MARATHA VIDYA PRASARAK SAMAJ'S

KPG ARTS, COMMERCE & SCIENCE COLLEGE, IGATPURI

Take Ghoti, Tal. Igatpuri, Dist. Nashik,
Maharashtra-422403 (MH)

AFFILIATED TO SAVITRIBAI PHULE PUNE UNIVERSITY,
PUNE, MAHARASHTRA : ID. NO. PU/NS/ASC/023/1981

kpgcollegeigatpuri.ac.in

Research Paper Published by Faculty

RESEARCH PAPER

Superior Photocatalytic Efficiency with Titania (TiO_2)-Polyaniline (PANI) Nanocomposite for Rapid Carbol Fuchsin (CF) Dye Degradation

Satish Arvind Ahire[1], Ashwini Ashok Bachhav[2], Bapu Sonu Jagdale[3], Thansing Bhavsing Pawar[3], Prashant Bhimrao Koli[4], Dnyaneshwar Suryabhan Sanap[5], Arun Vitthal Patil[6,*]

* *aruptl@gmail.com*

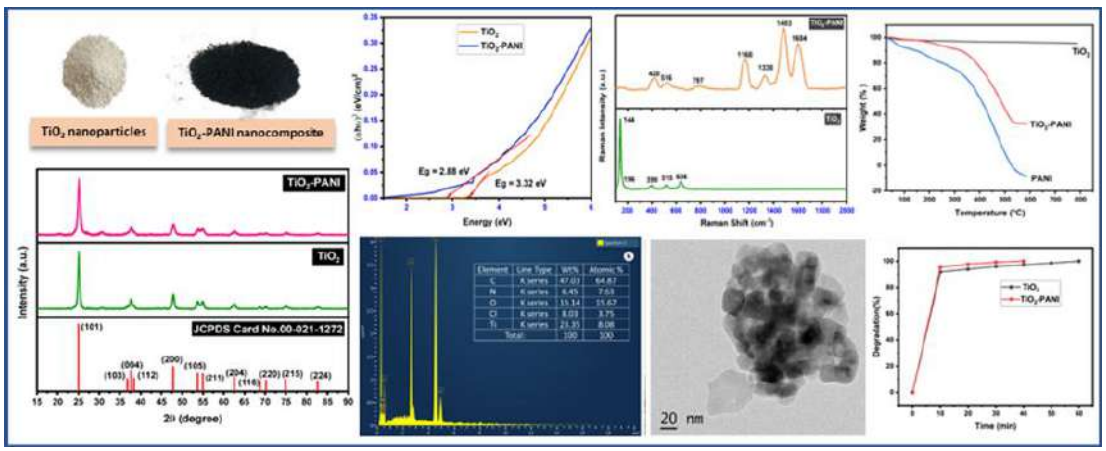
[1] Department of Chemistry, Maharaja Sayajirao Gaikwad Arts, Science and Commerce College, Malegaon, Nashik (Affiliated to Savitribai Phule Pune University, Pune (MH), India)
[2] MVPs College of Pharmacy, Nashik. (Affiliated to Savitribai Phule Pune University, Pune (MH), India)
[3] Department of Chemistry, Loknete Vyankatrao Hiray Arts, Science and Commerce College, Panchavati, Nashik. (Affiliated to Savitribai Phule Pune University, Pune (MH)
[4] Department of Chemistry, Karmaveer Abasaheb, N.M. Sonawane Arts Commerce and Science College, Satana, Taluka-Baglan, District- Nashik. (Affiliated to Savitribai Phule Pune University, Pune (MH), India)
[5] Department of Chemistry, KPG Arts, Commerce, and Science College Igatpuri-422402, Savitribai Phule Pune University, Pune, Maharashtra, India
[6] Department of Physics, Arts, Science and Commerce College, Surgana, Nashik. (Affiliated to Savitribai Phule Pune University, Pune (MH), India)

Received: January 2024 **Revised: May 2024** **Accepted: May 2024**
DOI: 10.22068/ijmse.3511

Abstract: *Hybrid photocatalysts, comprising both inorganic and organic polymeric components are the most promising photocatalysts for the degradation of organic contaminants. The nanocomposite, Titania-Polyaniline (TiO_2-PANI) was synthesized using the chemical oxidative polymerization method. Various characterization techniques were employed to assess the properties of the catalysts. The ultraviolet diffuse reflectance spectroscopy (UV-DRS) analysis revealed that the TiO_2 absorbs only UV light while the TiO_2-PANI nanocomposite absorbs light from both UV and visible regions. The X-ray diffraction (XRD) results confirmed the presence of TiO_2 (anatase) in both TiO_2 nanoparticles and TiO_2-PANI (Titania-Polyaniline) nanocomposite. The phases of the catalysts were verified through Raman, TEM, and SAED techniques where all results are in good agreement with each other. The average crystallite size of TiO_2 nanoparticle and TiO_2-PANI nanocomposite were 13.87 and 10.76 nm. The thermal stability of the catalysts was assessed by the Thermal gravimetric analysis (TGA) technique. The order of the thermal stability is TiO_2 >TiO_2-PANI >PANI. The crystal lattice characteristics were confirmed using Transmission electron microscopy (TEM). The surface area measurements were confirmed from the Brunauer-Emmett-Teller (BET) study and were employed for the evaluation of the photocatalytic efficiency of both, TiO_2 nanoparticles and TiO_2-PANI nanocomposite catalysts. The energy dispersive spectroscopy (EDS) study was employed for elemental detection of the fabricated materials. Raman spectroscopy was employed for the chemical structure and the phase characteristics of the materials. The standard conditions for the degradation of the CF dye were 8 g/L of catalyst dosage, 20 mg/L of dye concentration, and a pH of 7. The TiO_2-PANI nanocomposite exhibited superior efficiency as compared to pure TiO_2 nanoparticles, achieving almost 100% degradation in just 40 minutes.*

Keywords: *TiO_2–PANI nanocomposite, Carbol fuchsin dye, TEM, Water purification, Scavenging study.*

Graphical Abstract:



[Downloaded from ijmse.iust.ac.ir on 2024-06-19]

[DOI: 10.22068/ijmse.3511]

Journal of Sol-Gel Science and Technology
https://doi.org/10.1007/s10971-024-06446-1

ORIGINAL PAPER

Insights into the antioxidant and anticancer properties of novel biologically synthesized NiO/Ni_2O_3 nanoparticles using *Sargassum tenerrimum*

Mukul Barwant[1] · Vanita Karande[1] · Parita Basnet[2] · Deepak Kumar[3] · Saman Sargazi[4,5] · Mahmoud Mirzaei[6] · Majid S. Jabir[7] · Dnyaneshwar Sanap[8] · Suresh Ghotekar[9]

Received: 26 March 2024 / Accepted: 3 June 2024
© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2024

Abstract

Presently, the utilization of nanomaterials has evolved as an appealing alternative for ever-changing healthcare obstacles due to their distinctive features and multifunctional applications. This work aimed to fabricate and analyze novel NiO/Ni_2O_3 nanoparticles (NPs) using *Sargassum tentorium* extracts and investigate their antioxidant and anticancer potentials. Diverse analytical instrumental tools were applied to explore NiO/Ni_2O_3 NPs, including UV–vis diffuse reflectance spectroscopy (UVDRS), Fourier transform infrared spectroscopy (FTIR), X-ray diffraction (XRD), field emission scanning electron microscopy (FESEM), high-resolution scanning electron microscopy (HRTEM), and energy-dispersive X-ray (EDX) analyses. HRTEM images revealed mostly quasi-spherical and wire-shaped NPs with average 97 and 87 nm sizes for NiO/Ni_2O_3 NPs. Afterward, the biological properties of the biologically manufactured NiO/Ni_2O_3 NPs were explored. This work assessed the anticancer potential of as-fabricated NiO/Ni_2O_3 NPs utilizing the MTT assay. The experiment assessed cell viability at doses ranging from 7.81 to 500 µg/mL during a 24 h period for the breast cancer cell line (MCF-7). The study outcomes demonstrate a concentration-dependent effect of fabricated NiO/Ni_2O_3 NPs on MCF-7 cells. The inhibition of MCF-7 cells increases with the concentration of NiO/Ni_2O_3 NPs, achieving an IC_{50} value of 883.4 µg/mL in 24 h. Furthermore, the antioxidant potency of NiO/Ni_2O_3 NPs was examined via a free radical scavenging ABTS and DPPH assay. At a concentration of 50 µg/mL, NiO/Ni_2O_3 NPs also exhibited 74.71% ABTS scavenging and 71.62% DPPH scavenging inhibition, respectively. In conclusion, NiO/Ni_2O_3 NPs manufactured via *Sargassum tenerrimum* extracts could be promising candidates for further biomedical applications.

✉ Vanita Karande
vaneetachandra@gmail.com

✉ Suresh Ghotekar
ghotekarsuresh7@gmail.com

[1] Department of Botany, Yashavantrao Chavan Institute of Science, Satara 415001 Maharashtra, India

[2] Department of Chemistry, Sikkim Institute of Science & Technology, Sikkim University, Jorethang, Sikkim, India

[3] Department of Chemistry, School of Chemical Engineering, Lovely Professional University, Phagwara 144411 Punjab, India

[4] Department of Clinical Biochemistry, Zahedan University of Medical Sciences, Zahedan, Iran

[5] Cellular and Molecular Research Center, Research Institute of Cellular and Molecular Sciences in Infectious Diseases, Zahedan University of Medical Sciences, Zahedan, Iran

[6] Department of Natural and Mathematical Sciences, Faculty of Engineering, Tarsus University, Tarsus, Turkey

[7] Department of Applied Science, University of Technology, Baghdad, Iraq

[8] Department of Chemistry, KPG Arts, Commerce & Science College, Savitribai Phule Pune University, Igatpuri 422403 Maharashtra, India

[9] Centre for Herbal Pharmacology & Environmental Sustainability, Chettinad Hospital and Research Institute, Chettinad Academy of Research & Education, Kelambakkam 603103 Tamil Nadu, India

Published online: 24 June 2024

Content courtesy of Springer Nature, terms of use apply. Rights reserved.

Topics in Catalysis
https://doi.org/10.1007/s11244-024-01983-z

ORIGINAL PAPER

Bio-inspired Sustainable Fabrication of CdO Nanoparticles Using *Citrus sinensis* Peel Extract for Photocatalytic Degradation of Rhodamine B Dye

Khanderao Pagar[1] · Vishal Gadore[2] · Soumya Ranjan Mishra[2] · Md. Ahmaruzzaman[2] · Parita Basnet[3] · Dnyaneshwar Sanap[4] · Minh Canh Vu[5] · Kun-Yi Andrew Lin[6] · Balasubramani Ravindran[7,9] · Suresh Ghotekar[8]

Accepted: 13 June 2024
© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2024

Abstract

Presently, the creation of metal nanoparticles (NPs) using plant extracts has rapidly gained an appealing aspect in the realm of modern nanobiotechnology, with substantial merits over traditional techniques. In this context, cadmium oxide (CdO) NPs have been created utilizing a bio-inspired green synthetic approach using *Citrus limetta* peel extract. The active organic biomolecules within the peel extract functioned as reductants and stabilizers for NPs, resulting in pure CdO NPs. The structural, chemical, optical, and topological traits were evaluated utilizing XRD, FTIR, FESEM, EDX, HRTEM, UVDRS, and PL analyses. The synthesized CdO NPs are about 54 nm in size with a quasi-spherical morphology. The computed band gap of NPs was 2.59 eV, which validated the cubic phase formation of CdO NPs. The photocatalytic studies of the as-fabricated CdO NPs were investigated through Rhodamine B (RhB) dye degradation via H_2O_2-assisted AOP under sunlight. The effect of H_2O_2, photocatalyst loading, RhB dye concentration, contact time, scavengers, and recyclability study was also investigated in detail to demonstrate the functionality of the photocatalyst. Approximately 85% of the dye was decomposed within 60 min, revealing its excellent photocatalytic performance of CdO NPs. Therefore, the research outcomes thus offer that the CdO NPs may have a substantial potential for ecological remediation through a photocatalytic approach.

Keywords *Citrus sinensis* · Green nanotechnology · CdO nanoparticles · RhB dye · Photocatalysis

✉ Suresh Ghotekar
ghotekarsuresh7@gmail.com

[1] Department of Chemistry, S.S.R College of Arts, Commerce & Science College, Savitribai Phule Pune University, UT of DD & DNH, Silvassa 396230, India

[2] Department of Chemistry, National Institute of Technology, Silchar, Assam 788010, India

[3] Department of Chemistry, Sikkim Institute of Science & Technology, Sikkim University, Sikkim, India

[4] Department of Chemistry, KPG Arts, Commerce, and Science College Igatpuri, Savitribai Phule Pune University, Maharashtra 422403, India

[5] Advanced Institute of Science and Technology, The University of Da Nang, Da Nang 500000, Viet Nam

[6] Institute of Analytical and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan

[7] Department of Environmental Energy and Engineering, Kyonggi University, Suwon-si 16227, Gyeonggi-do, South Korea

[8] Centre for Herbal Pharmacology and Environmental Sustainability, Chettinad Hospital and Research Institute, Chettinad Academy of Research and Education, Kelambakkam 603103, Tamil Nadu, India

[9] Department of Medical Biotechnology and Integrative Physiology, Institute of Biotechnology, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Thandalam, Chennai, 602105 Tamil Nadu, India

Published online: 27 June 2024

Research on Chemical Intermediates
https://doi.org/10.1007/s11164-024-05322-5

Insights into the promising heterogeneous catalysis of eco-friendly synthesized spinel $CuFe_2O_4$ nanoparticles for Biginelli reaction

Dnyaneshwar Sanap[1,2] · Lata Avhad[3] · Satish Ahire[4] · Mahmoud Mirzaei[5] · Deepak Kumar[6] · Suresh Ghotekar[7] · Nitin D. Gaikwad[1]

Received: 31 March 2024 / Accepted: 1 June 2024
© The Author(s), under exclusive licence to Springer Nature B.V. 2024

Abstract

Spinel copper ferrite magnetic nanoparticles ($CuFe_2O_4$ MNPs) are one of the prominent spinel ferrites due to their magnetic properties. As a result of the current investigation, the magnetic spinel copper ferrite nanoparticles ($CuFe_2O_4$ MNPs) were successfully fabricated via a green synthesis approach using freshly prepared Yogurt of cow milk as a capping agent by sol–gel auto-combustion route and its catalytic effect towards synthesizing ethyl 1,2,3,4-tetrahydro-2-oxo-4-aryl pyrimidine-5-carboxylate (DHPMs) scaffold was explored. Further, the phase formation, crystallinity, particle size, grain morphology, and the property of magnetism of bio-fabricated spinel $CuFe_2O_4$ NPs were explored by XRD, FESEM, EDX, FTIR, UVDRS, and VSM analysis. Furthermore, one-pot synthesis of DHPMs scaffold via multicomponent (MCR) Biginelli reaction was examined using biosynthesized spinel $CuFe_2O_4$ magnetic heterogeneous catalyst (C1 and C2 nanocrystalline phase). To achieve the high yields (90–98%) of DHPMs scaffold synthesis with an extensive range of aromatic carbaldehyde using minimum loading of heterogeneous catalysts within minimum reaction time and easy catalyst recovery by a peripheral magnet were examined. Therefore, this protocol presents an extensive scope for Biginelli reaction using magnetically separable heterogeneous catalyst synthesis via a green approach.

Extended author information available on the last page of the article

Synthesis of Novel Phenol based 1, 2, 3- Triazole by Using the Magnetically Active $Fe_3O_4.Cu_2O$ Nanocatalyst

Shaktising S. Pardeshi [1], Hemant R. Suryavanshi[2], Prakash K. Lahbane[3], Bharatkumar M. Sapkal [3, a)]

[1]*Department of Chemistry, KPG A.C.S. College Igatpuri, Dist.: -Nashik, (M. S.), India.*
[2]*Department of Chemistry, MIT World Peace University, Kothrud, Tal- Haveli, Dist.:- Pune, (M. S.), India.*
[3]*Department of Chemistry, MGSM'S Dadasaheb Dr. Suresh G. Patil College Chopda, Dist.: -Jalgaon, (M. S.), India*

a) Corresponding author: bharatkumar_sapkal@rediffmail.com

Abstract. Substituted Phenol based novel 1,2,3- triazole derivatives were synthesized via click chemistry approach efficiently by using the magnetically active $Fe_3O_4.Cu_2O$ nanocatalyst and characterized by the ^1H NMR, ^{13}C NMR, HRMS and IR spectroscopy. The catalyst has been used in lower concentration for the completion of reaction. $Fe_3O_4.Cu_2O$ nanocatalyst can promote the yields and reaction times over five runs without significant loss in its efficiency. This methodology has advantages such as simplicity, excellent yields and shorter reaction time. The catalyst was characterized by powder XRD, TEM, SEM and IR spectroscopy.

INTRODUCTION

Functionalized fused N-heteroaromatics have played a key role in the early stage of drug discovery [1, 2]. Phenol and their derivative have significant importance in biological activity. It has been observed that, synthesis of 1,2,3-triazoles from phenols and acids performed through multicomponent methodology [3]. Phenol based 1,4-disubstituted-1,2,3-triazole derivatives are potent against glioblastoma cells [4]. It is well known that heterogeneous catalysts possess intrinsic advantages over homogeneous catalysts. The number of organic transformations is carried out by using heterogeneous catalytic systems due to mild reaction conditions, thermal stability of catalysts, easy of handling, simple reaction workup, reusability and recyclability of catalysts [5]. Recently number of heterogeneous catalyst employed such as CuO [6], Copper-doped silica cuprous sulfate (CDSCS) [7], Nanoporous titania supported gold nanoparticles [8], graphene oxide/Fe_3O_4 [9], hydroxyapatite-encapsulated α-Fe_2O_3 as organic inorganic hybrid nanocatalys [10], Copper Supported on MWCNT-Guanidine Acetic Acid@Fe_3O_4 [11] have been successfully used to catalyze [3+2] cycloaddition reaction between substituted azide and different alkynes for the synthesis of variety of substituted 1,2,3-Triazole.

Fe_3O_4 nano material have potential catalytic activity. Fe_3O_4 nanocatlyast and their composite have been used in synthesis of Polyhydroquinolines in water [12], bis-coumarin derivatives[13], Enhanced Performance for Fischer–Tropsch Synthesis[14], quinolines[15], 1-substituted 1H-1, 2, 3, 4-tetrazoles [16], dihydropyrano[2,3-c]pyrazole [17]. Considering the use of mix metal oxide nanoparticles for organic transformations, herein we reported the simple and efficient route for the synthesis of novel phenol based 1,2,3-triazole derivative by using reusable $Fe_3O_4.Cu_2O$ catalyst.

Proceedings of the 4th International Conference on Condensed Matter & Applied Physics
AIP Conf. Proc. 3249, 020023-1–020023-8; https://doi.org/10.1063/5.0234864
Published under an exclusive license to AIP Publishing. 978-0-7354-5017-2/$30.00

10 August 2024 18:11:00

Scanned with OKEN Scanner

Discover Materials

Review

Bee venom loaded nanomaterials for cancer therapy: a novel approach

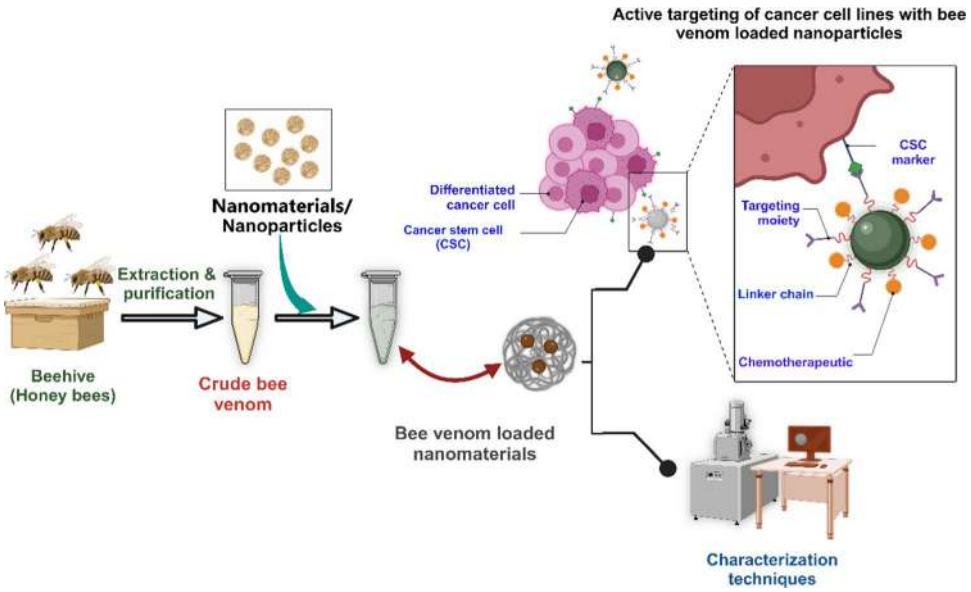
Vikram Jadhav[1,2] · Arun Bhagare[1] · Arpita Roy[3] · Dnyaneshwar Lokhande[2] · Shaktising Pardeshi[4] · Jayraj Aher[2]

Received: 31 January 2025 / Accepted: 21 May 2025
Published online: 01 June 2025
© The Author(s) 2025 OPEN

Abstract
Cancer remains a leading cause of death worldwide, underscoring the urgent need for innovative treatment strategies. While conventional cancer therapies are constrained, nanotechnology offers exciting opportunities for targeted and effective cancer treatments. The potential of bee venom—a naturally occurring substance known for its anti-cancer effects—to improve treatment outcomes has attracted considerable interest. This review article examines the creation and use of bee venom-loaded nanomaterials as a novel method for cancer targeting. By incorporating bee venom into nanomaterials, its release can be controlled, leading to better bodily distribution. Additionally, encapsulating bee venom within nanomaterials can amplify its cytotoxic effects on cancer cells and enhance its anti-inflammatory and immunomodulatory properties. Various nanomaterials, including liposomes, polymeric, and inorganic nanoparticles, have been explored to deliver bee venom. These nanomaterials offer numerous benefits, such as lower systemic toxicity, targeted delivery to tumor sites, and improved solubility. Bee venom-loaded nanomaterials (BVNMs) employ various mechanisms to combat cancer. Key components of bee venom, including melittin, apamin, and phospholipase A2, induce apoptosis in cancer cells. Consequently, with the enhanced effectiveness of existing therapies and targeted strategies addressing specific pathological pathways, using BVNMs can significantly improve patient outcomes, making this approach a highly promising tactic in the fight against cancer medicine. Applying nanotechnology and harnessing the unique properties of venom may improve therapeutic efficacy while reducing toxicity and facilitating targeted drug delivery. Further research and development in this area are essential to fully harnessing the therapeutic potential of BVNMs and improving the quality of life for individuals affected by cancer. The review paper highlights the importance of the scientific community continuing to explore the possibility of BVNMs, thus encouraging researchers to contribute to this crucial field.

✉ Vikram Jadhav, mevikramjadhav@gmail.com; ✉ Dnyaneshwar Lokhande, ddlokhande1175@gmail.com | [1]Department of Chemistry, M. V. P. Samaj's K. K. Wagh Arts, Science, and Commerce College, Pimpalgaon (B), Nashik 422209, Maharashtra, India. [2]Post Graduate Department of Chemistry, K. R. T. Arts, B. H. Commerce, And A. M. Science College, Nashik 422002, Maharashtra, India. [3]Research and Development Cell, Lovely Professional University, Phagwara 144411, India. [4]Karmaveer Punjababa Goverdhane Arts, Commerce and Science College Igatpuri, Nashik 422403, Maharashtra, India.

Graphical Abstract



Keywords Bee venom-loaded nanomaterials · Cancer therapy · Nanotechnology · Drug delivery · Biomaterials

1 Introduction

Cancer is one of the biggest killers of millions globally, necessitating urgent remedies. While traditional therapies for the disease have numerous flaws, nanotechnology may be one of the most promising alternatives for targeted and effective treatments [1–3]. Honeybees have been used therapeutically for thousands of years, and their venom is an essential component in traditional medicine. The potential therapeutic applications of bee venom (BV) have recently garnered significant attention in medicine despite widespread fear of being stung [4]. Among the many bioactive constituents found in BV, melittin is a potent peptide studied extensively due to its anticancer properties [5]. Among various bee species, the venom of *Apis mellifera* is particularly well-studied. This intricate blend of proteins, peptides, enzymes, and other bioactive substances presents an opportunity for identifying new medicinal compounds. The key component, melittin, is a cationic peptide that influences cellular membranes and triggers programmed cell death, called apoptosis. Because of its ability to promote apoptosis, melittin has gained attention as a candidate for cancer therapies [6]. BV has been used in medicine to treat various diseases and conditions, including arthritis [7], multiple sclerosis [8], and dermatologic diseases [9]. This use is considered a relatively new development in cancer therapy. Preliminary studies indicate that BV and melittin have strong anti-proliferative and anti-growth effects on neoplastic cells in both in vitro and in vivo experiments [10]. In recent years, special attention has been given to developing the combination of BV with nanomaterials so that while its medical effectiveness increases [11], its toxicity does not decrease. Nanomaterials offer a novel carrier system for delivering high-precision bioactive molecules, such as melittin, to cancer cells with minimal adverse effects. Researchers encapsulate nanostructures with BV or melittin to enhance drug delivery and achieve a targeted attack on neoplastic cells, thereby overcoming the problems posed by classical drug delivery [12]. The continuum of cancer treatment modalities, which include surgical intervention, radiotherapy, chemotherapy, hormonal therapy, immunotherapy, bone marrow transplantation, and personalised medicine [13–16]. Recently, scientists have begun studying the application of BV as a novel anticancer agent in oncology [17]. However, its direct application is limited due to BV's toxicity and probable allergenicity. Considering this limitation, scientists prepared nanomaterials to carry the BV, including liposomes, polymeric, and inorganic nanoparticles [18]. These nanocarriers shield BV from degradation, enable targeted delivery to cancerous cells, and reduce systemic toxicity. The intention behind loading BV with nanocarriers is to enhance both

therapeutic efficacy and safety in cancer treatments. Recent research has begun to investigate BV's potential as a therapeutic agent in oncology [19]. Recent research evidence suggests that melittin induces apoptosis in cancerous cells, a form of programmed cell death, through its effects on the cell membrane integrity and intracellular signaling pathways, particularly the activation of the caspase enzyme, which is involved in the apoptosis chain reaction [20–22].

Furthermore, melittin is not the sole constituent of BV associated with anticancer activity; apamin and phospholipase A2 have also been implicated. Apamin, a specific peptide, inhibits potassium channel activity, elevating intracellular calcium concentrations that subsequently initiate apoptotic signaling pathways [23, 24]. Recent studies have shown the viability of BV as an innovative therapeutic modality for oncological applications. BV comprises a sophisticated array of bioactive constituents exhibiting anti-neoplastic properties. Nonetheless, the direct utilization of BV is constrained by its inherent toxicity and potential allergenic reactions, which can be mitigated by encapsulating BV in nanomaterials. These nanomaterials shield BV, enhance its targeted delivery to neoplastic cells, and diminish systemic toxicity [25]. Breast pain, a prevalent issue among women, can be linked to a multitude of factors. The study shows the possible origins of breast pain, systematically classifying them into several overarching categories. Hormonal Fluctuations and variations in hormone concentrations, particularly estrogen and progesterone, are commonly implicated in breast pain. Such hormonal fluctuations may manifest during menstrual cycles, pregnancy, menopause, or as a consequence of specific pharmacological interventions [26–29]. Historical trauma or surgeries involving the breast and surrounding areas can lead to the formation of scar tissue or nerve damage, which may cause chronic pain. Conditions affecting the muscles, skeleton, and joints in the thoracic or shoulder areas can also contribute to sensations of breast pain. These conditions include costochondritis, the inflammation of the cartilage linking the ribs to the sternum, and muscle strain. While less common, breast pain can also be a warning sign of breast cancer [30]. It is imperative to seek guidance from a healthcare professional for any enduring or atypical alterations in breast condition. Specific hormonal therapies, including oral contraceptives or hormone replacement regimens, may induce breast tenderness or pain as a potential adverse effect. Breast pain may arise during or after breastfeeding due to conditions such as mastitis (inflammation of breast tissue) or obstructed milk ducts [31]. Breast tissue inflammation, commonly due to infections or irritants, may result in discomfort and sensitivity. Sometimes, benign, fluid-filled cavities in the breast can also lead to pain or discomfort. It's important to recognise that this is just a subset of possible causes of breast pain, and personal experiences can vary widely. For those experiencing ongoing or concerning breast pain, consulting a healthcare provider is essential for proper diagnosis and treatment [31].

