|-----------------|---------------|
| PMFBY (Pradhan Mantri Fasal Bima Yojana) | 15<br>(13.64%) | 75<br>(68.18%) | 20<br>(18.18%)  | 110<br>(100%) |
| E-NAM                                    | 10<br>(9.09%)  | 15<br>(13.64%) | 85<br>(77.27%)  | 110<br>(100%) |
| Krishi Yantradhare Driver App            | 0(0%)          | 0(0%)          | 110<br>(100%)   | 110<br>(100%) |
| Farm Calculator App                      | 5<br>(4.55%)   | 5 (4.55%)      | 100<br>(90.91%) | 110<br>(100%) |
| Kisan Suvidha App                        | 5<br>(4.55%)   | 5 (4.55%)      | 100<br>(90.91%) | 110<br>(100%) |
| Kayaka Mitra App                         | 5<br>(4.55%)   | 5 (4.55%)      | 100<br>(90.91%) | 110<br>(100%) |
| Kisan Connect                            | 5<br>(4.55%)   | 5 (4.55%)      | 100<br>(90.91%) | 110<br>(100%) |
| Crop Doctor App                          | 10<br>(9.09%)  | 10 (9.09%)     | 90<br>(81.82%)  | 110<br>(100%) |
| Other                                    | 5<br>(4.55%)   | 2 (1.82%)      | 103<br>(93.64%) | 110<br>(100%) |

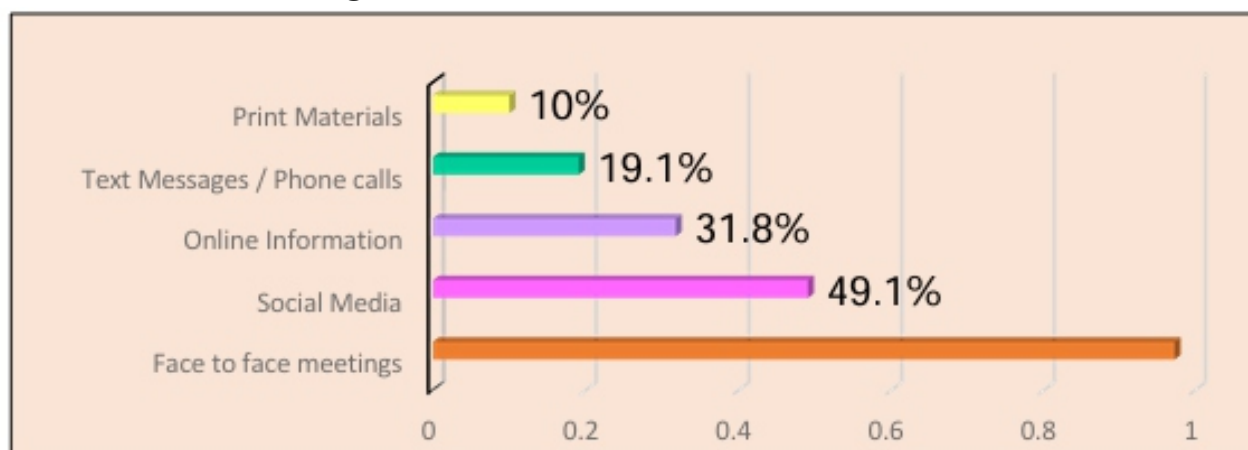
The data in Table 4 shows how often different agricultural apps are used by farmers. The PMFBY (Pradhan Mantri Fasal Bima Yojana) app is the most used, with 68.18% using it sometimes. Meghdoot and E-NAM also have a small number of regular users (both 9.09%) and 13.64% of users use them sometimes, but most farmers never use them. The "Other" category shows that very few users regularly or occasionally use apps like Agri central, Shetimitra. Overall, usage is low for most apps except PMFBY.

**Table 5 Use of social media for agriculture information**

| Social Media | Always<br>[n] (%) | Sometimes<br>[n] (%) | Never<br>[n] (%) | Total<br>[n] (%) |
|--------------|-------------------|----------------------|------------------|------------------|
| YouTube      | 45 (40.91%)       | 55 (50%)             | 10 (9.09%)       | 110 (100%)       |
| WhatsApp     | 45 (40.91%)       | 55 (50%)             | 10 (9.09%)       | 110 (100%)       |
| Instagram    | 20 (18.18%)       | 45 (40.91%)          | 45 (40.91%)      | 110 (100%)       |
| Facebook     | 7 (6.36%)         | 20 (18.18%)          | 83 (75.45%)      | 110 (100%)       |

The data in table 5 shows that YouTube and WhatsApp are the most commonly used social media platforms for farming purposes. Around 41% of respondents always use both platforms, and 50% use them sometimes. Instagram is used less frequently, with 41% using it sometime. So this shows that YouTube and WhatsApp play an important role in how farmers gather agricultural information, and Instagram also coming in middle category because they also use sometime.

### Preference of farmers for agricultural information



**Fig 3 Preference of farmers for agricultural information**

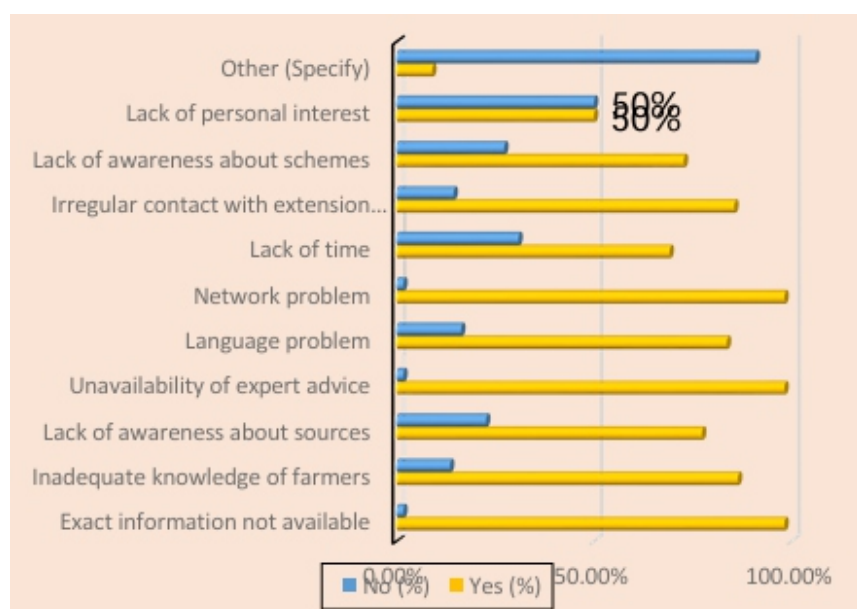
The data shown in fig. 3 that most farmers prefer to receive agricultural information through face-to-face meetings, with 97.3% saying this is their preferred way. Social media is the second most popular option, with nearly half (49.1%) of the respondents using it. Online information is also used by about 31.8% of farmers.

**Table 6 Agriculture information needs of farmers**

| Agriculture Information Needs    | Always [n] (%) | Sometimes [n] (%) | Never [n] (%) | Total [n] (%) |
|----------------------------------|----------------|-------------------|---------------|---------------|
| Soil and water conservation      | 65 (59.09%)    | 45 (40.91%)       | 0 (0.00%)     | 110 (100%)    |
| Seeds and planting materials     | 65 (59.09%)    | 45 (40.91%)       | 0 (0.00%)     | 110 (100%)    |
| Fresh crop                       | 62 (56.36%)    | 48 (43.64%)       | 0 (0.00%)     | 110 (100%)    |
| Storage of crops                 | 62 (56.36%)    | 48 (43.64%)       | 0 (0.00%)     | 110 (100%)    |
| Manure and fertilizer management | 63 (57.27%)    | 47 (42.73%)       | 0 (0.00%)     | 110 (100%)    |
| Disease and pest management      | 61 (55.45%)    | 49 (44.55%)       | 0 (0.00%)     | 110 (100%)    |
| Irrigation                       | 61 (55.45%)    | 49 (44.55%)       | 0 (0.00%)     | 110 (100%)    |
| Innovative techniques            | 61 (55.45%)    | 49 (44.55%)       | 0 (0.00%)     | 110 (100%)    |

|                      |                |                |           |               |
|----------------------|----------------|----------------|-----------|---------------|
| Weeding and thinning | 58<br>(52.73%) | 52<br>(47.27%) | 0 (0.00%) | 110<br>(100%) |
| Harvesting           | 56<br>(50.91%) | 53<br>(49.09%) | 0 (0.00%) | 110<br>(100%) |
| Weather information  | 62<br>(56.36%) | 48<br>(43.64%) | 0 (0.00%) | 110<br>(100%) |
| Market information   | 62<br>(56.36%) | 48<br>(43.64%) | 0 (0.00%) | 110<br>(100%) |
| Government schemes   | 61<br>(55.45%) | 49<br>(44.55%) | 0 (0.00%) | 110<br>(100%) |
| Organic farming      | 60<br>(54.55%) | 50<br>(45.45%) | 0 (0.00%) | 110<br>(100%) |

It is observed from the data shown in Table 6 that in all the agriculture information needs, the percentage of farmers who always and sometimes need agricultural information is quite similar. For agriculture information needs, around 50% to 59% of farmers always need information, while about 41% to 50% need it sometimes. This pattern is consistent across areas like soil and water conservation, seeds, crop storage, fertilizer use, pest control, irrigation, harvesting, market and weather information, organic farming, and others. No one marked “never” as a response, showing that information is generally needed at every step, with only slight variations in how often it's required.



### Challenges faced by farmers

**Fig. 4 Challenges faced by farmers**

Most farmers face several challenges when trying to get agricultural information. Fig. 4 reveals that a very high number (98.2%) said they struggle to find exact information and expert advice, and they also face serious network issues. Around 86.4% feel they lack enough knowledge, while 83.6% find it hard to understand information due to language barriers. About 85.5% rarely meet with agricultural officers, and 77.3% are not aware about sources. Many farmers (72.7%) don't know about government schemes, and 69.1% say they don't have enough time to search for information. Half of the farmers (50%) lack personal interest. In the "other" category (9.1%), farmers mentioned electricity problems as an additional issue that affects their access to information. This shows that there are many areas where support is needed to make agricultural information more accessible and useful.

### Farmer's expectation from library resources

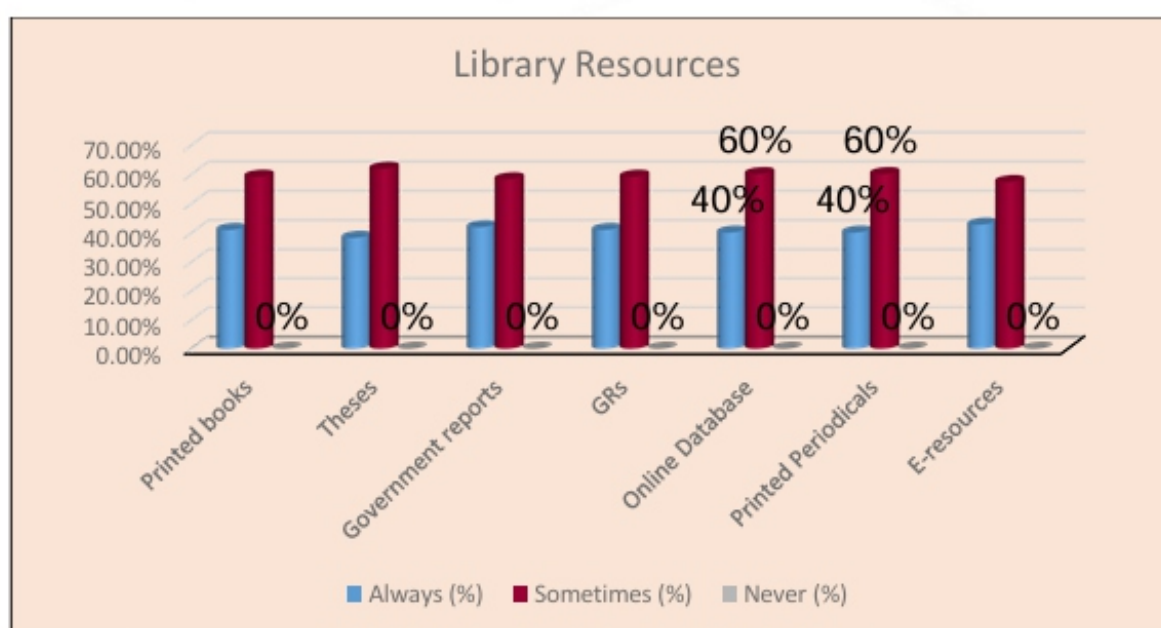
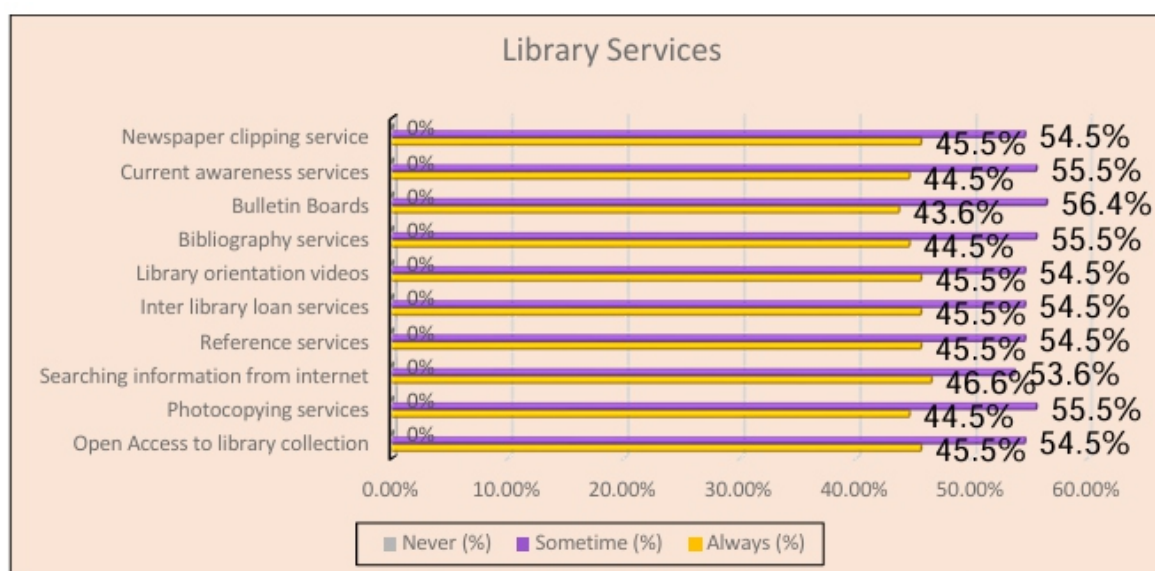


Fig. 5 Farmer's expectation from library resources

The data in fig. 5 reveals that all respondents agreed that library resources are useful for farming. Government reports (42.73%), e-resources (42.73%), and GRs (41.82%) were the most frequently accessed sources, with the highest percentages of respondents indicating they "always" use them for agricultural information. Printed books (40.91%) and online databases (40.00%) also showed strong regular usage, highlighting the importance of both official documents and easily accessible online or printed materials in meeting the information needs of the respondents.