The metabolic adaptations of quiescent cancer cells throughout the malignancy progression. However, BV is integrated into nanoparticle formulations for oncological treatment, predicated on the identified metabolic alterations. Dormant cancer cells manifest unique metabolic characteristics compared to actively dividing cells [32]. They frequently rely on oxidative phosphorylation for energy production and exhibit enhanced fatty acid oxidation. The bioactive molecules of BV could feasibly target metabolic pathways critical to the survival and proliferation of dormant cancer cells. Nanoparticles can administer BV directly to cancerous cells, enhancing their bioavailability and mitigating systemic toxicity. Such nanoparticles can be designed to target specific surface markers or receptors that are aberrantly overexpressed on dormant cancer cells. Therefore, this might improve its accuracy in targeting dormant cancer cells [33]. These nanoparticles, loaded with BV, can potentially disrupt the metabolic pathways of dormant cancer cells, leading to apoptosis or cell cycle arrest. They may also modify the tumour microenvironment and trigger an immune response against tumour growth. The potential benefits of BV-loaded nanoparticles encompass targeted delivery to inactive cancer cells, minimised systemic toxicity in comparison to conventional chemotherapy, the overcoming of drug resistance, and the possibility of synergistic effects with other treatment approaches [34]. Additional research is essential to thoroughly comprehend the mechanisms driving the therapeutic effects of BV-carrying nanoparticles in cancer treatments. It is imperative to carry out preclinical and clinical trials to evaluate these products' safety and therapeutic efficacy. Effectively formulating nanoparticles with enhanced delivery methods is vital for successful clinical applications. While the schema does not specifically name BV, it provides a detailed overview of the metabolic weaknesses in quiescent cancer cells that can be targeted therapeutically using BV-loaded nanoparticles. For example, phospholipase A2 can break down phospholipids in cell membranes, leading to apoptosis. Numerous studies have shown that apitoxin, also known as BV, exhibits anticancer effects across various cancer cell lines, including those from breast, lung, prostate, and colorectal cancers [35].

The available data indicate that BV should suppress the processes of tumorigenesis, slow the progression of metastasis, and enhance the effectiveness of conventional oncology treatments. For example, research has revealed that BV does not affect normal cells through cytotoxicity; thus, it remains a potential treatment method for oncological treatment. The fact that studies on concrete mechanistic pathways by which BV exerts its anticancer activities are still underway establishes that this bioactive compound holds promising anticancer activity [36]. Further research would be essential

for achieving this goal, as well as for enhancing the overall understanding of molecular underpinnings and developing successful BV-derived interventions for cancer patients. BV's broad therapeutic value stems from combining all these bioactive compounds in a unique blend. Apamin, phospholipase A2, and melittin are the most elaborately studied compounds [37]. As an effective cytotoxin, it primarily acts on neoplastic cells by rupturing cellular membranes. The action of melittin results in the penetration of pores into the phospholipid bilayer of the cell, thereby increasing the flux of ions and water. Breaking this membrane causes cellular swelling, induction of osmotic pressure imbalance, and apoptosis. Another mechanism through which melittin may induce apoptosis is activating intracellular signaling cascades associated with programmed cell death, including the caspase cascade. Apamin is another significant component of BV, known for its anticancer activity, as a small peptide that selectively and strongly inhibits potassium channels, thereby raising intracellular calcium levels. The latter can elicit numerous cellular responses, including activating apoptotic pathways and suppressing cellular proliferation [38]. The available studies have shown that apamin causes apoptosis in cancer cells and suppresses tumorigenesis in animal models. Moreover, phospholipase A2, a BV enzyme, hydrolyses phospholipids in the cellular membrane. Such hydrolysis can lead to the formation of arachidonic acid, which becomes a precursor to inflammatory mediators [18]. While inflammation is often a pathogenic force, it could also interact with the course of cancer progression. Phospholipase A2 can indirectly modulate cancer cell proliferation and survival by regulating an inflammatory environment [10]. Of course, these three are just a few among the many bioactive molecules that comprise this intricate blend known as BV. More information is needed to fully elucidate how these three compounds collaborate in entirety and synergistically present themselves to deliver their anticancer activity against BV. Many in vitro and in vivo studies have investigated the anticancer activity of BV [39].

2 Nanomaterials for drug delivery

Figure 1 presents various drug delivery methods, focusing on nanoparticles (NPs), illustrating the types of drug delivery systems, including liposomes, inorganic NPs, and polymeric NPs. This area is of immense importance in developing targeted drug delivery methods to deliver therapeutic agents specifically to neoplastic cells while minimizing adverse effects on healthy tissues. Among various drugs investigated for potential uses in cancer therapy, BV has emerged as one that best combines cytotoxic properties with good prospects for drug delivery applications. Scientists are now working on incorporating BV into these nanomaterials to enhance the effectiveness of cancer drugs without even increasing toxicity.

2.1 Liposomes

This study demonstrates the use of liposomes as a drug delivery system [40–42]. The following methods are presented here, describing how drugs are inserted into liposomes, how the drugs are taken up by cells, and how target specificity and prolonged blood circulation can be achieved through surface modification. Melittin is a principal constituent of *Apis mellifera* venom, exhibiting significant biological activity; however, the possibility of severe side effects limits its use. To overcome such obstacles, researchers have attempted to encapsulate melittin within nano-liposomes to render it nontoxic and more potent for therapeutic applications [43]. Figure 2 illustrates a promising and innovative treatment solution for cancer utilizing nanomaterials loaded with apitoxin. The given nanocarrier is a liposome characterized by

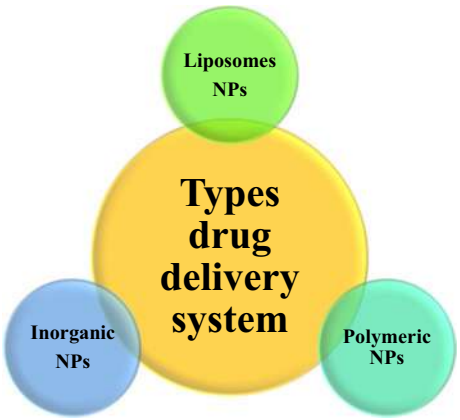


Fig. 1 Types of drug delivery systems

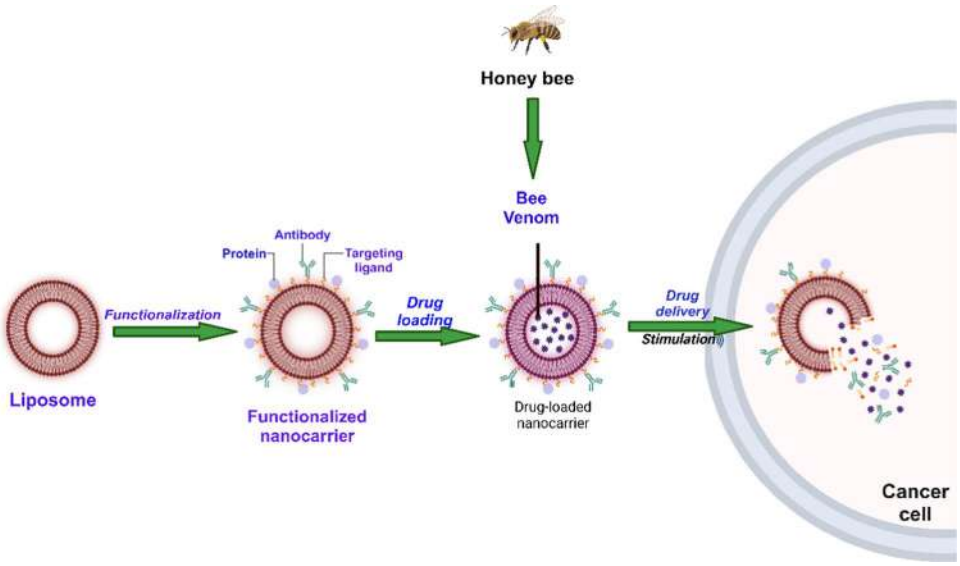


Fig. 2 Liposome innovative drug delivery system for cancer treatment

the spherical lipid bilayer structure. It is conjugated with a specific protein and the targeting ligand to achieve targeted delivery to the malignant cells. This research utilizes apitoxin, known for its potential as an anti-cancer agent, to encapsulate it inside liposomes [44]. As soon as the nanocarrier reaches a cancerous cell, it provokes a cellular response that leads to the release of apitoxin and subsequent death of the cancerous cell. This new drug delivery concept is a targeted and effective cancer therapy method that can potentially improve a patient's prognostics [45].

In one recent experiment, Mao et al. investigated the potential ability of melittin nano-liposomes to treat hepatocellular carcinoma (HCC). Their studies showed that actual retardation of the growth of HCC cells occurred both in vitro and in vivo by nano-liposomes encapsulated melittin. Interestingly, the nano-liposome formulation has been associated with decreased inflammation and fewer allergic reactions than the unencapsulated melittin. The study suggests that melittin nano-liposomes could be a better option for therapeutic use in HCC due to an enhanced safe and anti-tumour effectiveness profile [44]. The possible use of melittin nano-liposomes to treat hepatocellular carcinoma (HCC) was examined by Mao et al. in a recent experiment. In vitro and in vivo, their research demonstrated that melittin-encapsulated nano-liposomes actually slowed the proliferation of HCC cells. It is interesting to note that compared to unencapsulated melittin, the nano-liposome formulation has been linked to less allergic responses and reduced inflammation. Because of its improved safety and anti-tumor efficacy profile, melittin nano-liposomes may be a preferable choice for therapeutic treatment in HCC, according to the study [44]. An effort has been made by Badivi et al. to create the ideal liposomal formulation for BV delivery to A549 lung cancer cells. They created PEGylated liposomes that contained BV (BV-Lipo-PEG), and then they thoroughly characterized them utilizing a variety of techniques. Formulation F3 displayed a relatively limited [46].

Abd El-Gawad et al. aimed to formulate and characterize nanoliposomes loaded with BV (BV@NLs) and evaluate their anticancer efficacy on HepG-2, MCF-7, and HCT-116 cancer cell lines. The synthesized BV@NLs exhibited a spherical morphology with an average diameter of 230.9 ± 5.21 nm and a positive zeta potential of + 46.5 mV. The results showed that BV@NLs exhibited higher anticancer activity against all three cell lines than the crude BV. The formulation exhibited selective cytotoxicity, demonstrating the best effectiveness against the HCT-116 cell line, yielding an IC50 value of 4.16 µg/mL. Moreover, BV@NLs influenced the mRNA expression of genes related to apoptosis. The study demonstrated that the encapsulation of BV within nanoliposomes led to more effective in vitro anticancer efficacy against the cell lines HepG-2, MCF-7, and HCT-116. The nano-liposomal delivery system offers a promising approach to addressing the challenges of crude BV applications, including allergic reactions, pain, and nonspecific cytotoxicity [47]. Kim and Song evaluated the potency of liposome-entrapped BV compared with conventional BV as a therapeutic agent in mice models for AD. Phthalic anhydride was used to induce AD in the mice. The treatment groups consisted of mice receiving BV liposomes and those treated with conventional BV. The treatment with BV liposomes profoundly reduced lymph node mass, decreased serum IgE concentrations, and decreased skin thickening and inflammation, resulting in a lower density of mast cells compared to the traditional therapy of conventional BV. Pro-inflammatory cytokines (IL-1, IL-4, and IL-6) and chemokines (TSLP and CCL22) were also significantly lower in the BV liposome-treated group. The liposomal formulation from BV is likely to enhance the efficacy of the treatment for atopic dermatitis, due to better control of the inflammatory

response [9]. Pinto et al. have utilised liposomes encapsulating BV as a potential delivery system for various anti-cancer applications in cancer therapy. These niosomes demonstrated excellent biocompatibility and therapeutic efficacy against different cancer cell lines, and are proposed as promising candidates for cancer treatment. The encapsulated formulation of BV showed low cytotoxicity compared to its non-encapsulated counterpart. This delivery system emphasizes more critical safety features. Further studies are warranted to assess the in vivo efficacy and safety profiles of these noisome-encapsulated BVs for potential clinical applications [48].

2.2 Polymeric nanoparticles

Cancer is a highly debilitating disease characterized by the uncontrolled proliferation and diffusion of abnormal cells, yet it still poses a severe global health problem. With the progress done with conventional treatment approaches like surgical intervention, chemotherapy, and radiotherapy, a plethora of cancers continue to be challenging to manage effectively [49]. This has led to increasing researchers exploring innovative treatment methods for this disease, prominently featuring nanotechnology. Nanomaterials, characterised by their distinct physicochemical properties and targeted delivery abilities, show great potential for improving the effectiveness of cancer treatment results [50, 51]. However, research on encapsulating bioactive compounds of natural origins within nanomaterials for oncology purposes is of more significant interest. BV has gained considerable scholarly attention among these bioactive compounds due to its extensive range of biological activities [52].

BV is a complex mixture of various components, including peptides, enzymes, and amines, many of which exhibit antitumor properties. However, the intravenous administration of BV can lead to toxic side effects, which limits its therapeutic use. Nanostructured materials, like polymeric nanoparticles, liposomes, and inorganic nanoparticles, can effectively deliver BV [53]. Encapsulating BV within such nanostructures enables the safeguarding against degradation, augmentation of solubility, and targeted delivery to neoplastic cells. Furthermore, nanomaterials enable the controlled release of a higher dose of BV to ensure therapeutic efficacy over extended periods without increasing its toxicity [54]. Polymeric nanoparticles are one of the most promising systems for delivering BV, owing to their vast flexibility in functionalization according to the application's specific needs (Fig. 3). These biocompatible polymers, such as poly(lactic-*co*-glycolic acid) and polycaprolactone, synthesize biodegradable nanoparticles with controlled degradation kinetics [55]. The type and properties of the polymers can be carefully tuned to modulate the size, shape, surface charge, and release kinetics of the particles, thus allowing for much flexibility in controlling their behavior in vivo. Several methods may be used to introduce the BV into polymeric nanoparticles. Some of these methods include encapsulation within the polymeric matrix through the synthesis of nanoparticles [56]. This can be achieved through solvent evaporation, emulsification, and salting-out techniques [57]. In other cases, the BV could be adsorbed onto the surface of the pre-formed nanoparticles or chemically conjugated onto the polymer backbone. The conjugation of targeting ligands to the surface of polymeric nanoparticles can also make them even more specific to cancer cells. Such ligands may range from monoclonal antibodies to aptamers or small molecules capable of binding to particular receptors, typically overexpressed in cancerous cells, thereby guiding the BV delivery system to the target area. Such a targeted technique may reduce off-target effects

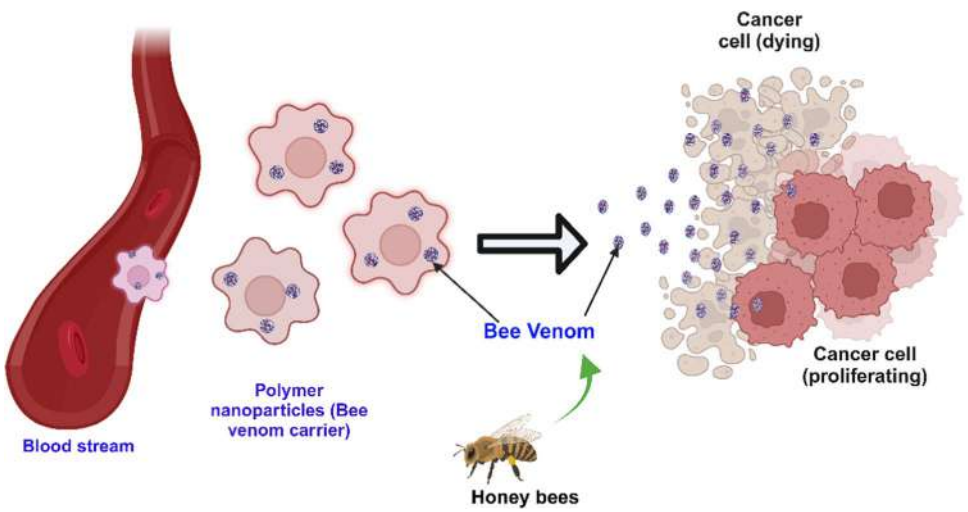


Fig. 3 Cell-mediated drug delivery for cancer treatment

but increase therapeutic efficacy [58]. Chatzi Memet et al. developed polymeric nanoparticles to overcome the harmful activities associated with melittin, a highly active peptide extracted from the venom of *Apis mellifera*. Although this peptide is highly promising for therapeutic use, its cytotoxicity poses a major limitation to its extensive medical application. The authors utilized RAFT polymerisation to prepare negatively charged particles for loading melittin within them. The encapsulation process yielded nanoparticles that exhibited decreased toxicity compared to their non-encapsulated melittin counterpart, indicating the potential of this approach for safely utilizing melittin in treatment purposes [59]. Sharaf et al. studied the developed chitosan nanoparticles loaded with BV, also known as Apitoxin, as a new delivery drug to overcome the problem of resistance to antimicrobial drugs. Chitosan was prepared from the exoskeleton of bees, which was then converted into nanoparticles based on the ionotropic gelation method. The obtained nanoparticles have been characterised by X-ray diffraction, FTIR spectroscopy, dynamic light scattering, zeta potential, and transmission electron microscopy. The outcomes demonstrated that Apitoxin was successfully encapsulated in the nanoparticles. Moreover, it was also noticed to be spherical and have uniform size distributions, along with negative ζ-potentials. The nanoparticles of Api@ChB exhibited significantly improved antimicrobial efficacy against multiple bacterial and fungal species compared to naked ChB nanoparticles and Apitoxin when used alone. Moreover, the nanoparticles induced apoptosis in both normal and cancerous cell lines in a concentration-dependent manner. Therefore, this study demonstrates that Api@ChB nanoparticles might become an effective natural therapy for infection and cancer diseases [60]. Ye et al. studied research designed to synthesise a stable and biocompatible formulation of melittin-loaded nanoparticles to show effective tumour therapy, thus avoiding systemic toxicity. A lipid-coated polymeric nanoparticle, MpG@LPN, composed of a core of melittin and poly-γ-glutamic acid as an intermediary lipid membrane layer, with a PEGylated outer shell, was carefully designed. The encapsulation efficiency of the synthesized melittin through self-assembly was found to be high, along with stability under physiological conditions. PEG modification significantly reduced hemolytic activity and nonspecific cytotoxicity, whereas targeting molecules ensured selective binding to tumor cells by inducing apoptosis. In vivo, intravenous injection investigations showed strong tumor suppression with no hemolysis or tissue toxicity. The MpG@LPN formulation represents an excellent approach to addressing the challenges of using melittin in clinical applications and holds great promise for cancer chemotherapy [61, 62].

Promising preclinical research activities regarding the loading of polymeric nanoparticles with BV have shown anticancer activities that can induce apoptosis in various cell lines, including those of breast, lung, colon, and prostate cancer [62]. Complex and varied mechanisms are responsible for these anti-cancer effects, including apoptosis, autophagy, and the inhibition of angiogenesis [63]. Besides its direct cytotoxic role in the case of nanoparticles loaded with BV, these may indirectly affect the tumor microenvironment. The tumor microenvironment is a complex network comprising cells, an extracellular matrix, and blood vessels essential for tumour growth and progression. BV can also inhibit angiogenesis, reduce inflammation, and promote immune responses that could be valuable modulators in tumor regression [64]. While preliminary studies have yielded promising results from preclinical tests, applying BV-encapsulated polymeric nanoparticles to cancer treatment is complex. Several issues need careful attention. These include matters of safety, efficacy, and regulatory compliance. Such nanoparticles should be strictly evaluated in preclinical investigations for their biodistribution, toxicity, and therapeutic efficacy in animal models. The scalable production of nanomaterials for clinical applications also requires strict manufacturing protocols that ensure reproducibility and quality. Nanomaterials encapsulated in BV represent a novel approach to anticancer therapy. Combining the unique characteristics of BV with the benefits of nanotechnology will soon make it possible to translate targeted and effective treatments for various cancers. Further research is needed to fully elucidate these nanomaterials' mechanisms of action and overcome the translational hurdles that must be addressed before they reach the clinic. The successful encapsulation of BV into nanomaterials may provide an essential new tool in the arsenal of strategies available for cancer management [7, 49].

2.3 Inorganic nanoparticles

Cancer remains a highly deadly disease characterised by the uncontrolled growth and multiplication of abnormal cells. It continues to pose a significant health risk today. Although there have been remarkable advancements in traditional treatment methods, including surgery, chemotherapy, and radiation, many cancer types remain difficult to treat effectively. This challenge has spurred many research initiatives focused on innovative therapeutic strategies, such as nanotechnology. The unique characteristics and targeted delivery abilities of nanostructured materials show great promise in improving the efficacy of anticancer treatments [65]. One of the most promising studies on encapsulation within nanostructured materials is related to natural-origin bioactive compounds for oncological treatment. BV has received more attention in academic circles because of its varied biological activity. BV is a complex mixture of peptides, enzymes, and amines, most of which have been

shown to have anticancer properties. However, the systemic administration of BV can lead to potential side effects, which limit its clinical application. Nanomaterials, such as polymeric nanoparticles, liposomes, and inorganic nanoparticles, can be excellent delivery carriers for BV [66]. Encapsulating the substance of BV within those nanostructured systems makes it possible to prevent degradation, enhance the solubility of the substance, and direct the delivery component toward cancer cells. Nanomaterials can also make it feasible to control the release of the therapeutic agent from the delivery site for protracted therapeutic activity without harmful effects [67]. Metal oxide nanoparticles, including iron oxide [68], zinc oxide [69], quantum dots [70], cadmium selenide, and cadmium telluride are possible new BV delivery agents [71]. The nanoparticles under discussion possess unique properties, including a high surface area, adjustable dimensions, and shape, which can be tailored to the specific purpose of the drug delivery system, as well as excellent biocompatibility for pharmaceutical delivery purposes [72]. Research on the potential applications of MONPs in cancer therapy is extensive. For instance, with targeting ligands, iron oxide nanoparticles can bind selectively to malignant cells. Moreover, they could be used as contrast agents for MRI to observe nanoparticle distribution and tumor response noninvasively [73].

Nagy et al. [74] investigated the antineoplastic activity of BV in a hepatocellular carcinoma (HCC) model, comparing it to iron oxide nanoparticles conjugated with silver and chitosan (Fe_2O_3@Ag@Cs NPs). It was observed that unloaded and drug-loaded Fe_2O_3@Ag@Cs NPs were more effective than BV for decreasing tumor markers and associated gene expression in HCC progression. This implies that inorganic nanocarriers loaded with therapeutic agents may offer a more beneficial approach to HCC treatment than traditional BV therapy [74]. Qi et al. [75] conducted a study exploring the targeted delivery of the bioactive melittin, isolated from bees, into cervical cancer HeLa cells using graphene oxide-based magnetic nanocomposites termed PEG-GO-Fe_3O_4. Researchers determined that PEG-GO-Fe3O4 nanospheres encapsulated and shielded MEL, resulting in a controlled release profile of the therapeutic agent over an extended period. This new delivery system significantly enhanced the anticancer effects of MEL in HeLa cells, resulting in cell membrane disruption and ultimately leading to cell lysis. The encapsulation and stabilisation of MEL primarily involved the PEGylated graphene oxide fragment in the nanocomposites, while the controlled release mechanism was attributed to the superparamagnetic nanoparticles. This novel drug delivery system presents a high potential for improving melittin therapeutics in cancer therapy [75]. Quantum dots possess excellent optical properties, enabling them to exhibit bright fluorescence upon excitation. Such a property has enabled the live tracking of nanoparticle internalisation by cancerous cells, providing a remarkably detailed understanding of drug delivery and biodistribution. In addition, the quantum dots can be conjugated with therapeutic agents, such as BV, which have improved delivery to the targeted cells and an enhanced therapeutic effect. Methods of entrapping BV into inorganic nanoparticles: different methods for entrapment in inorganic nanoparticles are permitted [76]. One method involves loading the nanoparticle matrix with encapsulated BV using layer-by-layer assembly or cross-linking techniques. Alternatively, the BV can be adsorbed onto the nanoparticle surface or chemically conjugated. In addition to these modifications, targeting ligands can be conjugated to the surface of the inorganic nanoparticles to enhance specificity for cancer cells. Such ligands may include monoclonal antibodies, aptamers, or small molecules that selectively bind to specific receptors overexpressed on cancer cells, facilitating targeted delivery through the blood vessels [77]. In this sense, this strategy might enable the overcoming the off-target effects observed and enhance the therapy's efficacy [78].

Inorganic nanoparticles that encapsulate BV have shown preliminary promise in exhibiting anticarcinogenic properties. Evidence suggests these nanoparticles induce apoptotic cell death in various malignancies, including breast, lung, colorectal, and prostate cancer cell lines. The mechanisms through which they carry out this anticancer effect may be intricate, involving pathways such as apoptosis, suppression of autophagy, and inhibition of angiogenesis. Besides their direct cytotoxic effects, BV encapsulated in inorganic nanoparticles might also indirectly alter cancer progression by modifying the tumor microenvironment. This microenvironment comprises a complex network of cellular components, extracellular matrix elements, and blood vessel structures that can facilitate tumour growth and proliferation. Research indicates that BV can inhibit angiogenesis, decrease inflammation, and bolster host immunity, potentially reducing tumor size. Despite the encouraging findings from preclinical studies, the clinical application of inorganic nanoparticles loaded with BV in cancer treatment raises serious concerns. Key considerations include safety, efficacy, and adherence to regulatory standards. Therefore, preclinical studies must be meticulously designed to assess these nanoparticles' biodistribution, toxicity, and therapeutic response in animal models. Additionally, to enable large-scale clinical use, it is essential to establish manufacturing protocols that guarantee consistent quality and output [79, 80].