### Farmer's expectations from library services

Fig. 6 reveals that respondents showed strong expectations for several key library services. About 53.6% expect searching information from the internet to be reliable and easily accessible. Around 54.5% of respondents rely on services like open access to library collection, reference services, inter-library loan services, library orientation videos, and newspaper clipping service, indicating their expectation for



**Fig 6 Farmer's expectations from library services**

these to be consistently available and up-to-date. Photocopying services, bibliography services, and current awareness services were also valued by 44.5% to 55.5% of users, reflecting their expectation for quick, accurate, and convenient support. Overall, these figures suggest that users expect library services to be efficient, user-friendly, and highly supportive of their farming.

### CONCLUSION AND RECOMMENDATIONS:

The information seeking pattern of the farmers of Kalwan taluka reveal that, the farmers are not much dependant on the government officers. They prefer Mass media, and social media. The government schemes are less frequently used by them. 68.18% farmers are using app created by government. It is observed that 97.3% farmers prefer face to face meetings. That shows that the farmers are interested and feel that they would be benefitted from tailor-made solutions to their issues. Farmers need information at all stages of farming. These kind of surveys help the government to identify the exact issues faced by the farmers. The authors have recommended that a government library should be established in Kalwan taluka. The library should organize lectures of government officers and experienced and successful farmers to solve their daily issues and motivate them. The library should help the farmers in searching relevant agricultural information (from government websites, schemes) from the internet. The library should conduct awareness programs on artificial intelligence and its use in farming.

### References:

1. Bansal, V., Das, L., Joshi, V., & Meena, S. C. (2022). Farmer's awareness and use of different ICT tools. *Asian Journal of Agricultural Extension, Economics & Sociology*, 40(10), 156–165. <https://doi.org/10.9734/ajaees/2022/v40i1031055>
2. Ghate, U., & Kulkarni, H. (2024). Artificial intelligence & nature-based solutions in agriculture: A BT cotton pest management case study in India. *Qeios*. <https://doi.org/10.32388/nfgp2f>



3. Isiaka, R. K., Yusuff, S. O., & Jawando, J. O. (2023). Market information seeking behaviour of rural farmers in Ogun State, Nigeria. *African Journal of Social Sciences and Humanities Research*, 6(6), 87–99. <https://doi.org/10.52589/AJSSHR-OXTLJXXR>
4. MadhuShekar, B. R., Rani, V. S., Padmaveni, C., Reddy, M. M., & Kumar, B. A. (2023). Analysis of farmer's perception and usage of social media in agriculture. *International Journal of Bio-resource and Stress Management*, 14(Dec, 12), 1646–1653. <https://doi.org/10.23910/1.2023.4972a>
5. Panda, P., Tiwari, R., Handage, S., & Dutt, T. (2022). Information source utilization by livestock and poultry farmers of Uttar Pradesh. *Indian Journal of Extension Education*, 58(1), 172–175. <https://doi.org/10.48165/IJEE.2022.58133>
6. Singh, P. K., Tiwari, R., Singh, S., Kumar, P., & Rajak, S. K. (2024). Agriculture information needs of the farmers in Uttar Pradesh. *International Journal of Advanced Biochemistry Research*, 8(2, Suppl.), 178–182. <https://doi.org/10.33545/26174693.2024.v8.i2Sc.533>
7. Yalakonda, R., & Chandrasekaran, K. (2022a). Credibility of information sources and channels as perceived by paddy farmers in Telangana state. *Indian Journal of Extension Education*, 59(1), 170–173. <https://doi.org/10.48165/ijee.2023.59137>
8. Yousuf, D., Ali, L., Dar, M. A., Bhat, S. H., Wani, K. R., Wani, F. J., & Wani, T. A. (2023). Assessment of information needs of apple growers in District Baramulla of Jammu and Kashmir (UT), India. *Journal of Experimental Agriculture International*, 45(9), 182–187. <https://doi.org/10.9734/jeai/2023/v45i92190>

# KINSHIP AMONG THE SIBLINGS' IN "CLEAR LIGHT OF DAY" BY ANITA DESAI: A STUDY

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## **ABSTRACT**

Anita Desai's *Clear Light of Day* (1980) is a profound exploration of familial relationships, particularly the bonds and tensions among siblings. Set in post-colonial India, the novel delves into the lives of the Das siblings—Bim, Tara, Raja, and Baba—whose relationships are shaped by personal aspirations, societal expectations, and unresolved childhood conflicts. This paper examines the dynamics of kinship among the siblings, focusing on themes of love, resentment, duty, and reconciliation. Through a close reading of the text, the study highlights how Desai portrays sibling relationships as complex and evolving, influenced by memory, time, and individual growth. The analysis also considers the socio-cultural context of the novel, emphasizing how external factors such as partition, tradition, and modernity impact familial ties.

**KEYWORDS:** Kinship, Sibling Relationships, family dynamics, Memory, Reconciliation, memory, trauma, Post-Colonial Literature, feminist literary criticism, Anita Desai

## **Introduction**

Family relationships form the cornerstone of human experience, and literature often reflects the intricate dynamics that define these bonds. Anita Desai's *Clear Light of Day* is a compelling narrative that examines the lives of the Das siblings, whose relationships are marked by both affection and estrangement. The novel unfolds primarily through the perspective of Bim, the eldest sister, as she reflects on her past and present interactions with her siblings—Tara, Raja, and Baba. Desai's portrayal of kinship is not merely a study of familial love but also an exploration of how time, memory, and external circumstances shape these connections. This paper seeks to analyze the sibling relationships in *Clear Light of Day*, focusing on how Desai presents kinship as a fluid and evolving construct. The study will explore the psychological and emotional dimensions of these relationships, considering factors such as parental neglect, societal pressures, and personal ambitions that contribute to both unity and discord among the siblings. Furthermore, the paper will discuss how the novel ultimately suggests the possibility of reconciliation and understanding, despite past grievances.

## **THE DAS SIBLINGS: AN OVERVIEW**

The Das family consists of four siblings—Bim, Tara, Raja, and Baba—each representing different responses to their shared upbringing. Their relationships are deeply influenced by their parents'

indifference, which forces them to rely on each other for emotional support while also fostering resentment and rivalry.