3 Development and characterization of bee venom-loaded nanomaterials (BVNMs)

Developing highly efficient and effective BVNMs requires an in-depth and careful analysis of the encapsulation method and subsequent characterization processes. A wide range of techniques and methods can be used to encapsulate BV in the appropriate nanocarriers, with distinct advantages and disadvantages that will be considered in their application. The most frequently used encapsulation technique is the solvent evaporation method. This method involves, first of all, dissolving both the polymeric material and BV in a common solvent. This solvent is then evaporated from the solution, removing it [81]. Evaporation can be carried out through several methods, including spray-drying, lyophilization, and solvent casting. The characteristics of the final product will also vary depending on the method used. In addition to the solvent evaporation method, layer-by-layer assembly is another highly efficient and advantageous approach. This sophisticated technique is the opposite of the solvent evaporation method, in which oppositely charged polyelectrolytes are systematically deposited onto a designated substrate, eventually forming a multilayer structure that can encapsulate BV [82]. This multilayer structure may then be permeated with BV by the alternate addition of solutions containing BV, which deposits oppositely charged polyelectrolytes. Following the successful preparation of the BVNMs, it is necessary to characterise them in depth and systematically to determine their quality and suitability for various therapeutic applications. Characterization encompasses a detailed assessment of several key factors, including but not limited to particle size and distribution, encapsulation efficiency, release kinetics, and the biocompatibility of the produced nanomaterials. Advanced methods, such as dynamic light scattering (DLS) and scanning electron microscopy (SEM), can determine particle size and distribution information, providing vital insights into the physical attributes of particles. The encapsulation efficiency of the nanocarrier-bound BV can be precisely measured using established methods, such as HPLC or UV–Vis spectroscopy, so that the amount of venom successfully encapsulated is clearly understood. Moreover, the kinetics of release evaluation is essential. It can be evaluated through in vitro studies on release, which gives insight into the time trend of how the BV is released from the nanomaterials. Additionally, by combining both in vitro and in vivo models, the biocompatibility of the developed nanomaterials can be rigorously assessed to ensure their safety for biological applications. Figure 4 represents an MTT assay. This is a colorimetric assay that aids in determining the cytotoxic activity

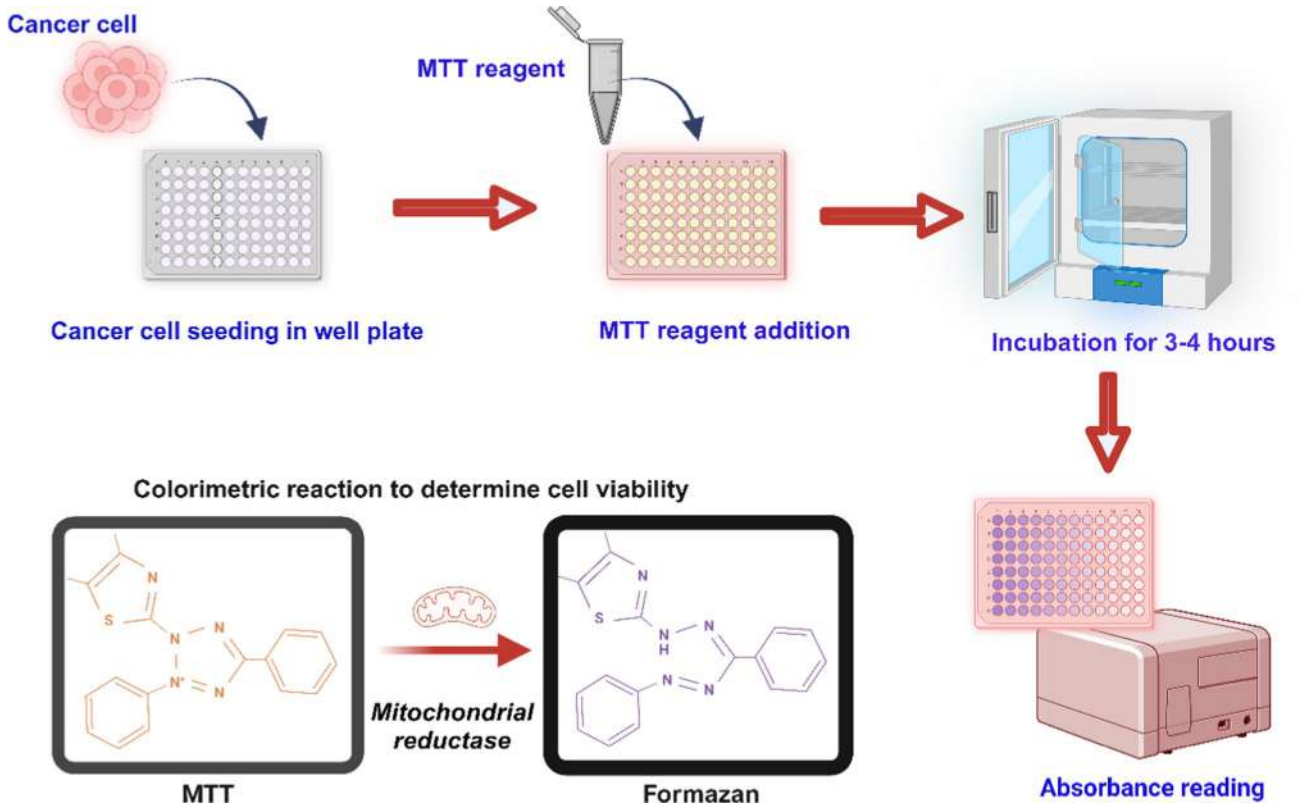


Fig. 4 MTT assay cytotoxicity evaluation

of encapsulated nanomaterials containing BV against neoplastic cells. The neoplastic cells are sown in a multiwall plate and further treated with the above nanomaterials. The cell culture requires the addition of the MTT reagent, a yellow tetrazolium compound. Metabolically active cells reduce MTT to formazan, a purple-colored product. The amount of formazan present can be quantitatively measured in a spectrophotometer, thus indirectly providing a measure of cell viability. Compared to untreated control cells, the lower absorbance suggests that the nanomaterials induce cytotoxicity, possibly through the activation of cellular targets by the components of BV that it releases [12, 36].

Thus, the characterisation of BVNMs in such advanced methodologies may give scientists and researchers optimized properties of nanomaterials toward targeted therapeutic applications (Table 1). This means the resultant products would be safe and effective for medical treatment and intervention [103].

4 Mechanisms of action of BVNMs in cancer therapy

4.1 Direct cytotoxic effects of BV components on cancer cells

The accompanying illustration visually represents the deliberate targeting of CSCs using nanoparticles. Figure 5 illustrates a nanoparticle that selectively delivers chemotherapeutic agents to CSCs. This nanoparticle includes a targeting moiety, a linker chain, a universal nanoparticle core, and a chemotherapeutic payload. Its specificity to CSCs is attributed to its targeting moiety, which recognizes specific CSC markers. The linker chain connects the targeting moiety, the chemotherapeutic payload, and the nanoparticle core. This targeted delivery approach has been shown to significantly enhance the efficacy of cancer treatments by ensuring that the chemotherapeutic drug reaches the CSC site while minimizing systemic toxicity and adverse effects on healthy cells. Laboratory research, carried out in vitro using cultured cancer cells, has yielded valuable information regarding the direct impact of BV on cancer cells. These studies confirmed that BV could cause programmed cell death, or apoptosis, in different cell lines of human cancers, such as prostate, breast, lung, and colon carcinoma. Indeed, it has been established that BV exerts its anticancer effects through multiple mechanisms. The chief constituent of BV is melittin, which is potent and capable of permeabilizing cell membranes, resulting in osmotic disruption and subsequent cell death. BV can also initiate apoptotic pathways by up-regulating the expression of pro-apoptotic proteins and down-regulating anti-apoptotic proteins. In addition, research indicates that BV inhibits angiogenesis, a process involved in forming new blood vessels, which is essential for the growth and spread of tumors. Studies using animal cancer models have further validated the anticancer potential of BV. These studies indicate that BV might inhibit metastasis, prevent tumor proliferation, and enhance the effectiveness of conventional anti-cancer therapies [92]. For example, in animal models of prostate, lung, and breast cancers, it has been shown that BV inhibits the formation of a tumour. It is crucial to recognize that the efficacy of BV as an anticancer agent is influenced by factors such as the type of cancer, dosage, and route of administration. Nevertheless, the existing data suggests that BV may represent a valuable therapeutic agent in the battle against cancer. Additional research is necessary to elucidate the mechanistic pathways of BV and develop effective therapies based on BV for cancer patients. Mundekkad and Cho probed into how nanoparticles induce apoptosis in neoplastic cells. Their results showed that nanoparticles primarily kill neoplastic cells by inducing ROS. Apart from inducing apoptosis by generating reactive oxygen species, nanoparticles can influence protein expression, interact with the immune system, interfere with transcriptional processes, and target vulnerabilities in cancerous cells. These functions often act in concert with the eventual death of the cancerous cell lines through regulated cell death [93] (Fig. 6).

4.2 Induction of apoptosis and cell cycle arrest by BVNMs

BV, a mixture of peptides and enzymes, has attracted many academic researchers due to its potential anticancer activity. Unfortunately, its direct use in the clinical environment is hampered by its low bioavailability and intrinsic systemic toxicity. Researchers have thus explored the encapsulation of BV within nanomaterials, resulting in BV-loaded nanomaterials, also known as BVNMs [47, 94]. This new approach has shown promising results in various cancer models and appears promising as a potential therapeutic application. One of the primary mechanisms by which BVNMs exert their anticancer activity is by inducing apoptosis, a programmed cell death process that occurs in an orderly manner. Figure 7 has been made based on the two antagonist roles that BV, one of whose bioactive compounds is melittin, plays in neoplastic cells and cardiomyocytes. While melittin can cause apoptosis in cancerous cells to allow for regression, simultaneously, it has cardiotoxicity, leading to myocardial tissue damage. To overcome this drawback, scientists are researching nanomaterials

Table 1 Characteristics and Anticancer Activity of Honey-Based Vesicle (BV)-Loaded Nanomaterials

Bees species/NPs/NMs/drug	Characteristics methods/techniques	Efficiency/results	Applications	Refs.
BV, Nanoliposomes	Spherical shape, average size of 230.9 ± 5.21 nm, positive charge ζ-potential of 46.5 mV	Vigorous anticancer activity against HepG-2, MCF-7, & HCT-116 cell lines compared to crude BV. Selective cytotoxicity against HCT-116 cell line with IC50 of 4.16 µg/mL. Modulates mRNA expression of apoptosis-related genes	Increased anticancer activity of BV when encapsulated in nanoliposomes. (IC50 of 4.16 µg/mL)	[47]
BV, cross-linked chitosan microspheres, doxorubicin	Enteric-coated, emulsion cross-linking method, spherical morphology, no aggregation, resistance to swelling in upper GIT	High percentage yield (80–92.35%), increased entrapment efficiency with higher drug: polymer ratio, sustained release, effective against prostate cancer cells (PC3) compared to doxorubicin, induces apoptosis & reduces necrosis in PC3 cells, does not affect normal oral epithelial cells (OEC)	Potential for prostate cancer therapy due to targeted delivery of BV to the colon, avoiding degradation in the upper gastrointestinal tract	[56]
BV, chitosan nanoparticles (CSNPs), polyethene glycol (PEG), GE11 peptide	Surface modification with PEG and GE11 peptide, spherical morphology, size distribution & zeta potential measured by DLS, entrapment efficiency determined by Bradford method	Higher cytotoxicity against HepG2 cells than SMMC-7721 cells, more muscular cellular uptake, reduced cell migration, improved cancer suppression, promotes cancer cell death by increasing ROS production, activating mitochondrial-dependent pathways, inhibiting EGFR-mediated tyrosine kinase cascades, enhancing p38-MAPK, anti-tumour properties in HCC-induced mice, improved liver function and architecture without causing significant toxicity	Potential for targeted therapy of hepatocellular carcinoma, particularly EGFR over-expressed tumours	[47]
BV, fungal chitosan nanoparticles (NFC) from Fusarium oxysporum	NP size, loading capacity, entrapment efficiency, pH & time-dependent release, FTIR spectroscopy, DLS, TEM, protein assay	Potent anticancer activity against HeLa cervix carcinoma induces apoptosis, IC50 = 200 µg/mL, favourable structural & biochemical physiognomies, & augmented anticancer bioactivity	Potential for natural anticancer agent against cervix carcinoma	[83]
BV, liposomes, polyethylene glycol (PEG)	Dynamic light scattering, transmission electron microscopy, Fourier transform infrared spectroscopy, size distribution, PDI, entrapment efficiency, release kinetics, pH-dependent release	Improved stability, higher entrapment efficiency, increased cytotoxicity against A549 cell lines, induced apoptosis, decreased expression of MMP-2, MMP-9, and Cyclin E, increased expression of Caspase3 and Caspase9	Potential for lung cancer therapy	[46]
BV (Apitoxin), chitosan nanoparticles from bee exoskeletons	XRD, FTIR, DLS, zeta potential, TEM analysis	Antimicrobial activity against six common human pathogens, anticancer activity against Caco2 ATCC ATP-37 and HepG2 ATCC HB-8065 cancer cell lines, spherical shape, uniform size distribution, non-aggregation, pH-dependent release	Potential for antimicrobial and anticancer therapy	[60]

Table 1 (continued)

Bees species/NPs/NMs/drug	Characteristics methods/techniques	Efficiency/results	Applications	Refs.
BV, niosomes	Particle size, polydispersity index (PDI), zeta potential, ultra-high-performance liquid chromatography (UHPLC) analysis	Anticancer activity in gastric, colorectal, breast, lung, and cervical cancer models, anti-inflammatory activity, safety assessment in vitro and ex vivo	Potential for primary or adjuvant cancer therapy	[48]
BV, iron oxide nanoparticles from *Syzygium aromaticum*	UV–visible spectroscopy, SEM, EDAX, FT-IR, XRD, particle size analysis	Increased antioxidant activity, spherical shape, rough surfaces, average size of 52 nm, enhanced anticancer activity against lung cancer cell line when combined with BV	Potential for alternative treatment for human lung cancer	[64]
BV, chitosan nanoparticles (B-Cs-NPs) from honeybee exoskeletons	Cytotoxicity assay (MTT), morphological observations, histopathological examination	Enhanced anticancer activity against CaCO-2, HEp-2, and MCF-7 cancer cell lines compared to BV alone, induced apoptosis, concentration-dependent cytotoxicity	Potential for cancer therapy	[84]
BV, poly(lactic-co-glycolic acid) (PLGA)	Double emulsion-solvent evaporation, FT-IR spectroscopy, differential scanning calorimetry (DSC), X-ray diffraction (XRD), sodium dodecyl sulfate–polyacrylamide gel electrophoresis (SDS-PAGE)	Sustained-release profile over 1 month, encapsulation efficiency, drug loading, particle size, zeta-potential, surface morphology	Potential for improving patient quality of life by reducing injection frequency	[55]
Superparamagnetic iron oxide@silver@chitosan	Biochemical analysis (ALT, AST, ALP, AFP, DTL, DUSP1, SOCS2, NFKB1A), gene expression analysis	Significant reduction in ALT, AST, ALP, AFP, down-regulation of DTL, up-regulation of DUSP1, SOCS2, and NFKB1	Treatment of hepatocellular carcinoma	[74]
Honey bee (*Apis mellifera*) venom; Niosomes; BV	Particle size (150.4 ± 3.7 nm), polydispersity index (PDI of 0.162 ± 0.008), thin-film hydration method, extrusion, dynamic light scattering	GI50 values between 12.37 ng/mL and 14.72 ng/mL for in vitro gastric, colorectal, breast, lung, and cervical cancer models; IC50 of 28.98 ng/mL for anti-inflammatory activity; Encapsulation increased safety	Potential primary or adjuvant cancer therapies	[48]
Honey bee (*Apis mellifera*) venom; Niosomes; Melittin	Thin-layer hydration method, particle size, polydispersity index, encapsulation efficiency, release kinetics, stability, morphology, hemolysis, apoptosis, cell cytotoxicity, invasion, migration, real-time PCR, histopathology, P53 immunohistochemistry, renal and liver enzyme activity	Enhanced targeting, encapsulation efficiency, PDI, release rate, anti-cancer effect on breast cancer cell lines, affects gene expression (down-regulates Bcl2, MMP2, MMP9; up-regulates Bax, Caspase3, Caspase9), enhances apoptosis rate, inhibits cell migration and invasion, reduces mitosis index, invasion, and pleomorphism, no significant difference in renal and hepatic biomarker activity or P53 expression	Potential treatment for breast cancer	[85]
Honey bee (*Apis mellifera*) venom; Micelles; D-melittin (D-amino acid melittin)	RAFT polymerization, pH-sensitive polymer carrier, micelle formation, endosomal pH dissociation, cytotoxicity, hemolysis, immunogenic cell death (ICD), in vivo studies	Significant cytotoxicity, pH-dependent hemolysis, induced ICD (CRT, HMGB1, ATP release), superior safety profile in vivo, and improved tumour growth inhibition	Cancer therapy, potential clinical translation for cytotoxic peptides as anti-cancer agents	[86]

Table 1 (continued)

Bees species/NPs/NMs/drug	Characteristics methods/techniques	Efficiency/results	Applications	Refs.
Honey bee (*Apis mellifera*) venom; Niosomes; Melittin	Thin-film hydration method, cytotoxicity, apoptosis, real-time PCR, immunocytochemistry, wound healing assay	IC50 values of 0.69 µg/mL, 1.02 µg/mL, and 2.56 µg/mL for A549, Calu-3, and MRC5 cells, respectively; Increased expression of Bax and Casp3, decreased expression of Bcl2; Inhibited cancer cells migration	Potential treatment for non-small cell lung cancer	[39]
Citric acid-functionalized Fe3O4 magnetic nanoparticles (CA-MNPs); Doxorubicin (DOX); Melittin (MEL)	Coprecipitation method, loading efficiency (LC–MS/MS), in vitro release profiles (LC–MS/MS), in vitro MTT assay	100% loading efficiency for DOX and MEL, pH-dependent release (enhanced at pH 4.5), synergistic antitumor effect between DOX and MEL	Magnetically targeted cancer therapy	[87]
Graphene oxide (GO)-based magnetic nanocomposites (PEG-GO-Fe3O4); Melittin (MEL)	FTIR spectroscopy, TEM, magnetic response, in vitro cytotoxicity, cell membrane pore formation	Enhanced inhibition effect on HeLa cells, induced pore formation in cell membrane, controlled release of MEL, magnetic response	Drug delivery for cancer therapy	[75]
Pectin; Melittin	Thin-layer hydration method, particle size, polydispersity index, encapsulation efficiency, release kinetics, hemolytic activity, flow cytometry, MTT assay, soft agar colony assay, wound healing analysis, real-time PCR	Improved targeting, encapsulation efficiency, PDI, release percentage, anticancer effect on breast cancer cell lines, up-regulation of Bax, P57, caspase3, caspase9 genes, down-regulation of MMP2, MMP2, MMP9 genes, increased apoptosis rate, inhibited invasion and migration	Potential treatment for breast cancer	[88]
Vesicular antibody-melittin (VAM); Melittin; Doxorubicin; Purpurin 18 nanoparticles	Genetic engineering, recombinant protein production, cell membrane fabrication, drug encapsulation, in vitro release, cytotoxicity, hemolysis, immunomodulation	Targeted drug delivery, reduced off-target toxicity, enhanced tumour penetration, synergistic therapeutic effects, immunomodulation	Targeted cancer combination therapy	[89]
Upconversion nanoparticles (UCNPs); Phosphate micelles; Secreted phospholipase A2 (sPLA-2)	FTIR, 1H-NMR, TEM, LC–MS, photoluminescence, bioimaging, cytotoxicity assays	Successful encapsulation and selective release of UCNPs to prostate cancer cells, biocompatibility, enzymatic cleavage by sPLA-2, reduced cytotoxicity	Bioimaging and nanomedicine applications	[90]
Lipidic nanovesicles; Raloxifene (RLX); Melittin (MEL)	Experimental design software (face-centred central composite design), particle size, zeta potential, entrapment efficiency, in vitro anticancer activity, cell cycle analysis, apoptosis, gene expression, mitochondrial membrane potential	Optimised nanovesicle formula with improved anticancer activity against PANC1 cells, cell cycle arrest in G2-M phase, increased apoptosis, upregulated TNFα and Bax expression, downregulated Bcl-2 and NF-κB expression	Potential treatment for pancreatic cancer	[91]
Honeybee (*Apis mellifera*), Chitosan Nanoparticles (CNP), Biopolymer	Biocompatible, biodegradable, stable, safe, Nanoparticle preparation, drug loading, characterization, cytotoxicity assays, ROS measurement, mitochondrial and ER analysis	High cytotoxicity against MCF-7 (IC50 437.2 µg/mL) and HepG2 (IC50 109.5 µg/mL) cells due to ROS generation, mitochondrial apoptosis, and ER stress	Cancer treatment, particularly breast and liver cancer	[82]

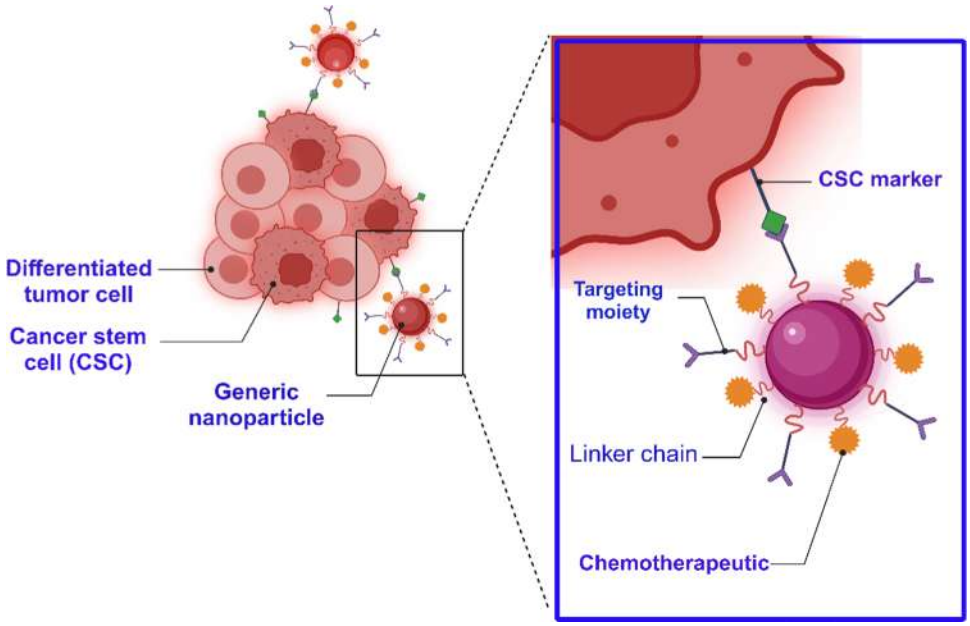


Fig. 5 Active targeting of cancer stem cells with nanoparticles

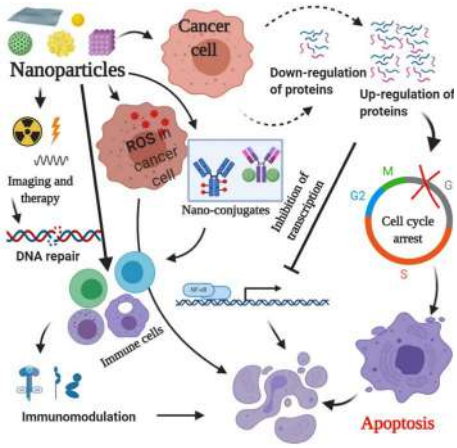


Fig. 6 Mechanisms of cell death in cancer induced by nanoparticles [93]

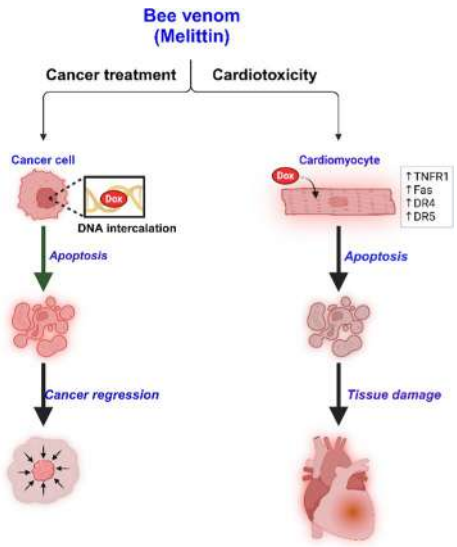


Fig. 7 Melittin target and off-target effect

doped with BV. These nanostructures have several advantages over the straightforward delivery of melittin. Firstly, they may be designed to target even malignant cells preferentially, avoiding contact with healthy tissues and minimizing cardiotoxic effects. Secondly, such nanomaterials can be designed to release melittin in a controlled manner, providing longer-lasting therapeutic benefits while simultaneously minimizing side effects. They may increase the uptake and endocytosis of melittin by cancerous cells, thereby enhancing its efficacy as a therapeutic agent. Their encapsulation within nanomaterials reduces their overall toxicity, making them safer for administration to patients. Nanomaterials laden with BV present a more controlled and precise way of targeting therapy to cancerous cells, therefore avoiding all the cardiotoxic side effects resulting from melittin's direct administration. This meticulous design of nanomaterials provides reassurance about the safety and precision of the treatment, offering a new direction with considerable potential for advancing safer and more effective therapies against various types of cancer [34, 95, 96].

Some empirical studies have confirmed that BVNMs can induce apoptosis by overexpressing pro-apoptotic proteins, which involves downregulating anti-apoptotic proteins. Additionally, BVNMs can induce cell cycle arrest, preventing the division and proliferation of cancerous cells. BVNMs can interfere with specific regulatory checkpoints during the cell cycle, thereby preventing cell division's normal process, ultimately leading to cellular death. This is their peculiar activity, essential in inhibiting tumour growth and its spread [97].

4.3 Inhibition of angiogenesis and tumour growth

Angiogenesis, developing new blood vessels, is crucial for tumour growth and metastasis. Research has shown that BVNMs are angio-inhibitors that interfere with several signaling pathways involved in the progression of the latter process. For example, they can reduce vascular endothelial growth factor (VEGF) expression, which plays a crucial role in angiogenesis. Once these new blood vessels are prevented from developing, BVNMs will also starve the tumor of oxygen and nutrients, thus causing tumors to regress and inhibiting the spread of cancer cells. BVNMs can inhibit tumor growth through cell death and the inhibition of cell proliferation. Studies have undoubtedly demonstrated that applying BVNMs can reduce tumour volume and weight in any animal cancer model. This suggests that BVNMs may be one of the most efficient treatments for patients with various types of cancer. The newest innovation in cancer therapy is nanomaterials loaded with BV [87]. By holistically combining BV's anticancer properties with the benefits of nanotechnology, BVNMs could enhance the scope of traditional BV remedies through improved efficacy, specificity, and established safety. Further investigation is required to elucidate the mechanisms of action of BVNMs and assess their safety and effectiveness in clinical trials. However, promising results in preclinical studies may eventually prove that BVNMs represent a step toward revolutionary or ground-breaking applications in cancer treatment. CAFs significantly contribute to the induction of TME, which poses problems for immunotherapeutic approaches, particularly those involving PD-1/PD-L1 blockade. Helping in these resistances with CAFs can occur in multiple ways, including acting as a physical barrier through the promotion of barrier generation, the release of immunosuppressive factors, alteration of the metabolic microenvironment, recruitment of immunosuppressive cell types, modulation of checkpoint molecules, and disruption of immune checkpoint distribution (Fig. 8). BV is a natural entity with anti-inflammatory and anti-tumour properties. Such an approach holds great promise for overcoming the hurdles that CAFs pose to tumors [98].

Applied to neoplastic sites using nanomaterials, BV can disrupt the physical barriers established by CAFs, modulate their secretions to suppress immunosuppression, alter the metabolic environment by modifying nutritional profiles, reduce the influx of immunosuppressive cells, inhibit PD-L1, and enhance the efficacy of PD-1/PD-L1-based immunotherapy. By targeting these specific mechanisms, nanomaterials of BV may significantly improve the prognosis for patients who have become resistant to other therapeutic approaches for cancer. Still, further research is strictly necessary to shed whole light on the mechanism of action of BV in this context and its eventual clinical usability [99].

4.4 Modulation of the immune response by BVNMs

BV-loaded nanomaterials, BVNMs, have shown great promise in the oncologic domain beyond their inherent cytotoxicity. The nanomaterial can interact with multiple populations of immune cells, influencing their functional kinetics and thereby enhancing their overall anti-tumor response. The activation of immune cells is a crucial way BVNMs may enhance the immune response. The primary role of these nanomaterials is to trigger cell proliferation and differentiation into a wide variety of immune repertoire cells, including T cells, NK cells, and dendritic cells. For example, BVNMs can differentiate naive T cells into cytotoxic T lymphocytes that can directly kill malignant cells. Furthermore, BVNMs can enhance the cytotoxic effects of NK cells and DCs, thereby contributing to a robust immune response against neoplastic cells [86].

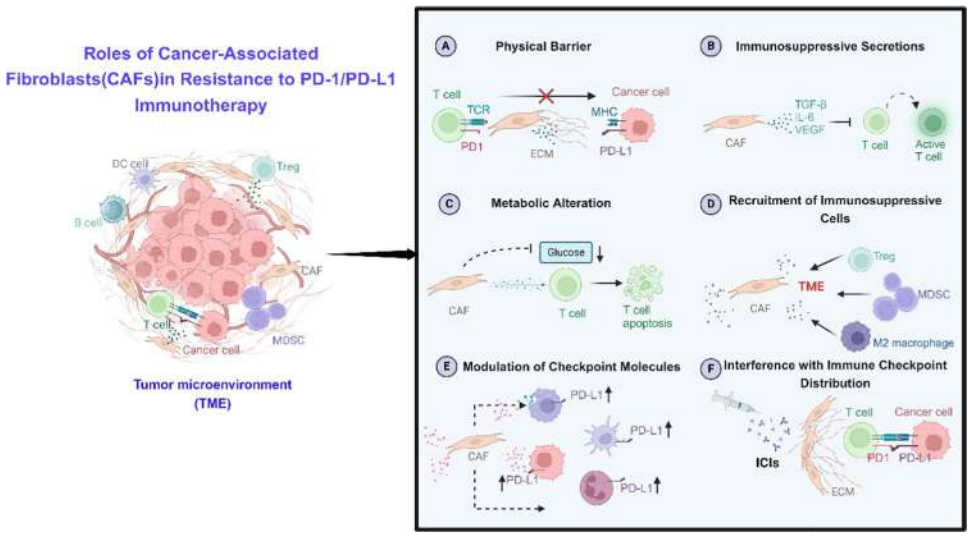


Fig. 8 Roles of cancer-associated fibroblasts (CAFs) in resistance to PD-1 /PD-L1 immunotherapy

Tumour cells often develop an immunosuppressive milieu, which distorts the practical activity of the immune system. BVNMs can overcome this immunosuppression by targeting the aspects that underpin it. For instance, BVNMs can inhibit the expression of immunosuppressive cytokines such as IL-10 and TGF-β, which have already been proven to suppress the functions of immune cells. Furthermore, BVNMs can bind to immune checkpoint molecules, including PD-L1 and CTLA-4, that tumor cells express to avoid detection by the immune system. By blocking these immune checkpoints, BVNMs may also restore the anti-tumor functions of the immune cells. The immunomodulatory effect of BVNMs positions these nanomaterials as potential candidates for combination therapy with other immunotherapeutic strategies, such as anti-PD-1 or anti-CTLA-4 antibodies. Moreover, BVNMs can be used concurrently with adoptive cell therapies, where T cells extracted from patients are modified to express specific tumor receptors before being infused back into the patient. Activating the immune system and inhibiting mechanisms that lead to immunosuppression by the tumour might improve the clinical efficacies of such immunotherapies [100–103].

BVNMs offer the opportunity to modulate the immune response more favorably in response to cancer therapy. Activating immune cells and reducing tumor-induced immunosuppression may enhance the immune system's efficacy in combating cancer. Further research is warranted to elucidate the in-depth mechanisms of immunomodulation presented by BVNMs and evaluate their clinical applicability in conjunction with other immunotherapeutic approaches. The immunomodulatory properties of BVNMs make them an appropriate candidate for synergistic therapy in combination with other immunotherapeutic approaches. These medications can be administered with immune checkpoint inhibitors, such as anti-PD-1 and anti-CTLA-4 monoclonal antibodies, to enhance their therapeutic effects. These antibodies block immune checkpoint molecules overexpressed by neoplastic cells to evade immune surveillance, making it easier for tumor cells to be recognized and targeted by immune effector cells [66]. Combining BVNMs with immune checkpoint inhibitors could enhance anti-tumor immune response. It is also possible to use BVNMs together with ACT. In ACT, T cells, isolated from the patient, are genetically modified to express receptors for tumor-specific antigens before being reinfused into the patient. However, the immunosuppressive environment driven by cancer cells can be one limiting factor in ACT. BVNMs can potentially enhance this immunosuppressive environment by stimulating the reactivity of immune cells while suppressing the effects of tumor-associated immunosuppressive elements, thus improving ACT treatment [104].

5 Future perspectives tumour-associated and challenges

5.1 Potential applications of BVNMs in combination with other therapies

BVNMs are indeed promising novel agents in oncology. However, their clinical potential may only be fully realized once their applications are studied in combination with conventional treatments. The most promising area of further research will involve the association of BVNMs with traditional chemotherapeutic drugs. Chemotherapy sometimes appears to be effective in eliminating some tumors. Still, chemotherapy frequently results in serious side effects. BVNMs have

targeted delivery and immunomodulatory properties, which could confer higher therapeutic effectiveness of chemotherapy and decrease toxicity [105, 106]. These may improve the therapeutic outcome by reducing side effect incidences, as they accurately direct chemotherapeutic agents at neoplastic cells while inducing an immune response. Another potential application area for BVNMs involves combining their potential with radiotherapy. Radiotherapy is one of the most widely applied treatments for cancer, but it also leads to damage to normal tissues. BVNMs can make cancer cells more susceptible to radiotherapy, thereby allowing reduced radiation doses to achieve therapeutic effects. Through their attention to neoplastic cells and increased susceptibility to radiation, BVNMs may minimize the damage inflicted on healthy tissues, thereby ensuring patients' better quality of life. In addition to chemotherapy and radiation therapy, BVNMs can be combined with other novel cancer therapies, such as immunotherapy and targeted therapies [38, 107, 108]. Immunotherapy is meant to stimulate a heightened immune response against the cancer cells. At the same time, targeted therapies selectively inhibit particular molecular pathways that promote the proliferation and survival of cancer cells. The integration of BVNMs with these therapeutic regimens may create a more holistic and effective treatment for cancer. However, the translational development of BVNMs for clinical applications poses several challenges. First, the safety and efficacy of these NM-related products must be established. Although preclinical studies have shown substantial promise in BVNMs, further work is needed in human populations to assess safety and efficacy. Second, the fabrication of BVNMs requires high-level nanotechnology and manufacturing processes that can be very expensive and time-consuming. Despite these challenges, BVNMs have many potential advantages in oncological therapies. Perhaps by combining BVNMs with other treatment strategies, more effective therapy, lessened side effects, and a better quality of life can be achieved in cancer sufferers. Therefore, further research and development are critical to fully exploiting the potential of BVNMs as an exciting new direction for cancer treatment [109–111].

5.2 Development of personalized nanomedicine approaches using BVNMs

The timeline course description outlines the evolution of nanomedicine, focusing on key developments from 1964 to 2022 (Fig. 9). A chronological history of some of the most significant discoveries in nanomedicine includes the elucidation of liposome structure, the identification of long-circulating PLGA-PEG nanoparticles, and the FDA approval of several nanomedicines. The depiction also highlights the dampening of immune responses in nanomedicine. Incorporating BV with nanomaterials is a promising approach for oncological therapies. This is based on the combination of the antineoplastic activity of BV and its specificity in delivery through nanomaterials. Researchers hope that such modality therapy, if prepared efficiently, would become less invasive and highly effective. These nanomaterials selectively target cancer cells, thereby reducing side effects and potentially improving the success rate of therapy. More importantly, compounds from the venom of bees may act through novel and distinct mechanisms compared to the drugs traditionally used in cancer, which may help avoid specific problems associated with drug resistance [65, 70, 112].

However, further studies and clinical trials are also necessary to fully evaluate the safety and efficacy of BV-loaded nanomaterials for use in oncology. The biocompatibility, toxicity levels, and performance of nanomaterials in clinical conditions must be determined. If these efforts could be successfully materialized, BV-based nanomaterials would herald a significant advancement in nanomedicine and cancer treatments [113, 114].

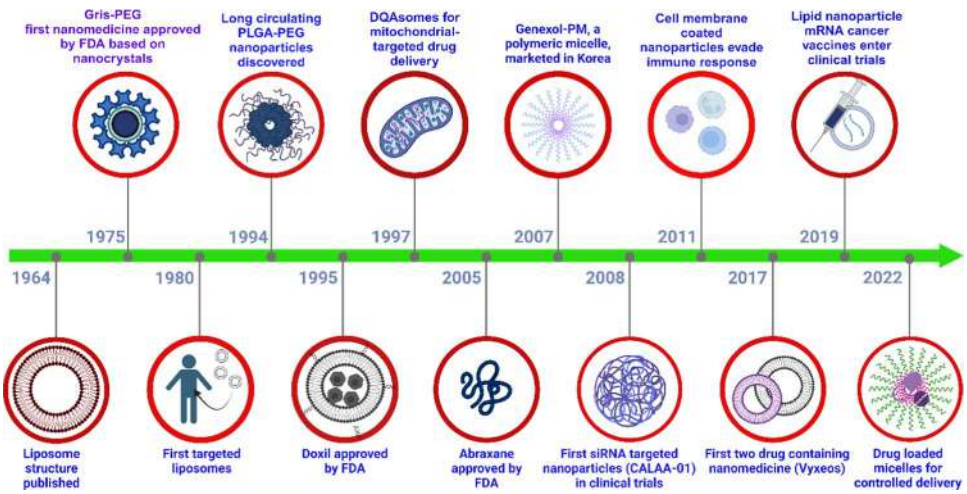


Fig. 9 Innovations in nanomedicine and drug delivery

Personalized therapy, with a formula tailored to the needs of individual patients, is an exciting new trend in the treatment of oncological diseases. Materials containing BV in nanodimensions demonstrate potential applications as new frameworks to advance methodologies for the emerging era of personalized nanomedicine. One of the greatest strengths of BVNMs is that they can be conjugated with various targeting ligands, many of which have been engineered to specifically bind to biomarkers primarily expressed on cancerous cells but not on healthy cells. Targeting such biomarkers, BVNMs can be preferentially delivered to neoplastic cells, thereby eliminating off-target effects and maximizing therapeutic effectiveness. BVNMs can carry various classes of drugs, including chemotherapeutic agents, small-molecule inhibitors, and nucleic acids. Therapeutic agent selection would then be tailored to the unique molecular characteristics of the cancer, ensuring that the most effective treatment is delivered to each patient. Moreover, BVNMs can facilitate the monitoring of therapeutic responses. When imaging agents are incorporated into the BVNMs, their distribution and accumulation within the organism can be monitored in vivo. Such information can then assess treatment outcomes and adjust the therapeutic regimen accordingly. Patient-specific nanomedicine approaches based on BVNMs may have several significant advantages, including better efficacy. Because the activity of BVNMs is limited to neoplastic cells, therapeutic drugs can reach the site of the disease, thereby enhancing the effectiveness of therapy with minimal side effects [12, 100, 115]. Less toxicity: the highly localized delivery by BVNMs would decrease unwanted interactions and, therefore, the cytotoxic effects of treatment, leading to improved quality of survival. Better patient outcomes: with efficient, patient-personalized strategies, expect superior results using nanomedicine. However, the practical application of personalized nanomedicine methods using BVNMs is accompanied by several challenges. Some are searching for suitable biomarkers for targeting, developing valuable methodologies for functionalizing BVNMs with targeting ligands, and addressing the manufacturing and clinical implementation complexities. Nevertheless, despite these challenges, the potential benefits of BVNMs are substantial. By applying these principles and leveraging the unique features of BVNMs, it would be possible to design even more effective and targeted therapies for oncology patients [91, 103, 116].

5.3 Addressing nanoparticle stability, biocompatibility, and clinical translation challenges

Issues with nanoparticle stability, biocompatibility, and translation to the clinic are among the challenges to advancing drug-loaded BVNMs for clinical use. A stable nanoparticle in biological media is crucial for successfully targeting and releasing drug agents at tumor sites while avoiding premature release. Due to their pH, temperature, and ionic strength sensitivity, nanoparticles are highly sensitive to stability conditions. Nanoparticles are stabilised by coating, cross-linking, and formulation. To minimise adverse effects, it is essential to achieve biocompatibility of BVNMs. This includes scanning the nanoparticles' surface characteristics, dimensions, and composition [117, 118]. Surface modifications can increase their biocompatibility while minimising immune response interactions. Translating BVNMs from the preclinical phase to clinical trials requires high-quality research demonstrating regulatory compliance through testing. Preclinical studies should ensure that the BVNMs are safe and efficacious in animal models. Subsequently, clinical trials should be conducted to determine the safety and efficacy of the BVNMs in human patients. Regulatory approval must be achieved before BVNMs can be commercialised in clinics. An integrated effort by scientists, engineers, clinicians, and regulatory experts can address these challenges [119, 120]. Perhaps the current efforts to develop novel methodologies for improving nanoparticle stability, biocompatibility, and clinical translation will unlock the full potential of BVNMs for cancer therapy. Mundekkad and Cho studied the role of nanoparticles in the clinical application of cancer therapy. With the changing face of cancer therapeutics development, current treatment modalities no longer meet the standards of traditional methods; this is where precision medicine begins [121–123]. The properties of nanomaterials have made possible some leading-edge therapeutic approaches, in addition to the more conventional drug delivery techniques, for cancer treatment. Nanoparticles can serve as potent drug delivery vectors for active pharmaceutical agents, targeting tumor locations with superior efficacy. This review examines the various types of nanoparticles that have progressed to clinical trial phases in cancer intervention. The challenges in transferring nanodrugs from the research environment to pharmaceutical applications underscore the recent advances in applying nanoparticles in cancer therapy [93, 124].

5.4 Future research directions and opportunities for advancing the field of BVNMs for cancer therapy

This intensive development field represents avenues for future research and innovation in cancer treatment using BVNMs. Some promising areas of study include the development of new and improved BVNMs that exhibit superior stability, biocompatibility, and therapeutic potential. Advancements in nanotechnology can provide valuable opportunities to design BVNMs with unique features and characteristics that target various cancer phenotypes. Another critical area of

research would be the application of BVNMs in combination with other forms of therapy [125]. Indeed, it has already been demonstrated that when BVNMs are combined with other treatments, such as chemotherapy or radiotherapy, the potential for achieving synergy and improving patient prognosis may be realized. It is also essential to elaborate on the basic mechanisms of action of BVNMs to optimize therapeutic applications. The molecular pathways that underlie the anticancer effect of BVNMs may provide valuable insights for designing more targeted and effective treatments. Advances in the new nanomedicine methods involving BVNMs show outstanding promise. Tailoring BVNMs to patients' needs can optimise therapeutic activity and reduce side effects. Ultimately, overcoming the challenges associated with clinical translation should provide a bridge to commercialization. This will involve comprehensive preclinical and clinical studies that would confirm the safety and efficacy of the BVNMs and obtain regulatory approval. From these research pathways, the field of nanomaterials for medicinal field can continue to provide patients with alternative, novel, and innovative treatments [29, 47, 125–129].

6 Conclusion

Nanomaterials encapsulation with BV represents a new and promising direction in oncological treatment. These materials combine the unique biological properties of BV with the benefits inherent in nanotechnology, enabling their use above the constraints bound with traditional cancer therapies. For example, Liposomes, Polymeric, and Inorganic nanoparticles are ideal for encapsulating and delivering BV to neoplastic cells. Based on preclinical studies, nanomaterials infused with BV have demonstrated promise in combating various cancer models. These compounds have already been proven to induce apoptosis, inhibit tumour growth, and modulate the microenvironment. The main challenge is to uncover the mechanisms on which they act to address challenges with clinical applications. Despite such promising horizons, however, many considerations must be evaluated stringently to ensure the efficient clinical use of nanomaterials infused with BV. These include safety, efficacy, biocompatibility, and final regulatory approval. By studying them in animal models, conducting critically evaluated preclinical studies on the biodistribution, toxicity, and potential therapeutic applications of materials for clinical use is essential. Scalable and reproducible production methods are also crucial factors in ensuring the quality uniformity of these nanomaterials before they are introduced into clinical use. Nanomaterials doped with BV may be the new approach to cancer therapy. The challenges that the current development of these materials faces and continues to explore may indeed change the face of cancer management and possibly improve patient prognosis.

Author contributions V. J.: Conceptualization, data curation, formal analysis, funding acquisition. A. B.: investigation, resources. A. R.: formal analysis, funding acquisition, D. L.: methodology, project administration. S.P.: editing, methodology, J. A.: validation, editing, conceptualization, methodology.

Funding In the manuscript, there is no Funding.

Data availability Data is provided within the manuscript.

Declarations

Ethics approval and consent to participate Not applicable.

Consent for publication Not applicable.

Competing interests The authors declare no competing interests.

Open Access This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by-nc-nd/4.0/.

References

1. Sechi M, Sanna V, Pala N. Targeted therapy using nanotechnology: focus on cancer. Int J Nanomed. 2014. https://doi.org/10.2147/IJN.S36654.
2. Hajiaghapour Asr M, et al. Lipid Nanoparticles as promising carriers for mRNA vaccines for viral lung infections. Pharmaceutics. 2023;15(4):1127. https://doi.org/10.3390/pharmaceutics15041127.
3. Farjadian F, Ghasemi S, Akbarian M, Hoseini-Ghahfarokhi M, Moghoofei M, Doroudian M. Physically stimulus-responsive nanoparticles for therapy and diagnosis. Front Chem. 2022. https://doi.org/10.3389/fchem.2022.952675.
4. Xing L, Dawei C, Liping X, Rongqing Z. Oral colon-specific drug delivery for bee venom peptide: development of a coated calcium alginate gel beads-entrapped liposome. J Control Release. 2003;93(3):293–300. https://doi.org/10.1016/j.jconrel.2003.08.019.
5. Badawi JK. Bee venom components as therapeutic tools against prostate cancer. Toxins (Basel). 2021;13(5):337. https://doi.org/10.3390/toxins13050337.
6. Frangieh J, et al. First characterization of the venom from *Apis mellifera* syriaca, a honeybee from the middle east region. Toxins (Basel). 2019;11(4):191. https://doi.org/10.3390/toxins11040191.
7. Lee JA, Son MJ, Choi J, Jun JH, Kim J-I, Lee MS. Bee venom acupuncture for rheumatoid arthritis: a systematic review of randomised clinical trials. BMJ Open. 2014;4(11): e006140. https://doi.org/10.1136/bmjopen-2014-006140.
8. Danesh-Seta T, Emami F, Nasr-Esfahani MH, Ghaedi K, Aliomrani M. Bee venom-derived BBB shuttle and its correlation with oligodendrocyte proliferation markers in mice model of multiple sclerosis. Neurotox Res. 2021;39(4):1181–8. https://doi.org/10.1007/s12640-021-00361-x.
9. Kim J, Song HS. Bee venom within liposomes synergistically inhibit atopic dermatitis in mice. J Acupunct Res. 2022;39(1):40–8. https://doi.org/10.13045/jar.2021.00318.
10. Oršolić N. A review of propolis antitumour action in vivo and in vitro. J ApiProduct ApiMedical Sci. 2010;2(1):1. https://doi.org/10.3896/IBRA.4.02.1.01.
11. Doroudian M, MacLoughlin R, Poynton F, Prina-Mello A, Donnelly SC. Nanotechnology based therapeutics for lung disease. Thorax. 2019;74(10):965–76. https://doi.org/10.1136/thoraxjnl-2019-213037.
12. Borojeni SK, Zolfagharian H, Babaie M, Javadi I. Cytotoxic effect of bee (*A. mellifera*) venom on cancer cell lines. J Pharmacopuncture. 2020;23(4):212–9. https://doi.org/10.3831/KPI.2020.23.4.212.
13. Kamrani A, et al. New immunotherapeutic approaches for cancer treatment. Pathol Res Pract. 2023;248: 154632. https://doi.org/10.1016/j.prp.2023.154632.
14. Doroudian M, Azhdari MH, Goodarzi N, O'Sullivan D, Donnelly SC. Smart nanotherapeutics and lung cancer. Pharmaceutics. 2021;13(11):1972. https://doi.org/10.3390/pharmaceutics13111972.
15. Doroudian M, O'Neill A, Mac Loughlin R, Prina-Mello A, Volkov Y, Donnelly SC. Nanotechnology in pulmonary medicine. Curr Opin Pharmacol. 2021;56:85–92. https://doi.org/10.1016/j.coph.2020.11.002.
16. Doroudian M, Zanganeh S, Abbasgholinejad E, Donnelly SC. Nanomedicine in lung cancer immunotherapy. Front Bioeng Biotechnol. 2023. https://doi.org/10.3389/fbioe.2023.1144653.
17. Liu C, et al. Application of bee venom and its main constituent melittin for cancer treatment. Cancer Chemother Pharmacol. 2016;78(6):1113–30. https://doi.org/10.1007/s00280-016-3160-1.
18. Chahla C, et al. Effect of *Apis mellifera* syriaca bee venom on glioblastoma cancer: in vitro and in vivo studies. Molecules. 2024;29(16):3950. https://doi.org/10.3390/molecules29163950.
19. Gajski G, Leonova E, Sjakste N. Bee venom: composition and anticancer properties. Toxins (Basel). 2024;16(3):117. https://doi.org/10.3390/toxins16030117.
20. Ceremuga M, et al. Melittin—a natural peptide from bee venom which induces apoptosis in human leukaemia cells. Biomolecules. 2020;10(2):247. https://doi.org/10.3390/biom10020247.
21. Heidari R, et al. Mesoporous silica application as an antidote of methotrexate and evaluation of the long-term oral administration: in vitro and in vivo study. J Mater Res. 2023;38(11):2930–42. https://doi.org/10.1557/s43578-023-01003-y.
22. Ajam-Hosseini M, Akhoondi F, Doroudian M. Nano based-oncolytic viruses for cancer therapy. Crit Rev Oncol Hematol. 2023;185: 103980. https://doi.org/10.1016/j.critrevonc.2023.103980.
23. Devadasan V, Abinaya K, Muthezhilan R, Puviarasan K, Raman P. Role of phospholipase A2 in cancer. In: Phospholipases in physiology and pathology. Elsevier; 2023. p. 197–216. https://doi.org/10.1016/B978-0-443-15313-6.00020-X.
24. Smith RL, Pruthi S, Fitzpatrick LA. Evaluation and management of breast pain. Mayo Clin Proc. 2004;79(3):353–72. https://doi.org/10.4065/79.3.353.
25. Khamis AAA, Ali EMM, El-Moneim MAA, Abd-Alhaseeb MM, El-Magd MA, Salim EI. Hesperidin, piperine and bee venom synergistically potentiate the anticancer effect of tamoxifen against breast cancer cells. Biomed Pharmacother. 2018;105:1335–43. https://doi.org/10.1016/j.biopha.2018.06.105.
26. Westerink J, Visseren FL. Pharmacological and non-pharmacological interventions to influence adipose tissue function. Cardiovasc Diabetol. 2011;10(1):13. https://doi.org/10.1186/1475-2840-10-13.
27. Farjadian F, et al. Smart nanogels as promising platform for delivery of drug, gene, and vaccine; therapeutic applications and active targeting mechanism. Eur Polym J. 2024;219: 113400. https://doi.org/10.1016/j.eurpolymj.2024.113400.
28. Zanganeh S, et al. Viral nanoparticles-mediated delivery of therapeutic Cargo. Adv Ther (Weinh). 2023. https://doi.org/10.1002/adtp.202300082.
29. Hejabi F, Abbaszadeh MS, Taji S, O'Neill A, Farjadian F, Doroudian M. Nanocarriers: a novel strategy for the delivery of CRISPR/Cas systems. Front Chem. 2022. https://doi.org/10.3389/fchem.2022.957572.
30. Poleshuck EL, et al. Risk factors for chronic pain following breast cancer surgery: a prospective study. J Pain. 2006;7(9):626–34. https://doi.org/10.1016/j.jpain.2006.02.007.

31. Kushwaha AC, et al. Overutilization of health care resources for breast pain. Am J Roentgenol. 2018;211(1):217–23. https://doi.org/10.2214/AJR.17.18879.
32. Wehbe R, Frangieh J, Rima M, El Obeid D, Sabatier J-M, Fajloun Z. Bee venom: overview of main compounds and bioactivities for therapeutic interests. Molecules. 2019;24(16):2997. https://doi.org/10.3390/molecules24162997.
33. Son D, Lee J, Lee Y, Song H, Lee C, Hong J. Therapeutic application of anti-arthritis, pain-releasing, and anti-cancer effects of bee venom and its constituent compounds. Pharmacol Ther. 2007;115(2):246–70. https://doi.org/10.1016/j.pharmthera.2007.04.004.
34. Han E, Kim D, Cho Y, Lee S, Kim J, Kim H. Development of polymersomes co-delivering doxorubicin and melittin to overcome multidrug resistance. Molecules. 2023;28(3):1087. https://doi.org/10.3390/molecules28031087.
35. Badria F, Fathy H, Fatehe A, Elimam D, Ghazy M. Evaluate the cytotoxic activity of honey, propolis, and bee venom from different localities in Egypt against liver, breast, and colorectal cancer. Journal of Apitherapy. 2017;2(1):1. https://doi.org/10.5455/ja.20170203075953.
36. Babayeva A, Dibek E, Kıvrak İ, Çöl B. The cytotoxic effects of turkish bee venom (*Apis mellifera*) on selected cancer cell lines. Int J Pept Res Ther. 2024;30(5):53. https://doi.org/10.1007/s10989-024-10631-9.
37. Saghi H, Mirzavi F, Afshari AR, Jalili-Nik M, Mashkani B, Soukhtanloo M. Bee venom induces anti-tumor effects in HT-29 colon cancer cells through regulation of cell proliferation and apoptosis. Biologia (Bratisl). 2022;77(12):3595–602. https://doi.org/10.1007/s11756-022-01201-9.
38. Park K. Controlled drug delivery systems: past forward and future back. J Control Release. 2014;190:3–8. https://doi.org/10.1016/j.jconrel.2014.03.054.
39. Honari P, Shahbazzadeh D, Behdani M, Pooshang Bagheri K. Highly in vitro anti-cancer activity of melittin-loaded niosomes on non-small cell lung cancer cells. Toxicon. 2024;241: 107673. https://doi.org/10.1016/j.toxicon.2024.107673.
40. Aher J, Jadhav V, Bhagare A, Lokhande D. Honey bee venom loaded nanomaterials: a promising avenue for therapeutic delivery. Nano-Struct Nano-Objects. 2024;39: 101310. https://doi.org/10.1016/j.nanoso.2024.101310.
41. Jadhav V, Roy A, Kaur K, Rai AK, Rustagi S. Recent advances in nanomaterial-based drug delivery systems. Nano-Struct Nano-Objects. 2024;37: 101103. https://doi.org/10.1016/j.nanoso.2024.101103.
42. Jadhav V, et al. Current advancements in functional nanomaterials for drug delivery systems. Nano-Struct Nano-Objects. 2024;38: 101177. https://doi.org/10.1016/j.nanoso.2024.101177.
43. Cardoso RV, Pereira PR, Freitas CS, Paschoalin VMF. Trends in drug delivery systems for natural bioactive molecules to treat health disorders: the importance of nano-liposomes. Pharmaceutics. 2022;14(12):2808. https://doi.org/10.3390/pharmaceutics14122808.
44. Mao J, et al. A novel melittin nano-liposome exerted excellent anti-hepatocellular carcinoma efficacy with better biological safety. J Hematol Oncol. 2017;10(1):71. https://doi.org/10.1186/s13045-017-0442-y.
45. Aufschnaiter A, et al. Apitoxin and its components against cancer, neurodegeneration and rheumatoid arthritis: limitations and possibilities. Toxins (Basel). 2020;12(2):66. https://doi.org/10.3390/toxins12020066.
46. Badivi S, et al. Targeted delivery of bee venom to A549 lung cancer cells by PEGylate liposomal formulation: an apoptotic investigation. Sci Rep. 2024;14(1):17302. https://doi.org/10.1038/s41598-024-68156-6.
47. Abd El-Gawad A, Kenawy MA, El-Messery TM, Hassan ME, El-Nekeety AA, Abdel-Wahhab MA. Fabrication and characterization of bee venom-loaded nanoliposomes: enhanced anticancer activity against different human cancer cell lines via the modulation of apoptosis-related genes. J Drug Deliv Sci Technol. 2023;84: 104545. https://doi.org/10.1016/j.jddst.2023.104545.
48. Pinto MB, et al. Bee venom-loaded niosomes as innovative platforms for cancer treatment: development and therapeutical efficacy and safety evaluation. Pharmaceuticals. 2024;17(5):572. https://doi.org/10.3390/ph17050572.
49. Waller A, Forshaw K, Bryant J, Mair S. Interventions for preparing patients for chemotherapy and radiotherapy: a systematic review. Support Care Cancer. 2014;22(8):2297–308. https://doi.org/10.1007/s00520-014-2303-3.
50. Miaskowski C, et al. Identification of patient subgroups and risk factors for persistent breast pain following breast cancer surgery. J Pain. 2012;13(12):1172–87. https://doi.org/10.1016/j.jpain.2012.09.013.
51. Ali EM. Contributions of some biological activities of honey bee venom. J Apic Res. 2014;53(4):441–51. https://doi.org/10.3896/IBRA.1.53.4.13.
52. Jadhav V, et al. In vitro cytotoxicity assessment of biosynthesized *Apis mellifera* bee venom nanoparticles (BVNPs) against MCF-7 breast cancer cell lines. Discover Nano. 2024;19(1):170. https://doi.org/10.1186/s11671-024-04123-4.
53. Heneweer C, Gendy SE, Peñate-Medina O. Liposomes and inorganic nanoparticles for drug delivery and cancer imaging. Ther Deliv. 2012;3(5):645–56. https://doi.org/10.4155/tde.12.38.
54. Pucca MB, et al. Bee updated: current knowledge on bee venom and bee envenoming therapy. Front Immunol. 2019. https://doi.org/10.3389/fimmu.2019.02090.
55. Park M-H, et al. Preparation and characterization of bee venom-loaded PLGA particles for sustained release. Pharm Dev Technol. 2018;23(9):857–64. https://doi.org/10.1080/10837450.2016.1264415.
56. El-Didamony SE, Kalaba MH, El-Fakharany EM, Sultan MH, Sharaf MH. Antifungal and antibiofilm activities of bee venom loaded on chitosan nanoparticles: a novel approach for combating fungal human pathogens. World J Microbiol Biotechnol. 2022;38(12):244. https://doi.org/10.1007/s11274-022-03425-y.
57. Chary PS, Shaikh S, Rajana N, Bhavana V, Mehra NK. Unlocking nature's arsenal: nanotechnology for targeted delivery of venom toxins in cancer therapy. Biomater Adv. 2024;162: 213903. https://doi.org/10.1016/j.bioadv.2024.213903.
58. Duarte D, Falcão SI, El Mehdi I, Vilas-Boas M, Vale N. Honeybee venom synergistically enhances the cytotoxic effect of CNS drugs in HT-29 colon and MCF-7 breast cancer cell lines. Pharmaceutics. 2022;14(3):511. https://doi.org/10.3390/pharmaceutics14030511.
59. Chatzi Memet B, Demirpolat E, Yildirim T, Aydin O. Development of polymer-based nanoparticles for the reduction of melittin toxicity. Springer Nature Switzerland; 2024. https://doi.org/10.1007/978-3-031-49068-2_6.
60. Sharaf M, et al. Bee chitosan nanoparticles loaded with apitoxin as a novel approach to eradication of common human bacterial, fungal pathogens and treating cancer. Front Microbiol. 2024. https://doi.org/10.3389/fmicb.2024.1345478.
61. Ye R, et al. Stable loading and delivery of melittin with lipid-coated polymeric nanoparticles for effective tumor therapy with negligible systemic toxicity. ACS Appl Mater Interfaces. 2021;13(47):55902–12. https://doi.org/10.1021/acsami.1c17618.