#### 1. Bim and Tara: The Bond of Dependence and Resentment:

Bim, the eldest sister, assumes a maternal role after their parents' neglect, particularly towards Tara and Baba. Tara, the younger sister, initially depends on Bim for guidance but later distances herself after marrying and moving away. Their relationship is characterized by a mix of affection and unspoken tension. While Bim resents Tara for leaving, Tara feels stifled by Bim's dominance. Desai captures this duality when Tara reflects:

> "Bim was always the strong one, the one who held us together. But sometimes, strength feels like control." (Desai 78)

This dynamic illustrates how caregiving roles in sibling relationships can lead to both attachment and friction.

2. Raja and Bim: Intellectual Rivalry and Unspoken Love: Raja, the only brother, shares a close yet competitive bond with Bim. Both are intellectually inclined, but Raja's ambitions lead him to align himself with their wealthy Hyder Ali family, creating a rift between him and Bim. His departure and subsequent success evoke feelings of abandonment in Bim, who perceives his actions as a betrayal. However, beneath their conflicts lies a deep, unexpressed love, evident when Bim preserves Raja's letters despite her anger.

#### 3. Baba: The Silent Observer:

Baba, the youngest sibling, remains a passive figure due to his mental and physical limitations. His presence serves as a silent reminder of the family's unresolved struggles. While his siblings often overlook him, his dependence on the gramophone symbolizes his need for stability amidst familial chaos.

### **FACTORS INFLUENCING SIBLING DYNAMICS:**

#### 1. Parental Neglect and Its Aftermath:

The Das siblings' relationships are deeply affected by their parents' emotional absence. Their father's alcoholism and their mother's indifference force Bim into a caretaker role, creating an imbalance in sibling interactions. Psychologically, this leads to unresolved resentment, particularly in Bim, who feels burdened by her responsibilities.

#### 2. Impact of Historical and Social Changes:

The novel is set against the backdrop of India's partition and post-independence era, which indirectly influences the siblings' lives. Raja's alignment with the Muslim Hyder Ali family and his move to Pakistan symbolize the political divides of the time. Similarly, Tara's emigration to America reflects the growing diaspora, further straining familial ties.

#### 3. Memory and Reconciliation:



Memory plays a crucial role in shaping the siblings' perceptions of each other. Bim's reflections reveal how past grievances linger, yet the novel concludes with a sense of reconciliation. The final scene, where Bim listens to Baba's gramophone, signifies acceptance and the enduring, albeit imperfect, bond among the siblings.

### **COMPARATIVE ANALYSIS WITH OTHER LITERARY WORKS:**

Sibling relationships in literature often reflect broader societal tensions, and *Clear Light of Day* shares thematic parallels with other notable works.

#### **1. The God of Small Things by Arundhati Roy:**

Like Desai's novel, Roy's *The God of Small Things* (1997) explores fractured sibling bonds shaped by family trauma and social hierarchies. The twins Rahel and Estha experience separation due to familial and caste-based conflicts, mirroring the estrangement between Bim and Raja. However, while Roy's narrative emphasizes irreversible loss, Desai's conclusion suggests tentative reconciliation.

#### **2. King Lear by William Shakespeare:**

The rivalry between Lear's daughters—Goneril, Regan, and Cordelia—parallels the tensions between Bim and Tara. Both works depict how inheritance and parental favoritism breed resentment. However, unlike *King Lear*, which ends in tragedy, *Clear Light of Day* offers a hope for familial harmony.

#### **3. Middlesex by Jeffrey Eugenides:**

Eugenides' novel examines sibling dynamics through the lens of migration and identity. Like Tara's emigration to America, the protagonist's family in *Middlesex* grapples with displacement. However, Desai's focus remains on emotional rather than physical transformation, highlighting how memory preserves kinship despite distance.

These comparisons illustrate that while sibling conflicts are universal, cultural and narrative contexts shape their resolutions.

### **PSYCHOLOGICAL PERSPECTIVES ON SIBLING RELATIONSHIP:**

Psychological theories provide insight into the Das siblings' fraught dynamics.

#### **1. Attachment Theory (Bowlby, 1969):**

Bim's caretaking role stems from her parents' emotional neglect, forcing her into a pseudo-parental position. This aligns with Bowlby's theory that insecure attachments in childhood lead to compensatory behaviors in adulthood. Tara's dependence on Bim and subsequent rebellion reflect an anxious-ambivalent attachment style (Ainsworth, 1978).

#### **2. Sibling Rivalry (Freud, 1917):**

Freud's concept of sibling rivalry explains Raja's competitiveness with Bim. As the only son, Raja seeks validation outside the family, resenting Bim's intellectual dominance. His alignment with the Hyder Alis mirrors Freud's idea of displacement—redirecting unresolved familial tensions onto external figures.

#### **3. Trauma and Memory (Herman, 1992):**

The siblings' unresolved childhood trauma manifests in their adult relationships. Bim's refusal to sell the family home symbolizes her inability to move past the past, a common response to chronic trauma (Herman 47). Baba's attachment to the gramophone further reflects how trauma survivors cling to familiar objects for stability.

These perspectives reveal that the Das siblings' conflicts are not merely personal but psychological patterns common to dysfunctional families.

### **FEMINIST READING OF BIM'S ROLE:**

Bim's character challenges traditional gender roles, making her a compelling subject for feminist analysis.

1. The Burden of Caregiving: As the eldest sister, Bim assumes domestic responsibilities typically imposed on women in patriarchal societies. Her resentment mirrors the feminist critique of unpaid emotional labor (Hochschild 1989). Unlike Tara, who escapes through marriage, Bim remains trapped, symbolizing how societal expectations limit women's

2. Intellectual Agency vs. Domestic Confinement:

Bim's scholarly ambitions conflict with her caregiving duties, reflecting the dual pressures faced by educated women in post-colonial India (Sangari 1999). Her refusal to marry underscores her rejection of conventional femininity, yet her isolation suggests the costs of defiance.

3. Reconciliation as Empowerment:

The novel's ending subverts traditional feminist narratives. Instead of achieving independence, Bim accepts her familial ties, suggesting that empowerment can coexist with attachment (Gilligan 1982). This nuanced portrayal resists simplistic readings of female liberation.

### **COMPARATIVE LITERARY ANALYSIS:**

1. The Das Siblings and the Family in Post-Colonial Literature:

The Das family's dynamics find compelling parallels in other significant works of post-colonial literature. In comparison to Salman Rushdie's *Midnight's Children* (1981), where sibling relationships mirror national divisions, Desai's approach is more intimate yet equally politically resonant. While Rushdie employs magical realism to explore familial and national identity, Desai's realism grounds the political in the personal, showing how macro-level changes manifest in microlevel relationships.

A particularly illuminating comparison can be made with Jhumpa Lahiri's *The Namesake* (2003). Both novels explore how migration affects sibling relationships, though in *Clear Light of Day*, it is Tara's move to America that creates familial distance, whereas in Lahiri's work, the entire family experiences displacement. This distinction highlights Desai's focus on how different responses to social change within a single family can create relational fractures.

2. Western Literary Counterparts: Similarities and Divergences:

When examined alongside Western portrayals of sibling relationships, such as those in Jane Austen's *Sense and Sensibility* (1811), interesting cultural differences emerge. While both novels explore sisterly bonds strained by differing worldviews, Desai's treatment incorporates distinctly Indian familial expectations and the particular pressures of post-colonial modernity. The Dashwood sisters' conflicts stem primarily from romantic entanglements, whereas the Das sisters' tensions arise from more fundamental disagreements about family responsibility and personal freedom.

### 3. Thematic Resonances in Contemporary Indian Literature:

More recent Indian novels like Aravind Adiga's *The White Tiger* (2008) continue to explore sibling relationships as metaphors for social inequality. However, Desai's earlier work stands out for its psychological depth and refusal of simplistic resolutions. Where Adiga's protagonist severs family ties completely, Desai's characters maintain complex, often painful connections that resist easy categorization.

## **PSYCHOLOGICAL PERSPECTIVES ON SIBLING DYNAMICS:**

### 1. Developmental Psychology and Family Systems:

From a developmental psychology perspective, the Das siblings' relationships exemplify how birth order and family roles shape personality (Sulloway 1996). Bim, as the eldest, assumes caretaker responsibilities that foster both her strength and her rigidity. Tara's middle-child position manifests in her role as peacemaker and later escapee, while Raja's status as the only son creates unique pressures and privileges. Baba's position as the youngest, coupled with his disability, results in his symbolic role as the family's emotional barometer. Family systems theory (Bowen 1978) helps explain the dysfunctional patterns that emerge in the Das household. The emotional distance of the parents creates an "undifferentiated family ego mass" where boundaries between siblings become blurred. This explains both the intensity of their childhood bonds and the difficulty of establishing healthy adult relationships.

### 2. Attachment Theory and Trauma Studies:

Attachment theory (Bowlby 1969) provides crucial insights into the Das siblings' relational patterns. Their parents' emotional neglect creates insecure attachment styles that persist into adulthood. Bim develops an anxious-preoccupied attachment, manifesting in her over-involvement in family matters. Tara exhibits avoidant tendencies, physically and emotionally distancing herself from the family. Raja's attachment appears disorganized, vacillating between idealization of the Hyder Alis and resentment toward his birth family. The siblings' experiences also align with contemporary understanding of complex trauma (Van der Kolk 2014). Their childhood, marked by parental neglect and the upheavals of partition, creates lasting psychological imprints. Bim's hoarding of family artifacts and Raja's nationalist fervor can be understood as trauma responses - attempts to create order and meaning from chaotic experiences.

### 3. Memory and Narrative Identity:

The novel's exploration of memory connects with psychological research on narrative identity (McAdams 2001). Each sibling constructs a different narrative about their shared past, reflecting their current needs and conflicts. Bim's narrative emphasizes continuity and responsibility, Tara's focuses on escape and reinvention, while Raja's incorporates nationalist mythology. These competing narratives demonstrate how family history is constantly reconstructed rather than objectively remembered.

### **FEMINIST INTERPRETATION OF BIM'S ROLE:**

#### **1. The Paradox of Female Agency in Post-Colonial Contexts:**

Bim's character presents a complex case study of female agency in transitional societies. Unlike the more conventional Tara, who follows the traditional path of marriage and emigration, Bim chooses independence but pays a psychological price. Her situation illustrates the double bind of educated women in post-colonial societies - granted new opportunities but still bound by old expectations (Sangari 1999). A close reading of Bim's interactions with Dr. Biswas reveals how professional women must negotiate patriarchal structures even in progressive spaces. The subtle condescension Bim encounters as a female history teacher contrast with Raja's easy acceptance as a poet and intellectual.

#### **2. Caregiving and the Feminization of Responsibility:**

Bim's role as primary caregiver for Baba reflects the global feminization of care work (Hochschild 2000). Desai's portrayal captures both the dignity and the oppression in this role. The novel subtly critiques how societies valorize women's sacrifice while denying them full autonomy. Bim's eventual reconciliation with her role suggests not passive acceptance but a conscious, if complicated, choice.

#### **3. Alternative Femininities and Feminist Possibilities:**

Compared to feminist icons in Western literature like Jane Eyre, Bim represents a distinctly Indian model of female empowerment. Her strength comes not through romantic fulfillment or complete independence, but through her ability to hold contradictory roles - professional and caregiver, traditional and modern. This complexity challenges Western feminist paradigms that often privilege individual autonomy over relational identities (Gilligan 1982).

### **CONCLUSION**

Anita Desai's *Clear Light of Day* presents a nuanced portrayal of sibling relationships, illustrating how kinship is shaped by love, duty, resentment, and eventual reconciliation. The Das siblings' interactions reflect broader themes of memory, time, and socio-political influences, making their story both personal and universal. While their relationships are fraught with tension, the novel ultimately suggests that familial bonds, though fragile, possess the capacity for endurance and understanding. This comprehensive analysis of *Clear Light of Day* reveals the novel's profound insights into sibling relationships and their intersection with larger social forces. Desai's portrayal of the Das siblings demonstrates how family bonds serve as crucibles for personal and collective identity formation. The novel's enduring significance lies in its honest depiction of kinship as both wound and sanctuary, a space

where historical trauma and personal growth continuously interact. The study's interdisciplinary approach yields several important findings. Psychologically, the novel accurately portrays how childhood dynamics shape adult relationships. Comparatively, it occupies a unique space in post-colonial literature, balancing intimate family drama with national allegory. Feministically, it offers a nuanced portrait of female agency that resists easy categorization. Future research could productively explore the novel's treatment of space and architecture in relation to family dynamics, or examine how contemporary Indian writers have developed Desai's legacy in portraying complex sibling relationships. Ultimately, *Clear Light of Day* remains vital reading for anyone interested in the intricate interplay between family, identity, and social change.

#### **WORKS CITED:**

- Adiga, Aravind. *The White Tiger*. Atlantic, 2008.
- Ainsworth, Mary. *Patterns of Attachment*. Psychology Press, 1978.
- Austen, Jane. *Sense and Sensibility*. Thomas Egerton, 1811.
- Bowen, Murray. *Family Therapy in Clinical Practice*. Jason Aronson, 1978.
- Bowlby, John. *Attachment and Loss*. Basic Books, 1969.
- Desai, Anita. *Clear Light of Day*. HarperCollins, 19
- Freud, Sigmund. *Introductory Lectures on Psychoanalysis*. Norton, 1917.
- Gilligan, Carol. *In a Different Voice*. Harvard UP, 1982.
- Herman, Judith. *Trauma and Recovery*. Basic Books, 1992.
- Hochschild, Arlie. "Global Care Chains and Emotional Surplus Value." *On the Edge*, edited by Anthony Giddens, Jonathan Cape, 2000, pp. 130-146.
- Jain, Jasbir. *Stairs to the Attic: The Novels of Anita Desai*. Printwell, 1991.
- Lahiri, Jhumpa. *The Namesake*. Houghton Mifflin, 2003.
- McAdams, Dan. *The Person: An Integrated Introduction to Personality Psychology*. Harcourt, 2001.
- Pathak, R. S. *The Fictional World of Anita Desai*. Abinav Publications, 2001.
- Rao, A. V. Krishna. *The Indo- English Novel: The Impact of the West*. Sterling Publishers, 1986.
- Roy, Arundhati. *The God of Small Things*. Random House, 1997.
- Rushdie, Salman. *Midnight's Children*. Jonathan Cape, 1981.
- Sangari, Kumkum. *Politics of the Possible*. Tulika, 1999.
- Sulloway, Frank. *Born to Rebel*. Pantheon, 1996.
- Van der Kolk, Bessel. *The Body Keeps the Score*. Vikin