62. Larionova I, et al. Tumor-associated macrophages in human breast, colorectal, lung, ovarian and prostate cancers. Front Oncol. 2020. https://doi.org/10.3389/fonc.2020.566511.
63. Ramakrishnan S, Bui Nguyen TM, Subramanian IV, Kelekar A. Autophagy and angiogenesis inhibition. Autophagy. 2007;3(5):511–4. https://doi.org/10.4161/auto.4734.
64. Bagyalakshmi B, Lalitha Priyadarshini S, Balamurugan A. Anticancer activity of bee venom against lung cancer cell line (A549 cells) enhanced by iron oxide nanoparticles synthesized from *Syzygium aromaticum*. J Drug Deliv Ther. 2019;9(3):248–54. https://doi.org/10.22270/jddt.v9i3-s.2983.
65. Pfeffer C, Singh A. Apoptosis: a target for anticancer therapy. Int J Mol Sci. 2018;19(2):448. https://doi.org/10.3390/ijms19020448.
66. dos Santos AP, de Araújo TG, Rádis-Baptista G. Nanoparticles functionalized with venom-derived peptides and toxins for pharmaceutical applications. Curr Pharm Biotechnol. 2020;21(2):97–109. https://doi.org/10.2174/1389201020666190621104624.
67. Keskin M, Kaya G, Keskin S. Nanotechnology in honey. In: Nanotechnology in functional foods. Wiley; 2022. p. 87–101. https://doi.org/10.1002/9781119905059.ch4.
68. Turrina C, Berensmeier S, Schwaminger SP. Bare iron oxide nanoparticles as drug delivery carrier for the short cationic peptide lasioglossin. Pharmaceuticals. 2021;14(5):405. https://doi.org/10.3390/ph14050405.
69. Raghupathi KR, Koodali RT, Manna AC. Size-dependent bacterial growth inhibition and mechanism of antibacterial activity of zinc oxide nanoparticles. Langmuir. 2011;27(7):4020–8. https://doi.org/10.1021/la104825u.
70. Ravi P, Ganesan M. Quantum dots as biosensors in the determination of biochemical parameters in xenobiotic exposure and toxins. Anal Sci. 2021;37(5):661–71. https://doi.org/10.2116/analsci.20SCR03.
71. Lv B, et al. Cadmium exposure alters expression of protective enzymes and protein processing genes in venom glands of the wolf spider *Pardosa pseudoannulata*. Environ Pollut. 2021;268: 115847. https://doi.org/10.1016/j.envpol.2020.115847.
72. Liu Y, Tan J, Thomas A, Ou-Yang D, Muzykantov VR. The shape of things to come: importance of design in nanotechnology for drug delivery. Ther Deliv. 2012;3(2):181–94. https://doi.org/10.4155/tde.11.156.
73. Ngai J, MacMillan P, Kingston BR, Lin ZP, Ouyang B, Chan WCW. Delineating the tumour microenvironment response to a lipid nanoparticle formulation. J Control Release. 2023;353:988–1001. https://doi.org/10.1016/j.jconrel.2022.12.021.
74. Nagy RAA, et al. Anticancer effect of Sorafenib-loaded iron oxide nanoparticles and bee venom on some genes expression in hepatocellular carcinoma. Egypt J Chem. 2022. https://doi.org/10.21608/ejchem.2022.138553.6104.
75. Qi J, et al. Graphene oxide-based magnetic nanocomposites for the delivery of melittin to cervical cancer HeLa cells. Nanotechnology. 2020;31(6): 065102. https://doi.org/10.1088/1361-6528/ab5084.
76. Sun M, Wu Y, Zhou Z, Liu S, Mao S, Li G. Co-delivery of EGCG and melittin with self-assembled fluoro-nanoparticles for enhanced cancer therapy. Aging. 2023. https://doi.org/10.18632/aging.204769.
77. Ascoët S, De Waard M. Diagnostic and therapeutic value of aptamers in envenomation cases. Int J Mol Sci. 2020;21(10):3565. https://doi.org/10.3390/ijms21103565.
78. Jang S, Kim KH. Clinical effectiveness and adverse events of bee venom therapy: a systematic review of randomized controlled trials. Toxins (Basel). 2020;12(9):558. https://doi.org/10.3390/toxins12090558.
79. Souto EB, et al. Nanopharmaceutics: part II—production scales and clinically compliant production methods. Nanomaterials. 2020;10(3):455. https://doi.org/10.3390/nano10030455.
80. Shegokar R, Nakach M. Large-scale manufacturing of nanoparticles—an industrial outlook. In: Drug delivery aspects. Elsevier; 2020. p. 57–77. https://doi.org/10.1016/B978-0-12-821222-6.00004-X.
81. Al-Hatamleh MAI, et al. Applications of alginate-based nanomaterials in enhancing the therapeutic effects of bee products. Front Mol Biosci. 2022. https://doi.org/10.3389/fmolb.2022.865833.
82. Kamel AG, Sabet S, El-Shibiny A. Potential mitochondrial ROS-mediated damage induced by chitosan nanoparticles bee venom-loaded on cancer cell lines. Int J Biol Macromol. 2024;279: 135362. https://doi.org/10.1016/j.ijbiomac.2024.135362.
83. Alalawy AI, et al. Effectual anticancer potentiality of loaded bee venom onto fungal chitosan nanoparticles. Int J Polym Sci. 2020;2020:1–9. https://doi.org/10.1155/2020/2785304.
84. El-Dek S, Hassan M, Mohamed A, Abdel Wahab AW. Apoptotic and necrotic effects of chitosan nanoparticles loaded with the honeybee, *Apis mellifera* venom on different cancer cell lines. J Egypt Soc Parasitol. 2019;49(1):115–22. https://doi.org/10.21608/jesp.2019.68293.
85. Dabbagh Moghaddam F, et al. Delivery of melittin-loaded niosomes for breast cancer treatment: an in vitro and in vivo evaluation of anti-cancer effect. Cancer Nanotechnol. 2021;12(1):14. https://doi.org/10.1186/s12645-021-00085-9.
86. Lv S, Sylvestre M, Song K, Pun SH. Development of D-melittin polymeric nanoparticles for anti-cancer treatment. Biomaterials. 2021;277: 121076. https://doi.org/10.1016/j.biomaterials.2021.121076.
87. Hematyar M, Soleimani M, Es-Haghi A, Rezaei Mokarram A. Synergistic co-delivery of doxorubicin and melittin using functionalized magnetic nanoparticles for cancer treatment: loading and in vitro release study by LC–MS/MS. Artif Cells Nanomed Biotechnol. 2018;46(sup3):1226–35. https://doi.org/10.1080/21691401.2018.1536063.
88. Alibeigi E, Dehkordi AA, Asadian M, Doosti A, Piri-Gharaghie T. RETRACTED ARTICLE: Investigating the effects of melittin-loaded pectin as novel anti breast cancer drug to increase the apoptosis rate. Int J Pept Res Ther. 2024;30(2):17. https://doi.org/10.1007/s10989-024-10593-y.
89. Zhang J, et al. Genetically engineered nano-melittin vesicles for multimodal synergetic cancer therapy. Bioeng Transl Med. 2023. https://doi.org/10.1002/btm2.10482.
90. Sharipov M, Tawfik SM, Gerelkhuu Z, Huy BT, Lee Y-I. Phospholipase A2-responsive phosphate micelle-loaded UCNPs for bioimaging of prostate cancer cells. Sci Rep. 2017;7(1):16073. https://doi.org/10.1038/s41598-017-16136-4.
91. Fahmy UA, et al. Potentiality of raloxifene loaded melittin functionalized lipidic nanovesicles against pancreatic cancer cells. Drug Deliv. 2022;29(1):1863–77. https://doi.org/10.1080/10717544.2022.2072544.
92. Shi P, et al. Pharmacological effects and mechanisms of bee venom and its main components: recent progress and perspective. Front Pharmacol. 2022. https://doi.org/10.3389/fphar.2022.1001553.

93. Mundekkad D, Cho WC. Nanoparticles in clinical translation for cancer therapy. Int J Mol Sci. 2022;23(3):1685. https://doi.org/10.3390/ijms23031685.
94. Kwon N-Y, Sung S-H, Sung H-K, Park J-K. Anticancer activity of bee venom components against breast cancer. Toxins (Basel). 2022;14(7):460. https://doi.org/10.3390/toxins14070460.
95. Okamoto T, et al. Melittin cardiotoxicity in cultured mouse cardiac myocytes and its correlation with calcium overload. Toxicol Appl Pharmacol. 1995;133(1):150–63. https://doi.org/10.1006/taap.1995.1136.
96. Tariq R, Liaqat A, Khalid UA. An insight into the role of bee venom and melittin against tumor cells: a review of breast cancer therapy. Arch Breast Cancer. 2021. https://doi.org/10.32768/abc.202184267-276.
97. Bahreyni A, et al. A combination of genetically engineered oncolytic virus and melittin-CpG for cancer viro-chemo-immunotherapy. BMC Med. 2023;21(1):193. https://doi.org/10.1186/s12916-023-02901-y.
98. Ertveldt T, et al. Nanobody-mediated SPECT/CT imaging reveals the spatiotemporal expression of programmed death-ligand 1 in response to a CD8 $^{+}$ T cell and iNKT cell activating mRNA vaccine. Theranostics. 2023;13(15):5483–500. https://doi.org/10.7150/thno.85106.
99. Yang W, et al. Anti-PD-1 immunotherapy and bee venom for relapsed and refractory liposarcoma: a case report. Front Oncol. 2021. https://doi.org/10.3389/fonc.2021.668992.
100. Martikainen P, Nyman K, Nevalainen TJ. Toxic effects of human pancreatic and snake and bee venom phospholipases A2 on MCF-7 cells in culture. Toxicon. 1993;31(7):835–43. https://doi.org/10.1016/0041-0101(93)90218-8.
101. Kumar P, Nagarajan A, Uchil PD. Analysis of cell viability by the MTT assay. Cold Spring Harb Protoc. 2018. https://doi.org/10.1101/pdb.prot095505.
102. Hossen Md, Shapla U, Gan S, Khalil Md. Impact of bee venom enzymes on diseases and immune responses. Molecules. 2016;22(1):25. https://doi.org/10.3390/molecules22010025.
103. Hwang D-S, Kim S, Bae H. Therapeutic effects of bee venom on immunological and neurological diseases. Toxins (Basel). 2015;7(7):2413–21. https://doi.org/10.3390/toxins7072413.
104. Yu X, et al. Recent advances in melittin-based nanoparticles for antitumor treatment: from mechanisms to targeted delivery strategies. J Nanobiotechnol. 2023;21(1):454. https://doi.org/10.1186/s12951-023-02223-4.
105. Chiu H-F, Han Y-C, Shen Y-C, Golovinskaia O, Venkatakrishnan K, Wang C-K. Chemopreventive and chemotherapeutic effect of propolis and its constituents: a mini-review. J Cancer Prev. 2020;25(2):70–8. https://doi.org/10.15430/JCP.2020.25.2.70.
106. de Mendonça ICG. Propolis as an adjunct to prevention and treatment of radiotherapy- and chemotherapy-induced oral mucositis. Nurs Palliat Care. 2016. https://doi.org/10.15761/NPC.1000125.
107. Elumalai P, et al. An insight into anticancer effect of propolis and its constituents: a review of molecular mechanisms. Evid Based Complement Altern Med. 2022;2022:1–14. https://doi.org/10.1155/2022/5901191.
108. Wieczorek PP, et al. Chemical variability and pharmacological potential of propolis as a source for the development of new pharmaceutical products. Molecules. 2022;27(5):1600. https://doi.org/10.3390/molecules27051600.
109. Keykanlu H, Zibaei S, Ardjmand M, Safekordi A. Reload purified melittin and lactoferrin on perfluorooctyl bromide nanoparticles (PFOB-Nps) and examine the distribution of particle size, zeta potential and confirmation of their accession on the nanoparticles via tryptophan fluorescence and circular dichroism (CD) and its anti-cancer effects on human breast cancer cell line MCF7. Orient J Chem. 2016;32(6):3099–111. https://doi.org/10.13005/ojc/320631.
110. Abdo JA, Alsharif FM, Salah N, Elkhawaga OAY. Cytotoxic effect of propolis nanoparticles on ehrlich ascites carcinoma bearing mice. Adv Nanopart. 2019;08(04):55–70. https://doi.org/10.4236/anp.2019.84005.
111. Guo Y, Liu Z, Wu Q, Li Z, Yang J, Xuan H. Integration with transcriptomic and metabolomic analyses reveals the in vitro cytotoxic mechanisms of chinese poplar propolis by triggering the glucose metabolism in human hepatocellular carcinoma cells. Nutrients. 2023;15(20):4329. https://doi.org/10.3390/nu15204329.
112. Eleiwa NZH, Ali MA-A, Said EN, Metwally MMM, Abd-ElHakim YM. Bee venom (*Apis mellifera* L.) rescues zinc oxide nanoparticles induced neurobehavioral and neurotoxic impact via controlling neurofilament and GAP-43 in rat brain. Environ Sci Pollut Res. 2023;30(38):88685–703. https://doi.org/10.1007/s11356-023-28538-1.
113. Wilhelm S, et al. Analysis of nanoparticle delivery to tumours. Nat Rev Mater. 2016;1(5):16014. https://doi.org/10.1038/natrevmats.2016.14.
114. Banerjee A, Qi J, Gogoi R, Wong J, Mitragotri S. Role of nanoparticle size, shape and surface chemistry in oral drug delivery. J Control Release. 2016;238:176–85. https://doi.org/10.1016/j.jconrel.2016.07.051.
115. Saber A, Abdelwahab A, El Amir A, Nassar M, Zohdi H. Bee venom loaded chitosan nanoparticles as treatment for amoebiasis in mice. J Egypt Soc Parasitol. 2017;47(2):443–58. https://doi.org/10.21608/jesp.2017.77951.
116. Hall J, et al. Effectiveness of interventions designed to promote patient involvement to enhance safety: a systematic review. BMJ Qual Saf. 2010;19(5):e10–e10. https://doi.org/10.1136/qshc.2009.032748.
117. Martens TF, et al. Measuring the intravitreal mobility of nanomedicines with single-particle tracking microscopy. Nanomedicine. 2013;8(12):1955–68. https://doi.org/10.2217/nnm.12.202.
118. Liu H, et al. Co-delivery of bee venom melittin and a photosensitizer with an organic-inorganic hybrid nanocarrier for photodynamic therapy and immunotherapy. ACS Nano. 2019;13(11):12638–52. https://doi.org/10.1021/acsnano.9b04181.
119. Yun YH, Lee BK, Park K. Controlled drug delivery: historical perspective for the next generation. J Control Release. 2015;219:2–7. https://doi.org/10.1016/j.jconrel.2015.10.005.
120. Naahidi S, Jafari M, Edalat F, Raymond K, Khademhosseini A, Chen P. Biocompatibility of engineered nanoparticles for drug delivery. J Control Release. 2013;166(2):182–94. https://doi.org/10.1016/j.jconrel.2012.12.013.
121. Senthil R, Anitha R, Lakshmi T. Mineralized Collagen fiber-based dental implant: novel perspectives. J Adv Oral Res. 2024;15(1):62–9. https://doi.org/10.1177/23202068231199545.
122. Senthil R. Epoxy resin bioactive dental implant capped with hydroxyapatite and curcumin nanoparticles: a novel approach. Oral Maxillofac Surg. 2024;28(3):1303–12. https://doi.org/10.1007/s10006-024-01252-z.

123. Kavukcu SB, Çakır S, Karaer A, Türkmen H, Rethinam S. Curcumin nanoparticles supported gelatin-collagen scaffold: Preparation, characterization, and in vitro study. Toxicol Rep. 2021;8:1475–9. https://doi.org/10.1016/j.toxrep.2021.07.018.
124. Mundekkad D, Cho WC. Mitophagy induced by metal nanoparticles for cancer treatment. Pharmaceutics. 2022;14(11):2275. https://doi.org/10.3390/pharmaceutics14112275.
125. Moon H, Lee I-S, Lee H, Chae Y. A bibliometric analysis of bee venom research over the past 20 years. Korean J Acupunct. 2020;37(2):76–87. https://doi.org/10.14406/acu.2020.012.
126. Tavakoli M, Labbaf S, Mirhaj M, Salehi S, Seifalian AM, Firuzeh M. Natural polymers in wound healing: from academic studies to commercial products. J Appl Polym Sci. 2023. https://doi.org/10.1002/app.53910.
127. Tavakoli M, et al. Keratin- and VEGF-incorporated honey-based sponge-nanofiber dressing: an ideal construct for wound healing. ACS Appl Mater Interfaces. 2023;15(48):55276–86. https://doi.org/10.1021/acsami.3c11093.
128. Senthil R. Silk fibroin sponge impregnated with fish bone collagen: a promising wound healing scaffold and skin tissue regeneration. Int J Artif Organs. 2024;47(5):338–46. https://doi.org/10.1177/03913988241249296.
129. Senthil R. Preparation of bioscaffold supported by chitosan and nanocurcumin to promote tissue engineering. Regen Eng Transl Med. 2024;10(4):553–63. https://doi.org/10.1007/s40883-024-00344-2.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Current Organocatalysis, 2023, 12, 00-00

RESEARCH ARTICLE

Nano-reusable CuO-ZnO Catalyzed One-Pot Synthesis of 1-Amidoalkyl-2-Naphthols under Green Condition

Gopinath G. Patil[1,*], Bhausaheb B. Muntode[2], Nitin K. Jadhav[2], Vikram A. Dhere[2], Soghra Khabnadideh[3] and Raju R. Kale[2,*]

[1]Material Chemistry Lab, Department of Electronics, K. T. H.M. College, Savitribai Phule Pune University, Nashik, 422002, (M.S.), India; [2]Department of Chemistry, K. T. H.M. College, Savitribai Phule Pune University, Nashik, 422002, (M.S.), India; [3]Department of Medicinal Chemistry, School of Pharmacy and Pharmaceutical Sciences Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

ARTICLE HISTORY

Received July 17, 2024
Revised August 08, 2024
Accepted August 16, 2024

DOI
10.2174/0122133372337451240923173335

Abstract: ***Introduction***: The Developed CuO-ZnO nanocomposite has been demonstrated as a new and environmentally friendly catalyst for one-pot multicomponent reaction between aldehydes, 2-naphthol and amides in the synthesis of 1-amidoalkyl-2-naphthols.

Method: The new catalyst was synthesized by a ball-milling method by mixing a mixture of CuO and ZnO powder in various proportions and characterized by different spectroscopic methods such as powder X-ray diffraction (pXRD), Scanning Electron Microscopy (SEM), UV-Visible analysis, EDAX elemental analysis and mapping. The advantages of the devised protocol include a green approach, simple work-up procedures, avoidance of hazardous solvents, and good to excellent yields. RE

Sult: Evaluation of the catalyst performance in the synthesis of some 1-amidoalkyl-2-naphthols showed presentable results. Sixteen derivatives were synthesized in desirable yield by our new method (**4a–4p**). CuO-ZnO nanocomposite as a safe and efficient catalyst could be reused up to 5 runs for the synthesis of naphthol derivatives without any significant decrease in its potency.

Conclusion: The High purity of the products and desirable yields are other points that make the present work more attractive.

Keywords: Nanocomposite, heterogeneous catalyst, multicomponent reaction, green chemistry.

1. INTRODUCTION

Recently, nanotechnology has made significant strides in the synthesis and application of fascinating nanomaterials [1]. Nanoparticles, in particular, have garnered considerable attention as nanocatalysts [2], effectively bridging the gap between homogeneous and heterogeneous catalysis [3]. Thus, nanocatalysis holds promising prospects for advancing the synthesis of complex compounds [4]. Multicomponent reaction (MCR) is an important tool in drug discovery and medicinal chemistry for the synthesis of complex organic scaffolds in a single reaction vessel [5]. MCR approach assembles the group in a regio- and stereoselective way to produce the desired compound in a single pot by mixing two or more reactants without byproducts therefore, MCRs are quite popular among organic and medicinal chemists [6]. Furthermore, MCRs produce very intriguing and adaptable reactive intermediates that subsequently assemble or cyclize in a regio-divergent manner to provide heterocyclic molecules of biological significance [7]. As a result, a great deal of attention has been paid by academic and industrial researchers to the synthesis of libraries of heterocyclic compounds in drug discovery for lead identification, lead optimization, and final drug synthesis processes using the MCR strategy.

In this context, the use of heterogeneous catalysts in organic synthesis has received a great deal of attention as it avoids the tedious work-up procedures, byproducts and purification processes [8]. It is always desirable to use easily accessible catalysts in organic reactions with simple and efficient methods for developing green chemistry procedures. 1,3-amino-oxygenated moiety is ubiquitous to many biologically active scaffolds of biological interest [9]. Due to significance in biology, medicine, and pharmacology, numerous methods have been developed for the synthesis of 1- amidoalkyl-2-naphthols from aldehydes, 2-naphthols, and carboxamides using different catalysts, including p-TSA [10], P_2O_5 [11] Tannic acid [12], $Fe(HSO_4)_3$ [9], ionic liquid ([TEBSA][HSO_4]) [13], montmorillonite K10 [14], $FeCl_3$-SiO_2 [15] I_2 [16] nano-Fe_3O_4-SO_3H [1817 nano-S_8 [18], cellulose-SO_3H

*Address correspondence to this author at the Material Chemistry Lab, Department of Electronics, K. T. H. M. College, Savitribai Phule Pune University, Nashik, 422002, (M.S.), India; E-mail: rajunkale@gmail.com

2213-3372/23 $65.00+.00

© 2023 Bentham Science Publishers

Scanned with OKEN Scanner

ISSN – 2277-7911
Impact Factor – 5.958

YOUNG RESEARCHER
A Multidisciplinary Peer-Reviewed Refereed Research Journal

January - 2025
Vol. 14
Special Issue
No. 1

महिला ग्राहकांचा हरित विपणननाकडे असलेला कल

श्रीमती. ज्योती रुंजा भोर

सहाय्यक प्राध्यापक, वाणिज्य विभाग,
एम.व्ही.पी. समाजाचे के.पी.जी. कॉलेज, इगतपुरी, नाशिक, महाराष्ट्र, भारत.
***Corresponding Author:** श्रीमती. ज्योती रुंजा भोर*

DOI - 10.5281/zenodo.14881003

घोषवारा:

ग्रीन मार्केटिंग म्हणजे पर्यावरणास सुरक्षित मानल्या जाणाऱ्या उत्पादनांचे विपणन. यामध्ये उत्पादनातील बदल, उत्पादन प्रक्रियेतील बदल, टिकाऊ पॅकेजिंग, तसेच जाहिरातींमध्ये बदल करणे यासह क्रियाकलापांची विस्तृत श्रेणी समाविष्ट आहे. तरीही ग्रीन मार्केटिंगची व्याख्या करणे हे सोपे काम नाही. पर्यावरणीय विपणन आणि पर्यावरणीय विपणन या इतर समान संज्ञा वापरल्या जातात.हिरवे, पर्यावरणीय आणि इको-मार्केटिंग हे नवीन मार्केटिंग पध्दतींचे भाग आहेत जे केवळ विद्यमान मार्केटिंग विचार आणि सराव यावर पुन्हा फोकस, समायोजित किंवा वर्धित करत नाहीत, तर त्या दृष्टिकोनांना आव्हान देण्याचा प्रयत्न करतात आणि लक्षणीय भिन्न दृष्टीकोन प्रदान करतात. अधिक तपशिलात हिरवे, पर्यावरणीय आणि इको-मार्केटिंग या दृष्टिकोनांच्या गटाशी संबंधित आहेत जे सध्या प्रचलित असलेल्या विपणन आणि व्यापक विपणन वातावरणातील पर्यावरणीय आणि सामाजिक वास्तविकता यांच्यातील अभाव दूर करण्याचा प्रयत्न करतात .विपणन दाव्यांचे कायदेशीर परिणाम सावधगिरी बाळगतात किंवा अतिरंजित दाव्यांमुळे नियामक किंवा नागरी आव्हाने निर्माण होऊ शकतात.सदर संशोधनामध्ये महिला ग्राहकांचा हरित विपणननाकडे असलेला कल अभ्यासण्याचा प्रयत्न केला आहे.