# LEGAL ASPECT OF CORPORATE SOCIAL RESPONSIBILITY

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## **ABSTRACT**

The aim of this article is to explore the evolving legal characteristics of Corporate Social Responsibility (CSR), with its shift from being a voluntary practice to being a mandated duty under a range of legal regimes, such as the Companies Act, 2013 to be specific in India. Part of a company's revenues has to be diverted into corporate social responsibility (CSR) activities, involving sectors such as education, health, and eco-sustainability, based on research that explores legislative provisions mandating such efforts. In it, the role of legislative mandates towards ensuring openness, compliance, and accountability in CSR policies is a focus. Besides that, challenges of inconsistency in definitions of CSR, undue pressure towards attaining compliance but with limited impact, as well as variances in enforcing measures are confronted. Besides, the research gives a review of international frameworks such as the United Nations Global Compact and ISO 26000 with a focus on the necessity for companies embracing practices of responsibility and those that agree with the society's welfare. In addition, it provides perspectives into the developments taking place in the nature of CSR regulations and how these developments are impacting corporate governance, stakeholder interaction, and long-term viability.

**Keywords:** Corporate Social Responsibility (CSR), Legal Framework, Companies Act 2013, CSR Mandates, Corporate Governance, Stakeholder Engagement, Sustainability, UN Global Compact, ISO 26000, Compliance, Transparency, Accountability.

## **Introduction**

Corporate Social Responsibility has changed over the years from a contentious and voluntary area of ethical practice to an indispensable part of corporate governance. It is a reflection of the increasing realization of the value of businesses in addressing societal challenges. Thus, CSR policies are made to ensure that a corporation is a socially acceptable company that realizes the impact of the corporation's actions on people, the environment, customers, and the community as a whole. The legal framework provides substantial support for ensuring compliance and transparency in the CSR process. If CSR raises the balance between social responsibility and the profit motive for corporations, legal frameworks add value to it through transparency. Various governments in the Asia Pacific compel companies to spend a certain percentage of their income on CSR works that include promoting environmental sustainability, labor rights, education, health care, and rural development. Companies, therefore, have such legal mandates compelling them to be producers advancing social and economic welfare while doing so ethically. The legal environment of corporate social responsibility moves constantly toward that end claimed above. Corporate social responsibility investments above a predetermined financial threshold for enterprises are mandatory in countries, including India, through their respective Companies Acts.



This makes CSR an enforced requirement instead of a voluntary initiative. Similarly, the Corporate Sustainability Reporting Directive of the European Union allocates for a wider disclosure on sustainability policies of corporations to, thus, allow for the transparency of their corporate social responsibility commitments. Additional international principles underline the importance of responsible business behavior, such as the United Nations Guiding Principles on Business and Human Rights. However, despite its limitations, problems still exist with legal enforcement, business compliance, and effective implementation of CSR activities. Several companies may Catholicize CSR regulations, seeing them as financial obligations, rather than strategic opportunities for long-term sustainability. A more detailed legal analysis of CSR may provide insights regarding the efficacy of these regulations, the extent to which they govern corporate activities, and the need for more overarching structures to assure responsible and principled corporate behavior on a worldwide scale.

### **1.1. Legal Framework Under the Company Law Amendment Act, 2013**

Further developments came with the Companies (Amendment) Act, 2020 and the Companies (CSR Policy) Amendment Rules, 2021, which came into effect on January 22, 2021. These introduced stricter compliance norms. Companies are now obligated to transfer unspent CSR funds to specified accounts within prescribed timeframes. Organizations with CSR obligations exceeding ₹10 crore in the previous three years must conduct impact assessments. Additionally, administrative overheads on CSR cannot exceed 5% of the total expenditure. Non-compliance with CSR obligations now attracts monetary penalties for both companies and officers in default. These changes reinforce CSR as a strategic, transparent, and accountable mechanism under the law. The Company Law Amendment Act, 2013 introduced significant legal changes that transformed CSR from a voluntary initiative to a mandatory obligation for specific corporations. Under Section 135 of the Companies Act, 2013, companies meeting certain financial criteria (net worth of INR 500 crore, turnover of INR 1,000 crore, or net profit of INR 5 crore) must allocate at least 2% of their average net profits from the past three years toward CSR activities.

#### **Key legal provisions under the amendment include:**

- **Mandatory CSR Spending:** Companies must invest in specified areas such as education, healthcare, rural development, and environmental sustainability.
- **CSR Committee Requirement:** A dedicated CSR committee must be formed within the company to oversee planning and implementation.
- **Public Disclosure:** Firms must disclose their CSR expenditures in annual reports and justify any unspent funds.
- **Penalties for Non-Compliance:** Companies failing to comply face penalties, including fines for directors and company officials.

## 2. LITERATURE REVIEW

**Serrano Archimi et al. (2018)** explained that employee cynicism was linked to perceived corporate social responsibility and the mediating factor of organizational trust. Employees draw a lot of trust in the company while they see CSR programs as genuine and aligned with moral business practice. An elevation in trust led to a more positive work atmosphere and a greater employee commitment that in turn reduced employee cynicism. The study stresses the vital roles of ethical responsibility, transparency, and coherent CSR initiatives to build up organizational trust. It further suggests that companies can utilize genuine CSR initiatives to develop a more motivated and engaged workforce, which will boost employee performance and job satisfaction in the long run.

**Mohammed and Rashid (2018)** highlighted that corporate social responsibility is not just a statutory requirement but also a strategic initiative for building lasting relationships with consumers and contributing good value to the brand. An inside look was given into how CSR impacts consumer satisfaction and a brand's image, centrally around the hotel industry in Malaysia. Their research said that businesses taking active participation in CSR initiatives—like community development, environmental sustainability, and ethically implemented labor practices—witnessed a positive change in consumers' perspective toward them. With the perspective of the consumers, socially responsible companies generally associate with ethical standards and superior service quality, thus enhancing customer satisfaction and brand loyalty. Both studies emphasized the varying perspectives of CSR and how it influences the internal dynamics of organizations as well as the external engagement of customers, leading to full-scale business success.

**Katmon et al. (2019)** investigated the relationship of quality of CSR disclosure in emerging countries with diversity of the board. As per their study, organizations led by boards that care for diversity with representation from a myriad of professional, gender, and racial backgrounds tend to offer more detailed and transparent CSR disclosures. According to this study, diversity of the board serves to enhance CSR engagement because it brings a wider variety of perspectives, ethical issues, and stakeholder interests into business decision-making. The report underscored the paramount importance of board diversity in fostering greater CSR accountability and strengthening corporate governance in developing nations, where enabling legal frameworks are still being developed.