प्रस्तावना:

विपणन म्हणजे ग्राहकाच्या दृष्टीने वस्तूंची खरेदी करणे, तर कारखानदार व विक्रेते यांच्या दृष्टीने वस्तूंची विक्री करणे होय. जाहिरातदारांच्या दृष्टीने वस्तूंची वा सेवांची जाहिरात करणे, तर वाहतुकदारांच्या दृष्टीने वस्तू बाजारपेठेपर्यंत पोहोचविणे, असा विपणनाचा अर्थ घेतला जातो. "उपभोक्ता, ग्राहक, भागीदार आणि समाज यांना उपयुक्त अशा वस्तुंची निर्मिती, संप्रेषण, वितरण आणि विनिमय करण्यासाठीची कृती संस्थांचा संच आणि प्रक्रिया म्हणजे विपणन होय. विपणन कार्यामुळे ग्राहकांच्या गरजांची पूर्तता होते. विपणनामुळे ग्राहकांना नवनवीन वस्तू व सेवांची माहिती मिळते आणि ग्राहकांना असणारी त्यांची उपयुक्तता समजते. समाजाच्या मागणी व चवीनुसार वस्तू आणि सेवांचा पुरवठा करून, त्यासंबंधीची योग्य ती माहिती पुरवून समाधान करण्याचा प्रयत्न विपणनामुळे होतो.वस्तू व सेवा यांच्या उत्पादनापासून किंवा निर्मितीपासून ते त्यांच्या उपभोगापर्यंत त्यांना प्रवाहित करण्याच्या उद्देशाने केल्या जाणाऱ्या भिन्नभिन्न परंतु एकीकृत व्यावसायिक क्रिया. 'विपणन' या संकल्पनेचा अर्थ विपणन कार्याशी संबंधित घटकांना वेगवेगळ्या प्रकारे अभिप्रेत असतो. विपणन म्हणजे ग्राहकाच्या दृष्टीने वस्तूंची खरेदी करणे, तर कारखानदार व विक्रेते यांच्या दृष्टीने वस्तूंची विक्री करणे होय. जाहिरातदारांच्या दृष्टीने वस्तूंची वा सेवांची जाहिरात करणे, तर वाहतुकदारांच्या दृष्टीने वस्तू बाजारपेठेपर्यंत पोहोचविणे, असा विपणनाचा अर्थ केला जातो. विपणनव्यवस्थेच्या माध्यमातून विविध गरजांची पूर्तता होत असते. ग्राहकांना त्यांच्या आवडीनिवडीनुसार व आर्थिक कुवतीनुसार वस्तू मिळाल्याने त्यांची गरज तर भागतेच पण मुख्य म्हणजे त्यांना खरेदीचे समाधान प्राप्त होते.

Scanned with OKEN Scanner

विस्तृत व कार्यक्षम विपणन व्यवस्थेमुळे ग्राहकांना वस्तूंचा मुबलक प्रमाणावर पुरवठा होऊन त्यांच्या जीवनमानात सुधारणा होते व विपणनखर्चही त्यामुळे नियंत्रित करता येतो. विपणनामुळे ग्राहकांना त्यांच्या गरजांनुसार बाजारपेठेत उपलब्ध असलेल्या विविध प्रकारच्या वस्तू, वस्तूंचे विभिन्न उपयोग इत्यादींबद्दल माहिती मिळू शकते. विपणन (Marketing) आणि ग्राहक (Customer) हे दोन घटक आहेत जे एकमेकांशी गहनपणे संबंधित आहेत. ग्राहकांच्या गरजा, अपेक्षा, आणि वर्तनाचे विश्लेषण करून व्यवसाय आपल्या विपणन धोरणांचे रूपरेषा ठरवतात. विपणनाचे उद्दिष्ट ग्राहकांच्या गरजा पूर्ण करणे आणि त्यांच्याकडून सकारात्मक प्रतिसाद प्राप्त करणे असते. ग्राहकांच्या गरजा आणि अपेक्षांची योग्य समज असणे हे विपणनाचे मुख्य उद्दिष्ट आहे.

ग्राहक:

ग्राहक असा असतो जो स्वत:साठी किंवा इतरांसाठी गैर-व्यावसायिक हेतूने वस्तू खरेदी करतो. ग्राहक म्हणजे एखादी व्यक्ती किंवा संस्था जी वस्तू किंवा सेवांची खरेदी करते किंवा वापरते. हा व्यवसायाच्या बाजारातील एक महत्वपूर्ण घटक आहे कारण त्याच्या खरेदीवर व्यवसायाची आर्थिक स्थिती अवलंबून असते".

महिला ग्राहक:

स्त्रिया सामाजिक, सांस्कृतिक आणि व्यावसायिक नेतृत्वाच्या सर्व पैलूंमध्ये शक्तिशाली प्रभावशाली आहेत आणि सर्व घरगुती खरेदी निर्णयांपैकी सुमारे 70% -80% घेतात, ते ग्राहक खर्चावर प्रभुत्व मिळवतात. महिला ग्राहक खरेदी विषयक जागरूक असतात. त्या नेहमी चिकित्सक पद्धतीने खरेदी करतांना दिसून येतात ग्राहकांची व्यक्तिगत आवडीनिवडी आणि रुची त्यांच्या खरेदी वर्तनावर प्रभाव टाकतात. उदाहरणार्थ, एखादा ग्राहक गोड पदार्थांची आवड असू शकते, त्यामुळे तो गोड पदार्थांची खरेदी अधिक करेल.ग्राहकांची जीवनशैली त्यांच्या खरेदी वर्तनावर प्रभाव टाकते. एक सक्रिय जीवनशैली असलेल्या ग्राहकांना फिटनेस उपकरणे आणि हेल्दी खाद्यपदार्थांची आवड असू शकते. ग्राहकांचे आर्थिक संसाधन त्यांच्या खरेदी क्षमतेवर परिणाम करतात. एक उच्च आर्थिक स्थिती असलेला ग्राहक महागड्या वस्तू अधिक सहजपणे खरेदी करू शकतो.

हरित विपणन:

ग्रीन मार्केटिंगमध्ये पर्यावरणावर नकारात्मक परिणाम होणार नाही अशा प्रकारे मानवी गरजा पूर्ण करण्यासाठी डिझाइन केलेल्या आणि अंमलात आणलेल्या सर्व विपणन क्रियाकलापांचा समावेश आहे . विपणन म्हणजे केवळ विक्री आणि जाहिराती नव्हे. यामध्ये उत्पादनाची कल्पना, उत्पादन, पॅकेजिंग, जाहिरात आणि वितरण यासारख्या अतिरिक्त क्रियाकलापांची विस्तृत श्रेणी समाविष्ट आहे. त्याचप्रमाणे, हरित विपणनामध्ये विपणन क्रियाकलापांची विस्तृत श्रेणी समाविष्ट केली जाते ज्यामध्ये उत्पादन डिझाइन आणि पुनर्रचना, हरित उत्पादन आणि एकात्मिक विपणन संप्रेषण इत्यादींचा समावेश असू शकतो. ग्रीन मार्केटिंगला पर्यावरणीय विपणन , शाश्वत विपणन , इको विपणन असेही म्हटले जाते. पर्यावरणीय विपणन शाश्वत विपणन ही एक संज्ञा आहे जी सामान्यत: ग्रीन मार्केटिंगचे प्रतिनिधित्व करते, जरी एक संकल्पना म्हणून टिकाऊपणा विवादास्पद असू शकते. शाश्वतता आणि शाश्वत विपणनामध्ये तीन मुख्य घटकांचा समावेश होतो. पर्यावरणीय, सामाजिक आणि आर्थिक तर हरित विपणन प्रामुख्याने पर्यावरणीय घटकांवर लक्ष केंद्रित करते. याची सुरुवात ग्राहकांपासून होते, दीर्घकालीन दृष्टीकोन असतो आणि त्यात नावीन्यपूर्णतेसाठी कंपनीच्या संसाधनांचा संपूर्ण वापर समाविष्ट असतो .हरित विपणनाचे महत्त्व विपणन शिस्तीत चांगले दस्तऐवजीकरण केले गेले असले तरी, अलीकडच्या वर्षांत ग्राहक आणि अनेक गैर-सरकारी संस्था (एनजीओ) कडूनही त्यात वाढ झाली आहे.

Scanned with OKEN Scanner

पर्यावरण संवर्धन तसेच नैतिक आणि शाश्वत उत्पादन आणि वस्तूंचे विपणन याबाबत ग्राहकांमध्ये जागरूकता वाढत आहे. विविध सरकारे आणि प्रादेशिक नियामक संस्थांनी पर्यावरणावरील उत्पादनांच्या निर्मिती आणि विपणनाचा प्रभाव कमी करण्यासाठी कायदे केले आहेत .युरोपियन युनियन (EU) चा पर्यावरण कर हे प्रादेशिक स्तरावर लागू केलेल्या अशा नियमांचे उदाहरण आहे . ग्रीन मार्केटिंग संशोधनाचे महत्त्व आणि उत्क्रांती गुणवत्ता आणि प्रमाणाच्या दृष्टीकोनातून शिस्तीचे विश्लेषण करण्यास आमंत्रित करते. कोणत्याही वैज्ञानिक शाखेतील संशोधनाचे प्रमाण आणि गुणवत्तेचे मूल्यांकन आणि मूल्यांकन करण्याचे अनेक मार्ग आहेत. विपणन संशोधनाच्या अनेक क्षेत्रांनी, सामान्यतः, आणि ग्रीन किंवा पर्यावरणीय विपणन, विशेषतः (काही), क्षेत्राच्या उत्क्रांतीचे मूल्यांकन करण्यासाठी बिब्लियोमेट्रिक विश्लेषण लागू केले आहे. आतापर्यंत अभ्यास केलेली क्षेत्रे सामान्य विपणन औद्योगिक विपणन डिजिटल विपणन आणि अलीकडे, हरित विपणन संबंधित आहेत. ग्रीन मार्केटिंगवरील फक्त दोन अभ्यास ओळखले गेले आणि असे दिसून आले की त्यांनी "ग्रीन मार्केटिंग", "सस्टेनेबल मार्केटिंग" आणि "पर्यावरण विपणन", किंवा "शाश्वत" आणि "मार्केटिंग" सारख्या काही शोध संज्ञा वापरल्या होत्या. पूर्वीचा अभ्यास लेखकांच्या वैशिष्ट्यांवर आणि विषयावर लिहिलेल्या हस्तलिखितांच्या विषयगत आणि पद्धतशीर क्षेत्रांवर केंद्रित होता, तर नंतरच्या अभ्यासात हरित विपणन संशोधनाच्या सक्रिय आणि उप-क्षेत्रांचा समावेश होता. शिवाय, दोन्ही बिब्लियोमेट्रिक अभ्यासांनी केवळ इंग्रजी भाषेत लिहिलेले जर्नल पेपर्स समाविष्ट (प्रकाशित) केले होते. जरी हरित विपणन हे एक प्रमुख उपक्षेत्र आहे आणि विपणनाचे एक उदयोन्मुख क्षेत्र असले तरी, या विषयावर मर्यादित ग्रंथोत्तेजक विश्लेषण उपलब्ध आहे. क्षेत्रातील ताज्या घडामोडी ओळखून त्यांचा मागोवा घेण्याची गरज आहे. ग्रीन मार्केटिंग साहित्यासंबंधी अर्थपूर्ण आणि सर्वसमावेशक निष्कर्ष काढण्यासाठी अशा केंद्रित दृष्टिकोनाचा वापर केला जाऊ शकतो. ग्रीन मार्केटिंगवरील संशोधनाची व्याप्ती वाढवण्याचा आणखी एक मार्ग म्हणजे सर्व भाषांमध्ये प्रकाशित पुस्तकातील प्रकरणे आणि परिषद कार्यवाही (सर्व शैक्षणिक साहित्य) समाविष्ट करणे. हे उल्लेखनीय आहे ग्रीन मार्केटिंगचा एक उपक्षेत्र आजपर्यंत केलेल्या इतर अभ्यासांमध्ये पुनरावलोकने, सामग्री विश्लेषण, पद्धतशीर साहित्य पुनरावलोकने आणि/किंवा उद्धरण विश्लेषणे यावर लक्ष केंद्रित केले आहे .

महिला ग्राहक वर्तन:

महिला ग्राहक वर्ग हा असंख्य, वैविध्यपूर्ण, बहुआयामी आणि अधिकाधिक प्रभावशाली आहे. म्हणूनच, महिलांना काय हवे आहे, त्यांची प्राधान्ये, गरजा आणि वर्तन याविषयी जाणून घेणे हे बाजारातील धोरणे तयार करण्यात, नवकल्पना चालविण्यास आणि उद्योगांमध्ये सर्वसमावेशक वाढीस चालना देण्यासाठी महत्त्वपूर्ण आहे. लोकसंख्येपेक्षा अधिक काटकसरी ग्राहक वर्तन प्रदर्शित करतात. ते 2022-2023 मध्ये राहणीमानाच्या वाढत्या खर्चासारख्या प्रतिकूल आर्थिक परिस्थितींबद्दल वाढलेली संवेदनशीलता देखील प्रदर्शित करतात. युरोमॉनिटर इंटरनॅशनल व्हॉईस ऑफ द कन्झ्युमर: लाइफस्टाइल सर्वेक्षण (जानेवारी ते फेब्रुवारी २०२३, n=४०,६९१) नुसार, ७६.४% महिलांनी वाढत्या दैनंदिन खर्चाबाबत चिंता व्यक्त केली, फक्त ३०% त्यांच्या सध्याच्या आर्थिक परिस्थितीबाबत आरामदायक आहेत.

पुरुषांच्या तुलनेत, महिला प्रतिसादकर्त्यांनी कर्जाबाबतही अधिक सावधगिरी बाळगली, बचतीपेक्षा जास्त कर्जदारपणा कमी नोंदवला, क्रेडिट कार्ड आणि इतर कर्जावर कमी अवलंबित्व आणि बचत वाढवण्यास प्राधान्य दिले. शिवाय, 46.3% महिला प्रतिसादकर्त्यांनी 2023 मध्ये सौदेबाजीसाठी त्यांचे प्राधान्य कबूल केले, इष्टतम उपाय आणि पैशाच्या मूल्यावर त्यांचे लक्ष केंद्रित केले. परिणामी, ग्राहक मूल्ये, विशेषत: गुणवत्ता, सामाजिक आणि पर्यावरणीय

Scanned with OKEN Scanner

जबाबदारी आणि सत्यता यांच्या व्यापक स्पेक्ट्रमसह परवडण्यायोग्यतेचे एकत्रीकरण, महिला ग्राहकांना उत्पादने आणि सेवांचे आकर्षण आणि आकर्षण वाढवते. कुटुंबाचा निर्णय घेताना स्त्रिया मोठ्या प्रभावशाली असतात. यात शंका नाही की जेव्हा वैयक्तिक खरेदीसाठी येतो, निर्णय घेणाऱ्या महिला एकमेव निर्णय घेणाऱ्या आहेत. बहुतेकदा आपण का विचार करतो.स्त्रिया पुरुषांच्या तुलनेत खरेदीसाठी जास्त कालावधी घेतात किंवा आमच्या मते त्या वस्तू का खरेदी करतात. खरेदीचे व्यवहार स्त्रिया पुरुषांपेक्षा वेगळ्या पद्धतीने विचार करतात. सर्वप्रथम का? उत्तर आहे कारण पुरुष आणि स्त्रियांच्या मेंदूमध्ये जैविक, न्यूरोलॉजिकल आणि वर्तनात्मक फरक आहेत. या फरक त्यांच्या खरेदी वर्तनावर परिणाम करतात. उदाहरणार्थ, पुरुषांमध्ये मेंदूच्या पेशी जास्त असतात स्त्रियांपेक्षा पण पुरुषांपेक्षा स्त्रियांमध्ये मेंदूच्या पेशींमध्ये फायबर कनेक्शन जास्त असते. म्हणून मेंदू स्त्री तिच्या सर्व इंद्रियांना टॅप करेल आणि पुरुषांपेक्षा अधिक स्तरांवर माहिती जोडेल आणि सामायिक करेल. अशा प्रकारे,मार्केटिंगच्या दृष्टीकोनातून, ते एक मोठे स्वप्न पाहतात आणि एकतर ब्रँडशी खोलवर जोडलेले असतात. त्याच वेळी, त्यांना पुरुषांपेक्षा खरेदी निर्णयापर्यंत पोहोचण्यासाठी अधिक वेळ लागतो.तुलनेने लहान आकाराच्या मेंदू असलेल्या स्त्रियांच्या तुलनेत पुरुषांचा मेंदू मोठा असतो. म्हणून,खरेदी करताना

विचार करता, पुरुषांच्या मेंदूची फक्त एक बाजू (डावी गोलार्ध) सक्रिय असते तर स्त्रिया डावी आणि उजवीकडे गोलार्ध सक्रिय त्याद्वारे, पुरुषांची विचारसरणी अधिक रेखीय असते तर महिलांची समग्र विचारसरणी असते.विचार करा आणि निर्णयावर पोहोचण्यासाठी गोष्टी एकत्रित करण्यात ते अधिक चांगले आहेत. महिला त्यांच्या संपर्कात अधिक असतात भावना कारण त्यांच्या भावना मेंदूच्या डाव्या आणि उजव्या गोलार्धात वितरीत केल्या जातात तर पुरुषांमध्ये त्यांच्या भावना उजव्या गोलार्धात केंद्रित आहेत.

हरित विपणन आणि महिला ग्राहक:

ग्रीन मार्केटिंग म्हणजे पर्यावरणास अनुकूल आणि पर्यावरणास सुरक्षित असे गृहीत धरलेल्या उत्पादनांचे विपणन. ग्रीन मार्केटिंगमध्ये उत्पादन प्रक्रिया, उत्पादनात बदल, उत्पादनांचे पॅकेजिंग आणि जाहिरातींमध्ये बदल करणे यासारख्या विस्तृत क्रियांचा समावेश होतो. जगभरात हरित विपणन चळवळ वेगाने वाढत आहे. ग्रीन मार्केटच्या विकासासाठी ग्राहक जागरूकता आणि प्रेरक प्रचारकांची गरज आहे. मात्र, अलीकडच्या काळात महिला ग्राहकांची मानसिकता बदलली असून त्या हिरव्या उत्पादनांना प्राधान्य देतात. इतर देशांच्या तुलनेत भारतात सेंद्रिय अन्न आणि पर्यावरणपूरक उत्पादने यांसारख्या हरित उत्पादनांबाबत जागरूकता कमी आहे. भारतीय महिला ग्राहकांना ग्लोबल वॉर्मिंगसारख्या समस्यांबद्दल फारच कमी जागरूकता आहे. हिरवा हा भारतातील पर्यावरणाच्या चेतनेचा प्रातिनिधिक रंग बनत आहे. व्यापारी मालाची उत्पत्ती आणि जागतिक पर्यावरणीय संकटाबद्दल महिला खरेदीदारांची वाढती जाणीव उद्योजकांना ग्राहकांना आकर्षित करण्यासाठी चांगली संधी प्रदान करते. हे लक्षात घेऊन, ग्रीन मार्केटिंगकडे ग्राहकांची एकाग्रता, प्राधान्य, समाधान, गैर-वापर आणि वृत्ती तपासण्यासाठी डेटा गोळा केला गेला. या अभ्यासासाठी, प्राथमिक आणि दुय्यम डेटा संकलन आणि सांख्यिकीय तपासणी दोन्ही गृहीतके तपासण्यासाठी वापरली जातात. अभ्यास वय आणि जागरूकता, शैक्षणिक पात्रता आणि प्राधान्य, रोजगार स्थिती आणि समाधान, मासिक उत्पन्न आणि गैर-वापर आणि माध्यम आणि हिरव्या उत्पादनांचे विपणन यांच्यातील संबंध प्रकट करतो.संपूर्ण औद्योगिकीकरणात पर्यावरण प्रदूषण झपाट्याने वाढत आहे. भारतीय ग्राहकांच्या ग्रीन खरेदी निर्णयांवर लोकसंख्याशास्त्र, विशेषतः लिंग, वय, शिक्षण आणि

Scanned with OKEN Scanner

उत्पन्न यांचा प्रभाव अभ्यासण्यासाठी हे संशोधन हाती घेण्यात आले. अभ्यासाचे परिणाम असे दर्शवतात की शिक्षण आणि उत्पन्नाचा लक्षणीय प्रभाव पडतो तर वय आणि लिंग यांचा तरुण भारतीय ग्राहकांच्या वर्तनावर फारसा प्रभाव पडत नाही. या अभ्यासातील अंतर्दृष्टी ग्रीन मार्केटर्सना उपयुक्त ठरेल कारण ते विविध लिंग, वयोगट, शैक्षणिक पार्श्वभूमी, व्यवसाय आणि सामाजिक आर्थिक स्तरांच्या भारतीय ग्राहकांसाठी धोरणे विकसित करतात.

हरित विपणन जागरूकता:

ग्रीन मार्केट उत्पादने पूर्वीच्या मालकीच्या वस्तू आहेत ज्यांची ब्रोकर्स, पुनर्विक्रेते किंवा उत्पादकांद्वारे दुरुस्ती, नूतनीकरण किंवा पुनर्नवीनीकरण केले गेले आहे, ज्यामुळे ते नवीन वस्तूंसाठी किफायतशीर पर्याय म्हणून पुनर्विक्रीसाठी योग्य बनतात. "ग्रीन मार्केट" हा शब्द वापरलेल्या किंवा बंद केलेल्या उत्पादनांना पुन्हा उत्पादक वापरात ठेवण्याच्या पर्यावरणास अनुकूल सरावावर प्रकाश टाकतो. जरी या वस्तूंचे पुनर्विक्री उत्पादकांशी स्पर्धा करू शकते, तरीही मूळ वापरकर्त्यांना नवीन खरेदीच्या मूल्यासाठी जुन्या उत्पादनांमध्ये व्यापार करण्याची परवानगी देऊन त्यांचा फायदा होतो. बंद केलेल्या घटकांची गरज असलेल्या उत्पादनांची देखभाल करण्यासाठी हरित बाजारातील वस्तूंचे भाग देखील आवश्यक असू शकतात. बऱ्याचदा " ग्रे मार्केट " मध्ये गोंधळलेले असते, ज्यामध्ये गैर-मानक वितरण चॅनेलद्वारे उत्पादनांची कायदेशीर पुनर्विक्री समाविष्ट असते, ग्रीन मार्केट त्याच्या पर्यावरणीय फायद्यांसाठी वेगळे आहे. वापरलेल्या इलेक्ट्रॉनिक्समधून काच, धातू आणि पॉलिमर यांसारख्या मौल्यवान सामग्रीचा पुनर्वापर केल्याने हानिकारक पर्यावरणीय प्रभावांना अयोग्य विल्हेवाट लावण्यापासून प्रतिबंधित करते, ज्यामुळे ते पर्यावरणास अनुकूल आणि किफायतशीर उपाय बनते.

ग्रीन मार्केटिंगचे महत्त्व:

हे पर्यावरणास अनुकूल उत्पादने आणि सेवांचा प्रचार आणि विक्री करण्याच्या पद्धतीचा संदर्भ देते. ग्रीन मार्केटिंगचा जगावर सकारात्मक प्रभाव पडू शकतो असे अनेक मार्ग आहेत. अधिक टिकाऊ व्यवसाय पद्धतींचा अवलंब करण्यासाठी कंपन्यांना प्रोत्साहित करणेटिकाऊपणाच्या महत्त्वाबद्दल ग्राहकांमध्ये जागरूकता वाढवणेनवीन, अधिक टिकाऊ उत्पादने आणि तंत्रज्ञानाच्या विकासास उत्तेजन देणे

कचरा, प्रदूषण आणि पर्यावरणावरील इतर नकारात्मक प्रभाव कमी करण्यास मदत करणे ग्रह आणि त्याच्या सर्व रहिवाशांच्या दीर्घकालीन आरोग्य आणि कल्याणासाठी

ग्रीन मार्केटिंगची उदाहरणे:

अशा अनेक कंपन्या आहेत ज्यांना ग्रीन मार्केटिंगचे महत्त्व समजले आहे आणि त्या दिशेने आवश्यक पावले उचलत आहेत:

पॅटागोनिया:

ही कपड्यांची कंपनी दीर्घकाळ टिकून राहण्याच्या वचनबद्धतेसाठी ओळखली जाते. आपल्या उत्पादनांमध्ये इको-फ्रेंडली सामग्री वापरण्यासोबतच, कंपनी टिकावूपणासाठी आपल्या वचनबद्धतेला चालना देण्यासाठी विविध हरित विपणन प्रयत्नांमध्येही गुंतलेली आहे. उदाहरणार्थ, याने मोहिमा सुरू केल्या आहेत ज्या ग्राहकांना नवीन वस्तू खरेदी करण्याऐवजी त्यांचे कपडे दुरुस्त करण्यास आणि पुन्हा वापरण्यास प्रोत्साहित करतात.

बॉडी शॉप:

आपल्या उत्पादनांमध्ये नैसर्गिक आणि पर्यावरणास अनुकूल घटकांचा वापर करण्याव्यतिरिक्त, द बॉडी शॉप विविध प्रकारच्या ग्रीन मार्केटिंग उपक्रमांमध्ये देखील गुंतलेले आहे. उदाहरणार्थ, हवामान बदल आणि वन्यजीव संरक्षण यासारख्या पर्यावरणीय समस्यांबद्दल जागरूकता वाढवण्यासाठी मोहिमा सुरू केल्या आहेत. शाश्वतता आणि सामाजिक

Scanned with OKEN Scanner

न्याय कारणांना प्रोत्साहन देण्यासाठी कंपनी विविध संस्थांसोबत भागीदारी देखील करते.उत्पादनांमध्ये पर्यावरणास अनुकूल सामग्री वापरणेपुनर्नवीनीकरण किंवा पुनर्वापर करण्यायोग्य सामग्रीच्या वापरास प्रोत्साहन देणे ग्राहकांना नवीन खरेदी करण्याऐवजी उत्पादने दुरुस्त करण्यासाठी आणि पुन्हा वापरण्यासाठी प्रोत्साहित करणेऊर्जा-कार्यक्षम किंवा कमी कार्बन फूटप्रिंट असलेली उत्पादने ऑफर करणे अक्षय ऊर्जा स्त्रोतांच्या वापरास प्रोत्साहन देणे. टिकाऊपणा आणि सामाजिक जबाबदारीला प्रोत्साहन देणाऱ्या संस्थांसह भागीदारी उत्पादन किंवा सेवेच्या पर्यावरणीय फायद्यांबद्दल ग्राहकांना शिक्षित करणे.इको-फ्रेंडली पॅकेजिंग साहित्य वापरणे सेंद्रिय, नैसर्गिक किंवा हानिकारक रसायनांपासून मुक्त उत्पादने ऑफर करणे.

ग्रीन मार्केटिंग महत्वाचे का आहे?

ग्रीन मार्केटिंग कंपन्यांना अधिक टिकाऊ व्यवसाय पद्धतींचा अवलंब करण्यास मदत करते कारण ते त्यांच्या उत्पादनांच्या आणि सेवांच्या पर्यावरणीय फायद्यांना प्रोत्साहन देते. शिवाय, ग्रीन मार्केटिंगमुळे ग्राहकांमध्ये शाश्वततेचे महत्त्व आणि त्यांच्या खरेदीच्या निर्णयाचा पर्यावरणीय प्रभाव याबद्दल जागरूकता निर्माण होऊ शकते. हे ग्राहकांना अधिक पर्यावरणपूरक निवडी करण्यासाठी प्रोत्साहित करू शकते जे कचरा, प्रदूषण आणि ग्रहावरील इतर नकारात्मक प्रभाव कमी करण्यात मदत करू शकतात.

ग्रीन मार्केटिंग कल्पना:

1. पर्यावरणीय उपक्रमांना समर्थन द्या:

पर्यावरणाच्या रक्षणाच्या महत्त्वाबद्दल जागरूकता निर्माण करण्यासाठी आणि कंपनीला पर्यावरणाबाबत जागरूक म्हणून स्थान देण्यासाठी स्थानिक पर्यावरण संस्थेच्या भागीदारीत समुद्रकिनारा स्वच्छता कार्यक्रम आयोजित करा.

2. मोठ्या प्रमाणात ईमेल सेवा वापरण्याचा विचार करा:

तुमच्या कंपनीच्या टिकाऊ उत्पादनांचा किंवा सेवांचा प्रचार करण्यासाठी मोठ्या प्रमाणात ईमेल सेवा वापरा आणि प्रभावीपणे मोठ्या प्रेक्षकांपर्यंत पोहोचत असताना तुमचा कार्बन फूटप्रिंट कमी करा.

3. तुमची उपकरणे आणि वाहने अपग्रेड करा:

तुमची उपकरणे आणि वाहने अपग्रेड केल्याने तुमच्या संस्थेचा कार्बन फूटप्रिंट कमी होतो.

4. पुनर्नवीनीकरण केलेले साहित्य वापरा:

पुनर्नवीनीकरण केलेल्या सामग्रीपासून बनवलेल्या प्रचारात्मक उत्पादनांची एक ओळ तयार करा आणि त्यांना आणि त्यांच्या पर्यावरणीय फायद्यांचा प्रचार करण्यासाठी विविध विपणन चॅनेल वापरा.

5. तुमची कंपनी इको-फ्रेंडली आहे हे हायलाइट करा:

एक विपणन मोहीम तयार करा जी तुमच्या कंपनीच्या पर्यावरणपूरक पद्धती आणि उत्पादने दाखवते, त्यांचे पर्यावरणीय फायदे हायलाइट करते आणि पर्यावरणाबाबत जागरूक ग्राहकांना आवाहन करते.

6. सोशल मीडिया मार्केटिंगमध्ये गुंतवणूक करा:

तुमच्या कंपनीच्या शाश्वत उत्पादने आणि इको-फ्रेंडली व्यवहारांचा प्रचार करण्यासाठी सोशल मीडिया वापरा. मोठ्या प्रेक्षकांपर्यंत पोहोचण्यासाठी आणि समुदायाची भावना निर्माण करण्यासाठी सशुल्क जाहिराती आणि संबंधित हॅशटॅगची निवड करा.

ग्रीन मार्केटिंग काम करते का?

कंपन्यांनी त्यांच्या ग्रीन मार्केटिंग उपक्रमांमध्ये प्रामाणिक आणि सत्य असायला हवे. ग्राहक हिरव्या दाव्यांपासून सावध असतात आणि टिकाऊपणासाठी खरोखर समर्पित नसलेल्या फर्मवर विश्वास ठेवण्यास कमी पडतात. ग्रीन मार्केटिंगची स्थापना वास्तविक पर्यावरणीय क्रियाकलापांवर केली जाणे आवश्यक आहे आणि परिणामकारक होण्यासाठी कंपनीची

Scanned with OKEN Scanner

प्रतिमा ग्रीनवॉश करण्यासाठी वापरली जाऊ नये. एकंदरीत, हरित विपणन व्यवसायांना त्यांच्या टिकावूपणाची जाहिरात करण्यास आणि पर्यावरणाच्या दृष्टीने संवेदनशील ग्राहकांना आवाहन करण्यात मदत करू शकते.

ग्रीन मार्केटिंग का वाढत आहे:

ग्रीन मार्केटिंग अनेक कारणांमुळे वाढत आहे, ज्यापैकी एक कारण म्हणजे ग्राहकांमध्ये पर्यावरणाच्या समस्यांबाबत वाढती जागरूकता आणि चिंता. परिणामी, ते पर्यावरणास अनुकूल आणि टिकाऊ उत्पादने आणि सेवा शोधण्याची अधिक शक्यता असते. या प्रवृत्तीमुळे कंपन्यांना पर्यावरणाबाबत जागरूक ग्राहकांना आवाहन करण्यासाठी अधिक टिकाऊ व्यवसाय पद्धतींचा अवलंब करण्यास आणि ग्रीन मार्केटिंगमध्ये गुंतण्यास प्रवृत्त केले आहे.ग्रीन मार्केटिंगच्या वाढीचे आणखी एक कारण म्हणजे कंपन्यांवर शाश्वत पद्धतींचा अवलंब करण्याचा आणि त्यांचा पर्यावरणावरील प्रभाव कमी करण्यासाठी दबाव वाढत आहे. सरकार, ग्राहक आणि इतर भागधारक कंपन्यांनी त्यांच्या ऑपरेशन्स आणि पुरवठा साखळींमध्ये अधिक जबाबदार असावेत अशी मागणी वाढत आहे. यामुळे कंपन्यांनी टिकावासाठी त्यांची बांधिलकी दाखवली आहे आणि त्यांच्या प्रतिस्पर्ध्यांपासून स्वतःला वेगळे केले आहे.

शेवटी, ग्रीन मार्केटिंगच्या वाढीचे श्रेय तांत्रिक प्रगतीला देखील दिले जाऊ शकते ज्यामुळे कंपन्यांसाठी टिकाऊ पद्धतींचा अवलंब करणे सोपे आणि अधिक किफायतशीर झाले आहे. परिणामी, कंपन्यांसाठी ग्रीन मार्केटिंगमध्ये गुंतणे आणि ग्राहकांना त्यांच्या पर्यावरणीय प्रयत्नांना प्रोत्साहन देणे अधिकाधिक व्यवहार्य झाले आहे.शेवटी, ग्रीन मार्केटिंग हा आधुनिक व्यवसायांचा एक महत्त्वाचा पैलू आहे कारण ते पर्यावरणीय समस्यांबद्दल जागरूकता वाढविण्यात मदत करते आणि ग्राहकांना अधिक टिकाऊ निवडी करण्यासाठी प्रोत्साहित करते. पर्यावरणास अनुकूल अशा उत्पादनांचा आणि पद्धतींचा प्रचार करून, कंपन्या केवळ त्यांचा स्वतःचा पर्यावरणीय प्रभाव कमी करू शकत नाहीत, तर सामाजिक बदलासाठी मोठ्या प्रमाणात योगदान देऊ शकतात.महिला ग्राहकांच्या वस्तू खरेदी मध्ये हरीत विपणनाचा कल वाढताना दिसून येत आहे.भविष्यात हा कल अजून वाढेल व हरित विपणन यशस्वी होईल यात शंका नाही.

निष्कर्ष:

सर्वसाधारणपणे, आजच्या व्यवसायांनी महिला ग्राहकांना हवी असलेली पुढील सर्वोत्कृष्ट गोष्ट तयार करण्याचा नेहमीच प्रयत्न केला पाहिजे कारण महिला ग्राहकांना त्यांची उत्पादने, सेवा इत्यादी सतत चांगल्या, वेगवान आणि स्वस्त राहण्याची इच्छा असते. नवीन तंत्रज्ञानाच्या या जगात, व्यवसायांना नवीन प्रकारच्या महिला ग्राहकांच्या गरजा आणि ट्रेंडमध्ये सामावून घेणे आवश्यक आहे कारण ते त्यांच्या व्यवसायाच्या यशासाठी आणि टिकून राहण्यासाठी महत्त्वपूर्ण ठरेल. ई-कॉमर्स सतत प्रगती करत आहे आणि व्यवसायांसाठी अधिकाधिक महत्त्वपूर्ण होत आहे कारण तंत्रज्ञान सतत प्रगती करत आहे आणि त्याचा फायदा घेतला पाहिजे आणि त्याची अंमलबजावणी केली पाहिजे.इंटरनेट आणि ई-कॉमर्सच्या स्थापनेपासून, व्यवसाय आणि महिला ग्राहक या दोघांसाठीही शक्यता अनंत बनल्या आहेत. महिला ग्राहकांसाठी अधिक पर्याय तयार करताना व्यवसायांसाठी नफा आणि प्रगतीसाठी अधिक संधी निर्माण करणे. तथापि, इतर कोणत्याही गोष्टीं प्रमाणेच, ई-कॉमर्समध्ये ग्राहकांच्या अनिश्चिततेसह त्याचे तोटे आहेत, परंतु चांगल्या निर्णयक्षमतेने आणि व्यवसाय पद्धतींद्वारे निराकरण किंवा टाळता येणार नाही असे काहीही नाही.ई-कॉमर्स व्यवसाय सुरू करताना अनेक घटक आणि चल आहेत ज्यांचा विचार करणे आणि त्यावर निर्णय घेणे आवश्यक आहे. यापैकी काहींमध्ये हे समाविष्ट आहे: ई-कॉमर्सचे प्रकार, विपणन धोरणे

Scanned with OKEN Scanner

आणि असंख्य अधिक. जर योग्य पद्धती आणि पद्धतींचे पालन केले गेले तर, ई-कॉमर्स सेटिंगमध्ये व्यवसाय मोठ्या प्रमाणात यश आणि नफ्यासह समृद्ध होईल.

संदर्भ:

१. बेल्झ एफ., पीटी के. (2009): सस्टेनेबिलिटी मार्केटिंग: एक जागतिक दृष्टीकोन. जॉन विली आणि सन्स

२. द एज ऑफ पर्स्युएशन (8 जानेवारी, 2010). "सीझन 5: ग्रीन असणे सोपे नाही: ग्रीन मार्केटिंग" . सीबीसी रेडिओ . 8 जानेवारी 2011 रोजी प्राप्त झाले .

३. कातरंदजीव, हिस्टो (जानेवारी 2016). "इकोलॉजिकल मार्केटिंग, ग्रीन मार्केटिंग, सस्टेनेबल मार्केटिंग: समानार्थी शब्द किंवा कल्पनांची उत्क्रांती?" (पीडीएफ) . आर्थिक पर्याय . अमेरिकन मार्केटिंग असोसिएशन: 71-82.

४. कार्ल ई., हेनियन; थॉमस सी. किनियर (जानेवारी 1976). "पर्यावरणीय विपणन". पर्यावरणीय विपणन . अमेरिकन मार्केटिंग असोसिएशन. p 168. ISBN 0-87757-076-0 , ISBN 978-0-87757-076-9 .

५. ऑटमन, जॅकलिन ए. (1993). ग्रीन मार्केटिंग: नवीन मार्केटिंग युगासाठी आव्हाने आणि संधी . NTC व्यवसाय पुस्तके. ISBN 0844232505. "ग्रीनलीफ पब्लिशिंग बुकशॉप" . 1 नोव्हेंबर 2010 रोजी पुनर्प्राप्त .

६. "ग्रीन मार्केटिंग"डॉड्स, जॉन (11 ऑगस्ट, 2006). "गीक मार्केटिंग 101" . जानेवारी 2008 रोजी प्राप्त झाले .

७. "हरित व्यापार आणि विकास" . Green Markets International, Inc. 3 मार्च 2016 रोजी मूळ (.html) वरून संग्रहित . 1 जानेवारी 2008 रोजी प्राप्त झाले .

८. मेंडलेसन, निकोला; मायकेल जे पोलोन्स्की (1995). "विश्वसनीय हरित विपणन विकसित करण्यासाठी धोरणात्मक युती वापरणे". जर्नल ऑफ कंझ्युमर मार्केटिंग .

९. https://www.marathihelp.

१०. Sathyapriya. J, Sathyapriya J., G. Karpagavalli G. Karpagavalli, Dr A. Ravi Dr. A. Ravi, and R. Vandhana R. Vandhana. "Green Marketing: An Insight." *International Journal of Scientific Research* 2, no. 4 (June 1, 2012): 38–40.

Scanned with OKEN Scanner

Nakshan Prasarak Santha's

Sangamner Nagarpalika Arts, D. J. Malpani Commerce and B. N. Sarda Science College (Autonomous), Sangamner, 422605

NAAC 3rd Cycle A+ Grade (CGPA 3.58), BEST COLLEGE AWARD by SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

Department of Economics and Research Centre

National Conference on

Recent Trends in Economics, Commerce, Management, Banking, Finance & Insurance

CERTIFICAT

This is to certify that **Ms. Jyoti Runja Bhor** of KPG&ARTS&COMMERCE AND SCIENCE COLLEGE&IGATPURI has actively participated in 'One Day National Conference on Recent Trends in Economics, Commerce, Management, Banking, Finance & Insurance' organized by **Department of Economics and Research Centre**, Sangamner Nagarpalika Arts, D. J. Malpani Commerce and B. N. Sarda Science College (Autonomous), Sangamner on 19th January 2025. He / She has presented paper entitled महिला शेतकऱ्यांचा हरित विपणनाकडे असलेला कल

Prof. (Dr) Gorakshanath Sanap
Head of Department of Economics

Prof. (Dr) Arun H. Gaikwad
Principal

Scanned with OKEN Scanner

ISSN – 2277-7911
Impact Factor – 5.958

YOUNG RESEARCHER
A Multidisciplinary Peer-Reviewed Refereed Research Journal

January - 2025
Vol. 14
Special Issue
No. 1

ऑनलाइन मार्केटिंगचा किरकोळ विक्री क्षेत्रावर झालेला परिणाम

श्री. मिलिंद रतन धेबडे

सहायक प्राध्यापक, वाणिज्य विभाग
MVPs कला, वाणिज्य आणि विज्ञान महाविद्यालय इगतपुरी. नाशिक
***Corresponding Author:** श्री. मिलिंद रतन धेबडे*

DOI - 10.5281/zenodo.14885666

घोषवारा:

आजच्या दैनंदिन जीवनामध्ये जीवन जगत असताना आधुनिक काळात इंटरनेट महत्त्वाची भूमिका बजावत आहे. आज आपण आपल्या प्रत्येक कामासाठी इंटरनेटचा वापर करतो. ऑनलाईन ही संकल्पना अस्तित्वात यायच्या अगोदर आपण खरेदी-विक्री ही इंटरनेटशिवाय करत होतो. पण आता ई-कॉमर्समुळे भारतामध्ये इंटरनेटच्या माध्यमातून खरेदी-विक्रीची प्रक्रिया अधिक सोईची झालेली आहे. ऑनलाईन शॉपिंग हा ई-कॉमर्सचा एक महत्वाचा भाग आहे. बहुतांश वापरकर्त्याद्वारे भारतातल्या ई-कॉमर्स वेबसाईटसच्या माध्यमातून खरेदीविक्रीचे व्यवहार केले जातात. ज्यामुळे आपल्याला परवडणाऱ्या किमतीमध्ये आपल्या आवडीनुसार उत्पादने खरेदी-विक्री करता येतात. ई-कॉमर्सचा विविध मार्केट आणि किरकोळ विक्री क्षेत्रावर दिवसेंदिवस खूप प्रभाव पडत चाललेला आहे. ऑनलाईनमुळे विविध बाजारघटकांना अनेकफायदेहोतआहेत. ई-कॉमर्समुळे ग्राहकांना कोणत्याही वेळी कोणत्याही ठिकाणी ऑनलाईन खरेदी करणे शक्य झाले आहे. ग्राहकांना आपल्या मोबाईल किंवा संगणकाच्या मदतीने कोणत्याही ठिकाणी ई-कॉमर्स वेबसाइटसवर अनेक उत्पादने शोधता तसेच बघता येतात , जी बहुतेकदा बाजारपेठांत उपलब्धही असत नाहीत. ई-कॉमर्समुळे घरी बसून ग्राहक विविध उत्पादने खरेदी करू शकतो.

ऑनलाईनमुळे होणारे फायदे जरी अनेक असले तरी पारंपारिक बाजारपेठांचे स्वरूप यामुळे बदलत चालले आहे. बाजारपेठा, त्यातील किरकोळ विक्रेते, सामान्य दुकानदार, वितरणसाखळीतील विविध घटक, हमाल, मजूर, वाहतूक व साठवणूक सेवा पुरवठादार आदी सर्वांचे घटत चाललेले उत्पन्न, कमी होणारा रोजगार, घटते सामाजिक स्थान आणि अनिश्चित भवितव्य यांचा प्रश्न निर्माण झाला आहे. एक प्रकारे स्थिर स्थावर असलेली प्रत्यक्ष बाजारव्यवस्थाच लयास जावून नवीन स्वरूपाची आभासी (व्हर्चुअल) बाजाररचना उदयास आली आहे. यातून निर्माण झालेल्या किरकोळ विक्रेत्यांच्या समस्यांचा अभ्यास होणे आर्थिकच नव्हे तर सामाजिक जाणीवेच्या भूमिकेतूनही महत्वाचे आहे.तसेच किराणादुकानदार, कापडदुकानदार, कटलरी व स्टेशनरीदुकान, मेडिकल स्टोअर्स,फेरीवाले/रस्त्यावरील दुकाने यांचा अभ्यासात समावेश होणार आहे.ऑनलाइन मार्केटिंगच्या आगमनाने किरकोळ क्षेत्रात लक्षणीय बदल झाले आहेत. या अभ्यासाचे उद्दिष्ट भारतातील किरकोळ क्षेत्रावर ऑनलाइन मार्केटिंगच्या प्रभावाची तपासणी करणे आहे. गुणात्मक आणि परिमाणवाचक दोन्ही डेटा संकलन आणि विश्लेषण पद्धती एकत्रित करून मिश्र-पद्धतींचा दृष्टिकोन वापरला गेला. परिणाम दर्शवितात की ऑनलाइन मार्केटिंगचा किरकोळ क्षेत्रावर सकारात्मक परिणाम झाला आहे, ब्रँड जागरूकता, ग्राहक प्रतिबद्धता आणि विक्री वाढली आहे. तथापि, तीव्र स्पर्धा, डेटा गोपनीयतेची चिंता आणि सतत नाविन्यपूर्ण गरजा यासारखी आव्हाने देखील ओळखली गेली.

प्रस्तावना:

किरकोळ क्षेत्र हे भारताच्या अर्थव्यवस्थेत महत्त्वपूर्ण योगदान देणारे आहे, ज्याचा देशाच्या GDP च्या 10% पेक्षा जास्त वाटा आहे. ऑनलाइन मार्केटिंगच्या वाढीमुळे रिटेल लँडस्केप बदलले आहे, किरकोळ विक्रेत्यांना ग्राहकांशी जोडण्यासाठी आणि विक्री वाढविण्याच्या नवीन संधी उपलब्ध करून दिल्या आहेत. या अभ्यासाचे उद्दिष्ट भारतातील रिटेल

Scanned with OKEN Scanner

क्षेत्रावरील ऑनलाइन मार्केटिंगच्या प्रभावाचे मूल्यांकन करणे आहे.व्यवहारातून निर्माण होणाऱ्या ग्राहकांच्या समस्या अभ्यासणे व त्यावर उपाययोजना सुचविणे.

साहित्य समीक्षा:

किरकोळ विक्री क्षेत्रासंबंधी अनेक संशोधन झालेले आहेत.

१.भारतातई-कॉमर्सग्रोथःसेगमेंटकॉन्ट्रिब्युशनचाअभ्यास

डी. महिपाल, उस्मानिया विद्यापीठ, के.शंकराय्या, उस्मानिया विद्यापीठ

ई-कॉमर्स हा ई-व्यवसायाचा उपसंचआहे, ज्याचा अर्थ ई-कॉमर्स एक प्रभावी विक्री साधन आहे आणि सरळ वितरण प्रणाली आहे, जिथे पारंपारिक वितरण प्रक्रिये पेक्षा भिन्न म्हणजे सरळ वितरण प्रणाली ग्राहकांना उत्पादने वितरीत करण्यासाठी पर्यायी पद्धत आहे. हेजॉबर्स, व्यावसायिक, घाऊक विक्रेते आणि किरकोळ विक्रेते यांच्या सारख्या मध्यस्थांचा वापर करते.सोप्याभाषेत, ई-कॉमर्स सिस्टम थेट वितरण प्रणाली सारखेच आहे, कारण उत्पादनाच्यां ऑर्डर मिळविण्यासाठी वेबसाइट्सचा वापर करते आणि वितरण प्रक्रियेमधून मध्यस्थांना दूर करून उत्पादकांकडून वस्तू व सेवा थेट शेवटच्या ग्राहकांपर्यंत हस्तांतरित करतात.

ई-कॉमर्स ग्रोथ इन इंडिया:

गेल्या दोन दशकांमध्ये इंटरनेट आणि मोबाईल फोनच्या वाढत्या संप्रेषणाचा मार्ग बदलला आहे आणि व्यवसाय करीत आहे आणि सध्या ई-कॉमर्सने इंटरनेट आणि मोबाईल फोन क्रांतीवर जोरदार कल केला आहे. ज्यामुळे व्यवसाय त्यांच्या ग्राहकांपर्यंत पोहोचण्याचा मार्गावर मूलत: बदल झाले आहेत आणि ई-वाणिज्याने वादळामुळे किरकोळ जग घेतले आणि विविध व्यवसाय आणि व्यावसायिक मॉडेल्ससह ई-कॉमर्स उपक्रम असलेल्या संपूर्ण उद्योजकांच्या कल्पनांना मोहित केले. गेल्या काही वर्षांत झालेल्या स्फोटक वाढीने सर्वसाधारणपणे आणि विशेषत: ई-कॉमर्सच्या क्षेत्रातील सर्वात मोठ्या कंपन्यांना यापूर्वीच्या ई-कॉमर्स मार्केटच्या आकारावरून दिसून आले आहे.

२.मल्लिकार्जुनराव (2006), "भारतातील ई-कॉमर्सच्या वाढीवर परिणाम करणारे घटक"

या साहित्याचा अभ्यास करताना असे निष्कर्ष काढले की, ऑनलाइन खरेदी आणि विक्रेत्यांविषयी माहितीची उपलब्धता यांच्यात जवळचा संबंधआहे, म्हणूनच सुचवले की अधिक माहिती ऑनलाइन प्रतिसाद कर्त्याच्या आरामाची पातळी वाढवेल.

३.मुस्तफा (२०११)

या लेखकांनी सौदी अरेबियामधील ई-कॉमर्स ग्राहकांच्या समाधानाचा, विश्वास आणि निष्ठेच्या निर्धारकांचा अभ्यास केला आणि असे आढळले की सौदी अरेबियामधील B2C ई-कॉमर्सच्या ग्राहक निष्ठेवर ग्राहकांच्या समाधानावर जोरदार परिणाम झाला आहे परंतु ग्राहकांच्या विश्वासावर कमकुवत परिणाम झाला आहे.

४.नमिता आणि प्रीती(2011):

या लेखकाने निष्कर्ष काढला की फॅक्टर ॲनालिसिसचा वापर करुन ऑनलाइन ग्राहकांचे वर्तन आणि ऑनलाइन शॉपिंग वापरणे, विश्वास, उत्पादन आणि सेवांबद्दल माहिती, सुविधा, सहज प्रयत्न करता येते.

५.राकेश आणि खरे, (२०१२), "भारतातील ऑनलाइन शॉपिंग वर्तन मध्ये बढती आणि मूल्यचे परिणाम"

या लेखकाने जे विश्लेषण केले त्यांच्या अभ्यासात असे दिसून आले आहे की, ऑनलाइन खरेदी-विक्रेत्यांकडून गुंतवणूक आकर्षित करते आणि ई-विक्रेत्यांच्या इतर जाहिरात पद्धतींचा प्रभाव पडत नाही. भारतीय ग्राहक ऑनलाईन उत्पादने किंवा सेवा खरेदी करताना जाहिरातींना महत्त्वाचे गुणधर्म म्हणून जाहिरातींकडे पाहिले जाऊ शकत नाही.

Scanned with OKEN Scanner

६.चॅटर्जी, (2016) "ई-कॉमर्स इन इंडिया: संस्कृती आणि आव्हानांचा आढावा"

सदर लेखकाने केलेल्या अभ्यासातून असे दिसून आले आहे की, जगभरातीलई-कॉमर्स व्यवसायाने व्यवसायाच्या लँडस्केपमध्ये उल्लेखनीय बदल घडवून आणला आहे आणि यामुळे व्यवसायाच्या परिदृष्टीचीही नव्याने व्याख्या केली आहे. जागेचे आणि वेळेचे अनुक्रम बदलू आणि यामुळे व्यवसाय व्यवस्थापनाच्या स्वरूपाची संकल्पना सुधारली गेली. इंटरनेट वापरकर्त्यांसह मोठी लोकसंख्या असणारा भारत ई-कॉमर्स वातावरणातील प्रमुख खेळाडूंपैकी एक असेल अशी अपेक्षा आहे.

७.ई-कॉमर्स- मध्ये रिटेल क्षेत्राचा बदलणारा चेहरा

प्रा. मुबारक, सहायक प्राध्यापक, वाणिज्य अभ्यास व संशोधन विभाग विजयनगर श्रीकृष्णदेवराय युनिव्हर्सिटी, बल्लारी पदव्युत्तर केंद्र-नंदीहल्ली सांदूर

ई-कॉमर्स उद्योगाच्या वाढीमुळे असंख्य लोकांचे जीवन सोपे झाले आहे. हे फक्त भेटवस्तूच नाहीतर दररोज देखील आहे किराणा, नोटबुक आणि पेनसारख्या वस्तूज्या ऑनलाइन खरेदी करता येतील. पुस्तके, कपडे, शूज, दागिनेआणि सामान, प्रवास तिकिटे आणि हॉटेल बुकिंग ही ऑनलाइन खरेदी केलेल्या सामान्यांपैकी काही आहे. ई-कॉमर्स आहे इंटरनेटच्या माध्यमातून उत्पादनांचा आणि सेवेचा व्यापार. या पेपरमध्ये आम्ही इंधन देणारे घटक सादर करतो. भारतातील ईकॉमर्स क्षेत्राचीवाढ. माझ्या अभ्यासाची पद्धत लेख, जसे की दुय्यमस्त्रोतांकडून आहे. जर्नल्स, अहवाल, कागदपत्रे, ब्लॉग आणि कॉन्फरन्सिंग कार्यवाही. ई-कॉमर्स हा सर्वाधिक वाढणार्या व व्यवसायांपैकी एक, भारतामध्ये गुंतवणूकीची मोठी बाजारपेठ आहे. गेल्यावर्षापासून आणि गुंतवणूकीत मोठी वाढ झाली आहे. अधिक येत्या काही वर्षांत अपेक्षित आहे. मोबाइल आणि इंटरनेट वापरकर्त्यांच्या वेगवान वाढीमुळे ई-कॉमर्सची सोय झाली आहे. शहरी आणि ग्रामीण दोन्ही शहरांमध्ये व्यवसाय. व्यापलेल्या विषयांमध्ये वाणिज्य अभ्यासाच्या अटी, कीड्रायव्हर्सचा समावेशआहे..

८.ई-कॉमर्सवर अभ्यास करा आणि त्याचे मार्केट आणि भारतातील किरकोळ विक्रेत्यांवरील परिणाम

मे2017लेखकः मेनलदहिया (महाराष्ट्र सूरजमल संस्था, जनकपुरी, दिल्ली, भारत)

आपल्या दैनंदिन जीवनात इंटरनेटची महत्त्वपूर्ण भूमिकाआहे. आम्ही जवळजवळ प्रत्येक कामासाठी दररोज इंटरनेट वापरतो. ई-कॉमर्स खरेदी करण्यापूर्वी बाजारात इंटरनेटशिवाय खरेदी-विक्रीकेली जायची पण ई-कॉमर्स भारतात आल्यानंतर आमचे आयुष्य अधिक सोयीचे झाले आहे कारण त्याचे फायदे अनेक आहेत. ऑनलाइन शॉपिंग हा ई-कॉमर्सचा एक भाग आहे. जो बहुतेक वापरकर्त्यांद्वारे भारतातल्या ई-कॉमर्स वेबसाइट्समुळे केला जातो ज्यामुळे आम्हाला परवडणार्या किंमतीवर आमच्या आवडीनुसार उत्पादने खरेदी-विक्री करता येतात. ई-कॉमर्स वेबसाइटचा विविध मार्केट आणि किरकोळविक्रेत्यांवर खूप प्रभाव आहे. यापेपरमध्ये आम्ही विविधबाजारपेठा आणि किरकोळ विक्रेत्यांविषयी आणि त्यांच्या वरील ई-कॉमर्सच्या प्रभावांबद्दल चर्चा केली आहे.