## 3. EVOLUTION AND LEGAL FRAMEWORK OF CORPORATE SOCIAL RESPONSIBILITY

A corporate operations strategy and a legally mandated element, the concept of corporate social responsibility (CSR) evolved from the age-old charitable acts rooted in religion and cultural tradition. CSR was initially driven by moral philosophy, but with social and environmental responsibility picking up momentum globally during the mid-20th century, it began to take form. According to the Company Act of 2013, corporate social responsibility (CSR) became a requirement in India that required qualifying companies to provide 2% of their average net worth to environmental sustainability, health,



and education. Examples of international guidelines supporting moral, open, and sustainable business practices include the UN Global Compact and ISO 26000.

- **Evolution of Corporate Social Responsibility (CSR)**

Across generations, Corporate Social Responsibility (CSR) has evolved from random acts of philanthropy to a legal and strategic imperative for organisations. Activities that resemble CSR originated in religious and cultural ceremonies, particularly in medieval India. Rich traders and individuals sponsored community welfare, education, and infrastructure projects out of compassion and social obligation. Massive industrial expansions all over the 19th-century Industrial Revolution led to labor exploitation, urban degradation, and environmental degradation. This initiated business social responsibility debates. CSR at this stage was primarily philanthropic, motivated by the morality of the corporate owners and not by legislation or pressure from shareholders. The mid-20th century witnessed CSR becoming more institutionalized. Howard R. Bowen's 1953 book *Social Responsibilities of the Businessman* set modern CSR. Companies were viewed as social entities that have to serve employees, consumers, and the environment. Environmentalism, corporate responsibility, and human rights grew between the 1970s and 1990s. The "Triple Bottom Line" (People, Planet, Profit) prompted companies to align financial performance with social and environmental responsibility. Because of globalization and public awareness, CSR has now become a fundamental component of corporate strategy in the 21st century. Environmental, Social, and Governance (ESG) factors are employed to assess companies' sustainability performance. The UN Global Compact and ISO 26000 have institutionalized CSR practices globally, and thus it is vital to business reputation and stakeholder engagement.

- **Legal Framework of Corporate Social Responsibility**

CSR began as a voluntary practice, but most countries now mandate companies to contribute to social and environmental growth. International rules and norms influence CSR. The UN Global Compact encourages companies to adhere to human rights, labour, environment, and anticorruption principles. The OECD Guidelines for Multinational Enterprises and ILO conventions promote responsible business. While not legally binding, ISO 26000, published in 2010, offers social responsibility guidelines for all organisations. The 2013 Companies Act placed India at the forefront of CSR at the international level. The companies with a net worth of ₹500 crore or more, turnover of ₹1,000 crore, or net profit of ₹5 crore or more are required to utilize at least 2% of their average net profits over the last three years towards CSR activities under Section 135 of the said Act. These companies need to also establish a CSR Committee to formulate and oversee CSR policy. Schedule VII of the law permits CSR activities such as poverty alleviation, education, gender equality, environmental sustainability, and rural development. The legislation stresses transparency and accountability. Firms are required to report CSR expenditure and activity within their yearly Board declare. Any company not expending the stipulated sum must explain it. The Companies (Amendment) Act, 2019, further strengthened the CSR regime by

enabling unspent money to be moved to government funds or dedicated CSR accounts based on the project.

#### **4. IMPLEMENTATION, COMPLIANCE, AND LEGAL CHALLENGES IN CSR**

A very important part of today's company strategy is corporate social responsibility (CSR), and CSR success depends largely on factors like implementation, adherence, and legal challenges. While CSR is increasingly being accepted as an integral part of corporate governance, it continues to be a challenge for many businesses to incorporate it successfully in their day-to-day functioning. Such challenges involve ensuring that CSR activities are effective, transparent, and in accordance with both corporate goals and society needs as well as linked to legal compliance.

##### **4.1. Implementation of CSR**

The implementation process of CSR programs is intricate and involves planning, resource allocation, implementing them, monitoring them, and assessing their impacts. Firms have to view corporate social responsibility (CSR) through the lens of the long run as opposed to as a mere regulatory requirement in order for it to be appropriately integrated into business strategy.

##### **a. Strategic Planning and Alignment with Core Values**

- The CSR activities of the company should first align with its business strategy and core beliefs. To make the CSR activities real and meaningful, the areas chosen should reflect the vision and values of the company. For instance, while industrial companies can focus on labour rights or greenery, IT companies can focus on education and internet literacy.
- In addition to selecting the right causes, the strategic strategy ensures that these projects become sustainable and scalable. For corporate social responsibility (CSR) initiatives to impact positively on society and business in the long term, companies need to establish clear objectives, timelines, and budget.

##### **b. Resource Allocation and Budgeting**

- Proper resource planning is required for the success of CSR implementation. Companies must allocate funds for the intended projects, as well as the personnel and other resources required to implement them. In order to ensure proper implementation of CSR projects, this involves hiring professionals, partnering with NGOs, and engaging with local communities.
- Budgeting for corporate social responsibility (CSR) involves the management of human and financial resources to ensure that the money spent is utilized effectively. This is particularly challenging for small companies, who may not be able to afford to spend much of their profit on CSR activities.

##### **c. Monitoring and Evaluating CSR Impact**

- After initiating CSR activities, companies have to develop robust systems for monitoring and evaluating the outcomes of their efforts. This involves determining key performance indicators

(KPIs) with which to measure how CSR activities impact the economy, society, and the environment. For instance, in environmental sustainability efforts, a company might track reductions in wastage or energy consumption.

- Regular review ensures that CSR activities are aligned with the desired objectives and helps identify areas of improvement. Another essential factor in identifying whether CSR programs are effective is stakeholder feedback. Talking to affected stakeholders and communities provides valuable feedback on perceptions regarding CSR activities and whether they are achieving the desired impact.

#### **4.2. Compliance with CSR Regulations**

Firms have to navigate a complex network of regulations and compliance needs as corporate social responsibility (CSR) shifts from voluntary action to obligation under law. These laws are often designed to ensure that firms adhere to ethical and transparent standards as well as give back to society.

##### **a. National and International Legal Frameworks**

- India's Company Act, 2013, which mandates CSR spending for qualifying corporations, is one of the key legislative frameworks governing CSR. Under the Act's CSR provisions, companies that meet certain financial criteria must reserve a specific percentage of their net profits for CSR activities. This legislation is groundbreaking in the sense that corporate social responsibility (CSR) is now a law that applies to larger companies, requiring them to comply.
- Internationally, companies functioning in different countries must observe international norms and guidelines like ISO 26000, OECD guidelines for Multinational Enterprises, and the UN Global Compact. With a focus on labour rights, environmental conservation, human rights, and anti-corruption practices, such guidelines provide a common set of standards that organizations can choose to observe.
- Regulatory agencies often require corporations to submit detailed reports on their CSR activities, ensuring transparency and holding them accountable for their allocation of resources and reporting outcomes.

##### **b. Reporting and Transparency Requirements**

- CSR reporting and compliance with CSR regulations go hand in hand. Indian companies are mandated to provide information regarding their CSR activities in their Board Report of every year, along with the expenditure and outcomes of every project. This transparency relies on winning the trust of stakeholders, including consumers, investors, and regulators.
- Secondly, companies need to display an overview of their CSR policy on their official website so that it is accessible to the public. This helps stakeholders track the company's performance and assess its CSR commitments. Any deviation from the expenditure standards is also incorporated in the reporting, and companies have to present a reason for non-compliance if the full amount of CSR spending is not achieved.

**c. Penalties and Legal Consequences for Non-Compliance**

- Severe fines can be incurred by companies that ignore CSR legislations. Under extreme conditions, the company might be taken to court, while directors or managers who participated in the contravention could also be held responsible personally.
- A failure to obey the Companies Act, 2013 can involve fines and in some cases will necessitate unspent CSR amount being shifted from the company into approved government-controlled funds or specific CSR accounts. Enforcement is however challenging despite these sanctions, particularly in countries where regulatory bodies lack the capacity or resources to enforce compliance accordingly.

**4.3. Legal Challenges in CSR**

Firms face several legal challenges in their implementation and compliance processes, even though CSR provisions are necessary for ensuring corporate responsibility. These challenges often arise due to the ambiguity of legislative regulations, the complexity of quantifying the effect, and the inconsistent application of rules across different industries and geographic locations.

**a. Ambiguity in CSR Definitions and Areas of Focus**

- The uncertainty as to what would be a proper CSR action is one of the largest issues that businesses face. Firms could have different understandings of the broad definitions offered by laws like the Companies Act of 2013 and other global standards. For instance, it may be unclear what an appropriate CSR investment is if CSR initiatives such as environmental sustainability or education are not precisely defined in terms of quantifiable results or particular actions.
- There is also worry that some businesses would try to use money for initiatives that serve their own interests rather than really advancing social benefit. For example, advertising

**b. Pressure to Meet Compliance Without Genuine Impact**

- Another key legal challenge is the pressure on businesses to meet CSR requirements without necessarily making a tangible social impact. In most instances, businesses might consider CSR as a compliance issue and meet their requirements by allocating the bare minimum of funds to CSR initiatives. This practice can result in shallow CSR programs that are lacking in depth or fail to tackle key social problems.
- These firms might even resort to "greenwashing" by overstating or misinterpreting their efforts at CSR as a means of projecting a desirable image without performing meaningful action. This kind of practice dilutes the intent of CSR and dilutes the credence of the whole system.

**c. Inconsistent Enforcement and Regulatory Gaps**

- Even in nations with effective CSR legislation, enforcement is inconsistent. Small enterprises or firms located in far-flung areas might not have the same degree of close monitoring as major multinationals, and thus may be able to avoid CSR compliance without sustaining severe repercussions.

- There are also gaps in regulation since certain industries may not be clearly addressed by CSR law. For instance, companies operating in emerging industries such as digital technology or artificial intelligence can struggle to reconcile their activities with existing CSR models that were developed for more conventional industries.

#### **d. Complexities in Impact Measurement**

- The measurement of the effectiveness of CSR programs is an ongoing problem. Companies are legally obligated to disclose their CSR expenditures, but it is harder to measure the social or environmental value of these expenses. Much of CSR activity is long-term and possibly not immediately visible, so companies cannot readily report their effectiveness.
- Businesses also need to keep stakeholders at bay by showing quantifiable outcomes of their CSR expenditures, which might not always prove to be quantitative. For instance, green initiatives such as carbon-emission reduction can take several years to provide quantifiable benefits, but businesses are required to report incremental progress every year.

### **5. CONCLUSION**

The development of Corporate Social Responsibility (CSR) as a voluntary practice to an enforceable legal mandate reflects increasing realization about the functions of businesses as promoters of societal welfare. Legal instruments, like the Companies Act, 2013 in India, have been effective in institutionalizing CSR as a mandatory practice for larger businesses, with the focus being on transparency, accountability, and quantifiable social impact. Although CSR regulations have resulted in substantial improvements in corporate governance and social contributions, issues remain with compliance, meaningful implementation, and consistent enforcement of these laws across industry sectors. In spite of these challenges, the continued evolution of legal and regulatory systems, along with international guidelines, continues to encourage sound corporate conduct and emphasizes the necessity for businesses to reconcile profit incentives with sustainable, socially responsible conduct.

### **REFERENCES**

1. Beji, R., Yousfi, O., Loukil, N., & Omri, A. (2021). *Board diversity and corporate social responsibility: Empirical evidence from France. Journal of Business Ethics, 173, 133-155.*
2. Bikefe, G., Zubairu, U., Araga, S., Maitala, F., Ediuku, E., & Anyebe, D. (2020). *Corporate Social Responsibility (CSR) by small and medium enterprises (SMEs): a systematic review. Small Business International Review (SBIR), 4(1), 16-33.*
3. Carroll, A. B. (2021). *Corporate social responsibility (CSR) and the COVID-19 pandemic: Organizational and managerial implications. Journal of Strategy and Management, 14(3), 315-330.*
4. Carroll, A. B. (2021). *Corporate social responsibility: Perspectives on the CSR construct's development and future. Business & Society, 60(6), 1258-1278.*

5. Carroll, A. B., & Brown, J. A. (2018). Corporate social responsibility: A review of current concepts, research, and issues. *Corporate social responsibility*, 39-69.
6. Dmytriiev, S. D., Freeman, R. E., & Hörisch, J. (2021). The relationship between stakeholder theory and corporate social responsibility: Differences, similarities, and implications for social issues in management. *Journal of management studies*, 58(6), 1441-1470.
7. Dyck, A., Lins, K. V., Roth, L., & Wagner, H. F. (2019). Do institutional investors drive corporate social responsibility? International evidence. *Journal of financial economics*, 131(3), 693-714.
8. Ferrell, O. C., Harrison, D. E., Ferrell, L., & Hair, J. F. (2019). Business ethics, corporate social responsibility, and brand attitudes: An exploratory study. *Journal of Business Research*, 95, 491-501.
9. Katmon, N., Mohamad, Z. Z., Norwani, N. M., & Farooque, O. A. (2019). Comprehensive board diversity and quality of corporate social responsibility disclosure: Evidence from an emerging market. *Journal of business ethics*, 157, 447-481.
10. Kim, H., Woo, E., Uysal, M., & Kwon, N. (2018). The effects of corporate social responsibility (CSR) on employee well-being in the hospitality industry. *International Journal of Contemporary Hospitality Management*, 30(3), 1584-1600.
11. Kim, K. H., Kim, M., & Qian, C. (2018). Effects of corporate social responsibility on corporate financial performance: A competitive-action perspective. *Journal of management*, 44(3), 1097-1118.
12. Liao, L., Lin, T., & Zhang, Y. (2018). *Corporate board and corporate social responsibility assurance: Evidence from China. Journal of business ethics*, 150, 211-225.
13. Mohammed, A., & Rashid, B. (2018). *A conceptual model of corporate social responsibility dimensions, brand image, and customer satisfaction in Malaysian hotel industry. Kasetart Journal of social sciences*, 39(2), 358-364.
14. Serrano Archimi, C., Reynaud, E., Yasin, H. M., & Bhatti, Z. A. (2018). *How perceived corporate social responsibility affects employee cynicism: The mediating role of organizational trust. Journal of business ethics*, 151, 907-921.
15. Tamvada, M. (2020). *Corporate social responsibility and accountability: a new theoretical foundation for regulating Responsibility*, 5(1), 2.



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