कार्यपद्धती:

१. संशोधन डिझाइन: गुणात्मक आणि परिमाणवाचक डेटा संकलन आणि विश्लेषण पद्धती दोन्ही एकत्रित करून मिश्र पद्धतींचा दृष्टिकोन.

२.माहिती संकलन: ऑनलाइन सर्वेक्षण, रिटेल व्यवस्थापकांच्या मुलाखती आणि दुय्यम डेटाचे विश्लेषण.

३.माहिती विश्लेषण: वर्णनात्मक आकडेवारी, अनुमानात्मक आकडेवारी आणि थीमॅटिक विश्लेषण.

भारतीय किरकोळ विक्रेत्यांसाठी ऑनलाइन मार्केटिंगचे फायदे:

१. वाढलेली ब्रँड जागरूकता: ब्रँडची ग्राहकांमध्ये ओळख वाढते, मार्केटिंग अधिक संस्मरणीय बनते, इतर मार्केटिंगचे यश वाढते, कंपनी भरभराटीसाठी ठोस

Scanned with OKEN Scanner

आणि विश्वासार्ह ब्रँड बनतो. ऑनलाइन मार्केटिंगमुळे किरकोळ विक्रेत्यांना अधिकाधिक प्रेक्षकांपर्यंत पोहोचता आले आहे, आणि त्यामुळे जागरुकता वाढली आहे.

२.**सुधारित ग्राहक प्रतिबद्धता:** सोशल मीडिया आणि ईमेल मार्केटिंग यांसारख्या डिजिटल मार्केटिंग धोरणांमुळे ग्राहकांशी अधिक संवाद आणि प्रतिबद्धता सुलभ झाली आहे.

३. **वर्धित विक्री:** ऑनलाइन मार्केटिंगने किरकोळ विक्रेत्यांसाठी नवीन विक्री चॅनेल उघडले आहेत, ज्यामुळे ते भौगोलिक सीमांच्या पलीकडे ग्राहकांपर्यंत पोहोचू शकतात.

भारतीय किरकोळ विक्रेत्यांसाठी ऑनलाइन मार्केटिंगचे आव्हाने:

१.**तीव्र स्पर्धा:** भारतीय किरकोळ बाजार अत्यंत स्पर्धात्मक आहे, त्यामुळे असंख्य विक्रेते ग्राहकांचे लक्ष वेधून घेतात.

२.**माहिती गोपनीयतेची चिंता:** किरकोळ विक्रेत्यांनी हे लक्ष्यात घेतले पाहिजे की ग्राहक डेटा संरक्षित आणि सुरक्षि आहे, डेटा गोपनीयते बद्दलच्या समस्यांचे निराकरण करणे.

३. **अद्यायवतेची गरज:** वेगाने विकसित होत असलेल्या डिजिटल लँडस्केपसाठी किरकोळ विक्रेत्यांनी त्यांच्या ऑनलाइन मार्केटिंग धोरणांमध्ये सतत नवनवीन आणि रुपांतर करणे आवश्यक आहे.

४.**ऑनलाइन विपणन धोरणांचा विकास:** ऑनलाइन विपणन धोरणांचा विकास करण्यासाठी खालील गोष्टींचा विचार करावा लक्ष्यित प्रेक्षक कोण आहेत, कंपनीचे सामर्थ्य आणि कमकुवतता काय आहे, प्रतिस्पर्धी कोण आहेत, बाजारातील ट्रेंड कसे आहेत, ग्राहकांचे मार्केटिंग उद्दिष्टे काय आहेत.

ऑनलाइन विपणन धोरणांचे काही प्रकार: संलग्न विपणन,सामग्री विपणन,ईमेल विपणन,विपणन विश्लेषणमोबाइल विपणन,प्रति-क्लिक-पे,शोध इंजिन ऑप्टिमायझेशन,सोशल मीडिया मार्केटिंग, ऑनलाइन विपणन धोरणांचा विकास करून, कंपन्यांना त्यांच्या ग्राहकांना वेगवेगळ्या प्रकारे प्रवेश मिळू शकतो. किरकोळ विक्रेत्यांसाठी ऑनलाइन विपणन धोरणे विकसित करणे.

५.**प्रभावशाली विपणनाची भूमिका:** प्रभावशाली विपणन म्हणजे, ब्रँड्सच्या उत्पादनांचा किंवा सेवांचा प्रचार करण्यासाठी सोशल मीडियावर प्रभावशाली व्यक्तींशी सहकार्य करणे. याला इन्फ्लुएंसर मार्केटिंग असेही म्हणतात. प्रभावशाली विपणनाची भूमिका खालीलप्रमाणे आहे:

ब्रँड जागरूकता वाढवणे, ब्रँड एक्सपोजर वाढवणे, संभाव्य ग्राहकांपर्यंत पोहोचणे, ब्रँड दृश्यमानता वाढवणे, ब्रँड निष्ठा वाढवणे, ब्रँड परसेप्शन बदलणे, ब्रँडला निर्मात्यावर विश्वास ठेवणारे ग्राहक शोधणे,त्यांना खरेदी करण्यासाठी प्रभावित करणे.

६.**सोशल मीडियाचा प्रभाव:** सोशल मीडियाचा प्रभाव सकारात्मक आणि नकारात्मक दोन्ही प्रकारचा असतो. सोशल मीडियावर भरपूर माहिती उपलब्ध असल्याने, विश्वासार्ह स्रोत आणि चुकीची माहिती यातील फरक ओळखणे कठीण आहे. सोशल मीडियाचा प्रभाव मानसिक आरोग्य, नातेसंबंध आणि सामाजिक वर्तनावर नकारात्मक परिणाम करू शकतो.

सोशल मीडियाचा प्रभाव:

१. सोशल मीडियावर खोट्या बातम्या आणि अफवा झपाट्याने पसरू शकतात.
२. सोशल मीडियामुळे मुलांच्या आरोग्यावर परिणाम होऊ शकतो.
३. सोशल मीडियामुळे मानसिक स्वास्थ्य बिघडू शकते.
४. सोशल मीडियामुळे व्यसन, चिंता आणि चुकीची माहिती यांचा समावेश होतो.
५. सोशल मीडियामुळे नातेसंबंधांवर नकारात्मक परिणाम होऊ शकतो. त्यामुळे रिटेल क्षेत्रावर सोशल मीडियाचा प्रभाव तपासणे.

Scanned with OKEN Scanner

भविष्यातील दृष्टिकोन:

या ऑनलाइन विपनणामुळे भारतीय भारतीय किरकोळ क्षेत्रात सतत वाढ होत आहे तसेच यामध्ये वाढत्या इंटरनेटमुळे, स्मार्टफोनमुळे, ऑनलाइन पेमेंटमुळे किरकोळ विक्रेत्यांनी ग्राहकांच्या बदलत्या फॅशनचा आणि वर्तनाचा अभ्यास करणे आवश्यक आहे. जर किरकोळ विक्रेत्यांची विक्री प्रभावीपणे करायची असेल तर त्यांना प्रभावी ऑनलाइन मार्केटिंगची धोरणे विकसित करावी लागतील असे केल्याने ते ग्राहकांच्या ऑनलाइन मार्केटिंगची पूर्ण क्षमतेचा पूर्ण अभ्यास करून भविष्यात विक्रीत वाढ होण्यासाठी मदत होऊ शकेल. आणि त्यामुळे आपल्या व्यवसायात वाढ घडून आणू शकतील.

स्पर्धात्मक राहण्यासाठी, भारतीय किरकोळ विक्रेत्यांनी प्रभावी डिजिटल मार्केटिंग धोरणे विकसित करण्यावर, डेटा विश्लेषणाचा लाभ घेण्यावर आणि ग्राहकांच्या अनुभवाला प्राधान्य देण्यावर लक्ष केंद्रित केले पाहिजे. असे केल्याने, ते ऑनलाइन मार्केटिंगची पूर्ण क्षमता अनलॉक करू शकतात आणि शाश्वत व्यवसाय वाढ करू शकतात.

निष्कर्ष:

ऑनलाइन मार्केटिंगने भारतातील रिटेल क्षेत्राचा कायापालट केला आहे, ज्यामुळे किरकोळ विक्रेत्यांना ग्राहकांशी संपर्क साधण्यासाठी आणि विक्री वाढविण्याच्या नवीन संधी उपलब्ध झाल्या आहेत. तथापि, तीव्र स्पर्धा, डेटा गोपनीयतेची चिंता आणि सतत नाविन्यपूर्णतेची गरज यासारख्या आव्हानांना संबोधित करणे आवश्यक आहे.

संदर्भसूची :

१. डॉ.एस.पी.गिरासे, डॉ.ए.पी.सरोदे, डॉ.जे.बी.मोरे."किरकोळविक्रीव्यवस्थापनभाग-1"प्रशांत प्रकाशन,

२. फिलीपकोटलर, "Marketing Insights from A toZ",Published by John Wiley &Sons.Inc.

३. Philip kotler, HermawanKartajaya, IwanSetawan, "Moving from Traditional to Digital", Published by John Wiley &Sons.Inc.

४. Afrina, Y., Sadia, T. &Kaniz, F. (2015). Effectiveness of digital marketing in the challenging age: An empirical study. International Journal of Management Science and Business Administration, 1(5), 69-80.

५. Khare, A. & Rakesh, S. (2011). Antecedents of online shopping behaviour in India: An examination. Journal of Internet Commerce, 10(4), 227-244.

६. Namita, B. &Preeti, K. (2013). Online consumer behaviour: An exploratory study. Global Journal of Commerce and Management Perspective, 2(4), 98-107.

७. www.marketeers.com

८. www.staenz.com

९. https://www.lyfemarketing.com/blog/wo.content/uploads

१०. www.repshy.com

११. www.bookganga.com

१२. www.vishwakosh.marathi.gov.in

१३. www.kopykitab.com

Scanned with OKEN Scanner

Shikshan Prasarak Sanstha's

Sangamner Nagarpalika Arts, D. J. Malpani Commerce and B. N. Sarda Science College (Autonomous), Sangamner, 422605

NAAC 3rd Cycle A+ Grade (CGPA 3.58), BEST COLLEGE AWARD by SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

Department of Economics and Research Centre

National Conference on

Recent Trends in Economics, Commerce, Management, Banking, Finance & Insurance

CERTIFICATE

This is to certify that **Mr.Milind Ratan Dhebade**

of Rayat Shikshan Sansthas C.D.Jain College Shrirampur. has actively participated in **'One Day National Conference on Recent Trends in Economics, Commerce, Management, Banking, Finance & Insurance'** organized by **Department of Economics and Research Centre**, Sangamner Nagarpalika Arts, D. J. Malpani Commerce and B. N. Sarda Science College (Autonomous), Sangamner on **19th January 2025**. He / She has presented paper entitled ऑनलाइन मार्केटिंगचा किरकोळ विक्री क्षेत्रावर झालेला परिणाम.

Prof. (Dr) Gorakshanath Sanap
Head of Department of Economics

Prof. (Dr) Arun H. Gaikwad
Principal

Scanned with CamScanner

Scanned with OKEN Scanner

ISSN – 2277-7911
Impact Factor – 5.958

YOUNG RESEARCHER
A Multidisciplinary Peer-Reviewed Refereed Research Journal

January - 2025
Vol. 14
Special Issue
No. 1

E-Commerce

Mr. Gopal Santu Layare
Assistant Professor,
Dept. of Commerce, M. V. P. Samaj's K. P. G. College, Igatpuri, Nashik, Maharashtra, India.
Corresponding Author: Dr. N. S. Sable

DOI - 10.5281/zenodo.14936526

Abstract:

E-commerce (electronic commerce) refers to commercial behavior including the electronic buying or selling products and services which are conducted on online platforms or over the Internet E-commerce draw on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management system, and automatic data compilation systems. E-commerce is the largest sector of the electronics industry and is in turn determined by the technological advances of the semiconductor industry. The term was coined and first employed by Robert Jacobson. Electronic Commerce Act, carried by the late Committee Chairwoman Gwen Moore (D-L.A.) and enacted in 1984.E-commerce classically uses the web for at least a part of a transaction's life series although it may also use other technologies such as e-mail. Typical e-commerce transactions include the buy of products or services .There are three areas of e-commerce: online retailing, electronic markets, and online sale. E-commerce is supported by electronic business. The survival value of e-commerce is to allow consumers to shop online and pay online through the Internet, saving the time and space of customers and enterprise, really humanizing transaction competence, especially for busy office workers, and also saving a lot of precious time. Online shopping for retail sales direct to consumers via web sites and mobile apps, conversational commerce using live chat, chat bots, and voice assistants. Providing or participating in online marketplaces, which process third-party business-to-consumer (B2C) or consumer-to-consumer (C2C) sales; Business-to-business (B2B) buying and selling. Gathering and using demographic data through web contacts and social media B2B electronic data interchange. Marketing to prospective and established customers by e-mail or fax .attractive in pretail for launching new products and services. Online financial exchanges for currency exchanges or trading purposes.

There are five essential categories of E-commerce: Business to Business, Business to Consumer Business to Government Consumer to Business Consumer to Consumer. E-commerce has become an important tool for small and large businesses worldwide, not only to sell to customers, but also to engage them. Consumer to Consumer E-commerce has become an important tool for small and large businesses worldwide, not only to sell to customers, but also to engage them. Cross-border e-Commerce is also an necessary field for e- Commerce businesses. It has responded to the trend of globalization. It shows that many firms have opened up new businesses, expanded new markets, and overcome trade barriers; more and more enterprises have started exploring the cross-border cooperation field. In addition, compared with traditional cross-border trade, the information on cross-border e-commerce is more hidden In the period of globalization, cross-border e-commerce for inter-firm companies means the activities, interactions, or social relations of two or more e-commerce enterprises. However, the success of cross-border e-commerce promotes the development of small and medium-sized firms, and it has finally become a new transaction mode.. SMES (small and medium enterprises) can also precisely match the demand and supply in the market, having the industrial chain memorization and creating more revenues for companies.

Keywords: E-Commerce, Marketing Strategy, Consumer Segmentation, Collection of Comments from Consumers, Business Analysis.

Scanned with OKEN Scanner

Introduction:

In 2012, e-commerce sales topped $1 trillion for the first time in history. Mobile devices are playing an increasing role in the mix of e-commerce, this is also commonly called mobile commerce, or m-commerce. In 2014, one approximation saying purchases made on mobile devices making up 25% of the market by 2017.For traditional businesses, one research stated that information technology and cross-border e-commerce is a good opportunity for the fast development and growth of enterprises. Many companies have invested an enormous volume of investment in mobile applications. There is no limit of time and space, there are more opportunities to reach out to customers around the world, and to cut down unnecessary middle links, thereby reducing the cost price, and can benefit from one on one large customer data analysis, to achieve a high degree of personal customization strategic plan, in order to fully enhance the core competitiveness of the products in the company. Modern 3D graphic technologies, such as Facebook 3D Posts, are considered by some social media marketers and advertisers as a preferable way to promote consumer goods than static photos, and some brands like Sony are already paving the way for augmented reality commerce. Wayfair now lets you inspect a 3D version of its furniture in a home setting before buying. Despite investments, the chain struggled to win market share in the age of digital commerce. E-commerce markets are growing at noticeable rates. The online market is expected to grow by 56% in 2015–2020. In 2017, retail e-commerce sales worldwide amounted to 2.3 trillion US dollars and e-retail revenues are projected to grow to 4.891 trillion US dollars in 2021. Traditional markets are only expected 2% growth during the same time. E-commerce allows customers to overcome geographical barriers and allows them to purchase products anytime and from anywhere. Online and traditional markets have different strategies for conducting business. Traditional retailers offer fewer variety of products because of shelf space where, online retailers often hold no inventory but send customer orders directly to the manufacturer. The pricing strategies are also different for traditional and online retailers. Traditional retailers base their prices on store traffic and the cost to keep inventory. Online retailers base prices on the speed of delivery. There are two ways for marketers to conduct business through e-commerce fully online or online along with a brick and mortar store. Online marketers can offer lower prices, greater product selection, and high efficiency rates. Many customers prefer online markets if the products can be delivered quickly at relatively low price. However, online retailers cannot offer the physical experience that traditional retailers can. It can be difficult to judge the quality of a product without the physical experience, which may cause customers to experience product or seller uncertainty. Another issue regarding the online market is concerns about the security of online transactions. Many customers remain loyal to well-known retailers because of this issue. Security is a primary problem for e-commerce in developed and developing countries. E-commerce security is protecting

Scanned with OKEN Scanner

extraordinary growth of e-commerce during the lockdown of 2020. Later studies show that online sales increased by 25% and online grocery shopping increased by over 100% during the crisis in the United States. Meanwhile, as many as 29% of surveyed shoppers state that they will never go back to shopping in person again; in the UK, 43% of consumers state that they expect to keep on shopping the same way even after the lockdown is over.

Benefits of E-Commerce to Consumers:

24/7 access, Enables customers to shop or conduct other transactions 24 hours a day, all year round from almost any location. For example, checking balances, making payments, obtaining travel and other information. In one case a explosion star up web camera as in every room in his house, so that he could check the status of his home by classification on to the Internet when he was away from home on tour. More choices. Customers not only have a whole range of products that they can choose from and customize, but also an international selection of suppliers. Price comparisons. Customers can 'shop' around the world and conduct comparisons either directly by visiting different sites, or by a visiting a single site where prices are aggregated from a number of providers and compared Improved delivery processes. This can range from the immediate delivery of digitized or electronic goods such as software or audio-visual files by downloading via the Internet, to the on-line tracking of the progress of packages being delivered by mail or courier. An environment of competition where substantial discounts can be found or value added, as different retailers vie for customers. It also allows many individual customers to aggregate their orders together into a single order presented to wholesalers or manufactures and obtain a more spirited price.

Benefits of E-Commerce to Society:

Enables more flexible working practices, which enhances the quality of life for a whole host of people in society, enabling them to work from home. Not only in this more convenient and provides happier and less stressful working environments, it also potentially reduces environmental pollution as fewer people have to travel to work regularly. Connects people. Enables people in developing countries and rural areas to enjoy and access products, services, information and other people which otherwise would not be so easily available them. Facilities delivery of public services. filling taxes over the Internet through the Inland Revenue website.

Conclusion:

E-commerce still represents one of the business methods that take advantage if done the right way, even if the stock market and commodities fell, but E-Commerce still able to survive and receive high transaction. E-commerce has a tremendous opportunity in the course of or business in Malaysia. In addition, it is also to introducing new techniques and styles in a transaction. Use the extensive E-Commerce in the Internet world is actually much better to bring the goodness of the individual or the state. E-Commerce has undeniably become an important part of our society. The successful companies of the future will be

Scanned with OKEN Scanner

those that take E-Commerce seriously, dedicating sufficient resources to its development. E-Commerce is not an IT issue but a whole business undertaking. Companies that use it as a reason for completely re-designing their business processes are likely to reap the greatest benefits. Moreover, E-Commerce is a helpful technology that gives the consumer access to business and companies all over the world. There is no one commonly agreed definition of e-commerce or e-business. Thus, there is a need to clarify terms being used and explain the context in which they are being applied. E-commerce has an impact on three major stakeholders, namely society, organizations and customers (or consumers). There are a number of advantages, which include cost savings, increased efficiency, customization and global marketplaces. There are also limitations arising from e-commerce which apply to each of the stakeholders. These include information overload, reliability and security issues, cost of access, social divisions and difficulties in policing the Internet. Successful e-commerce involves understanding the limitations and minimizing the negative impact while at the same time maximizing the benefits.

References:

1. The Shorter Oxford English Dictionary, Vol. I, p. 256. Book Club Associates, 1983.
2. www.ibm.com/e-business (accessed September 2000)
3. www.whatis.com/ecommerce (accessed September 2000)
4. http://www.mhhe.com/business/mis/zwass/ecpaper.html.(accessed May 2001).
5. Walid Mougayar 'E-commerce? E-business? Who E-cares? 'COMPUTERWORLD, 2 November 1998; http://www.cybermanagement.com/cw7.htm (accessed September 2001).
6. R. Kalakota and A.B. Whinston, Frontiers of Electronics Commerce, Addison-Wesley, 1996.
7. DTI Report –Government's Expenditure Plans for 2001-2002 (March 2001) Chapter 1- 'Delivering Better Public Services' (Figure 1.2): http://www.dti.gov.uk/expenditureplan/expenditure2001/intro_chap1/chap1/section3.htm (accessed December 2001).
8. Deification of peer-to-peer networking: www.whatis.com (accessed December 2001).
9. 'A study of on-line retailing 2000- Forrester Research': www.forrester.com (accessed March 2000)

Scanned with OKEN Scanner

Shikshan Prasarak Sanstha's

Sangamner Nagarpalika Arts, D. J. Malpani Commerce and B. N. Sarda Science College (Autonomous), Sangamner, 422605

NAAC 3rd Cycle A+ Grade (CGPA 3.58), BEST COLLEGE AWARD by SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

Department of Economics and Research Centre

National Conference on

Recent Trends in Economics, Commerce, Management, Banking, Finance & Insurance

CERTIFICAT

This is to certify that **Mr. Gopal Santu Layare** of Maratha Vidya Prasarak Samaj's K. P. G. Arts& Commerce and Science College& Igatpuri& Nashik. has actively participated in 'One Day National Conference on Recent Trends in Economics, Commerce, Management, Banking, Finance & Insurance' organized by **Department of Economics and Research Centre**, Sangamner Nagarpalika Arts, D. J. Malpani Commerce and B. N. Sarda Science College (Autonomous), Sangamner on 19th January 2025. He / She has presented paper entitled **E-Commerce**

Prof. (Dr) Gorakshanath Sanap
Head of Department of Economics

Prof. (Dr) Arun H. Gaikwad
Principal

Scanned with OKEN Scanner

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 8.141
Peer Reviewed Bi-Monthly
Vol.6 No.37 Mar-Apr- 2025

Impact of Scientific Survey to Awareness of Solar Energy in Rural Area

Gorakh W. Gangurde
Assistant Professor, Department of Physics,
MVP Samaj's Karmveer Punjababa Govardhane Arts Commerce and Science College,
Igatpuri, Dist-Nashik
Corresponding Author: Gorakh W. Gangurde
Email: gangurdegorakh95@gmail.com
DOI-10.5281/zenodo.15687984

Abstract:

A survey in Maharashtra found that there is a lack of awareness and understanding of renewable energy sources. This paper presents the scientific survey on public awareness of renewable energy sources help identify factors that influence people's willingness to use renewable energy. Help to combat climate change and preserve the environment. Renewable energy sources play an essential part in counteracting climate change, which continues to threaten our eco-systems. Fossil fuels remain the biggest contributors to climate change and environmental degradation. Scientific survey significantly impacts renewable energy awareness by providing data-driven insight into public knowledge, attitude and perceptions, informing policy development and educational initiatives. The scientific survey can also help identify how to best reach people with information about renewable energy. Public awareness of renewable energy is important because it can help people make decisions that support the transition to a low-carbon economy.

Keyword: Scientific Survey, Solar Energy, Renewable energy, Wind Energy, Biomass Energy etc.

Introduction:

Solar energy is the natural source of energy from solar power absorbed from sun through solar panel. It is renewable form of energy on the planet Earth and a readily available form of energy. Since ancient days people have been using solar energy. These surveys help identify knowledge gaps, understand motivations for adopting renewable energy and gauge support for related policies.

A survey in India found that there is a general lack of education and understanding about renewable energy. This report presents the finding of a survey conducted to assess the awareness and understanding of Renewable Energy Sources among residents. The objectives is to evaluate the level of knowledge regarding renewable energy options, their benefits and challenges, as well as to identify potential areas for educational outreach and community engagement.

In addition to surveys, other ways to increase awareness of renewable energy include: Teaching young people about renewable energy, encouraging investment in renewable energy technologies and Promoting policies that support renewable energy. A scientific survey is a research method that uses a structured process to gather data from a target audience. The data can be used to support ore refute a hypothesis.

Objectives:

1. To measure the awareness of various non-conventional energy sources among villagers
2. To identify misconceptions or gaps in knowledge regarding renewable energy
3. To recommend strategies for improving awareness and education about renewable energy
4. To demonstrate the solar equipment in the presence of villagers

Methodology:

The scientific survey was conducted through structured questionnaires distributed to a sample of residents from both rural area and urban areas. The questionnaire included multiple choice questions, open ended questions to gather quantitative and qualitative data on their knowledge and perceptions of renewable energy sources.

India is actively developing several renewable energy sources, including solar, wind, hydropower, biomass, geothermal and tidal energy to reduce its reliance on fossil fuel and meet growing energy demands. Renewable do not emit greenhouse gases in energy generation process, making them the cleanest, most viable solution to prevent environments degradation.Generating energy of that produces no greenhouse gas emission from fossil fuels and reduces some types of air pollution. Diversifying energy supply and reducing dependence on imported fuels. Creating economic development and jobs inn manufacturing, installations and more.

According to first of its kind survey conducted by Mercom Capital group titled 'India Renewable Energy Awareness Survey,' only 56% of Indian consumers have heard of 'Renewable Energy' or 'Clean Energy' and 27% of consumers have heard of 'Energy Efficiency'.

In Maharashtra, most respondents preferred to install their own renewable energy systems rather than buying electricity from grid. Only 16% of respondents agreed to pay a premium for renewable electricity energy from grid. Many respondents expressed an interest in adopting renewable energy, with 25% showing a strong desire.

Following point look at the impact:

- Measuring Public Awareness: Survey help quantify how many people are aware of Solar as well as renewable energy sources and their benefits, such as solar, wind and hydropower.
- Understanding Attitudes and Perceptions: Survey reveal public opinions on renewable energy, including their support for development, their willingness to adopt it, and their understanding of associated costs and benefits.
- Identifying Knowledge Gaps: Survey pinpoint areas where the public nesses more information, such as the technical aspects of renewable energy technologies or the impact of renewable energy policies.
- Informing Policy Development: Survey findings provide valuable data of policymakers, helping them understand public sentiment and develop policies that are more likely to be accepted and supported.
- Guiding Educational Initiatives: Survey can inform the design of educational programs and materials that effectively address knowledge gaps and promote a positive understanding of renewable energy.
- Assessing the Success of Renewable Energy Project: Survey can be used to track changes in public awareness and attitudes following the implementation of renewable energy projects.
- Understanding Social Acceptance: Surveys help identify potential social obstacles to renewable energy adoption, such as concerns about aesthetics or environment impact.
- Measuring the Impact of Renewable Energy Policies: Surveys can be used to assess the effectiveness of government policies aimed at promoting renewable energy adoption.
- Facilitation Public Engagement: Surveys can be used to encourage public participation in renewable energy initiatives, empowering individuals to contribute to the transition to a sustainable energy future.

Some looks at the scientific findings during the surveys:

Negative Impacts:

- Autoimmune Diseases: Some research indicates that individuals born with higher solar energy exposure may have a higher prevalences of certain autoimmune condition like multiple sclerosis.
- Skin Cancer and Aging: Long-term exposure to UV radiation from the sun can increase the risk of skin cancer and accelerate skin aging.
- Lifespan: studies suggest that higher solar radiation at birth may be associated with a shorter average lifespan.

Positive Impacts:

- Vitamin D Production: Sunlight is essential for our bodies to produce vitamin D, which is crucial for immune function, bone health and the prevention of various diseases.
- Improved Public Heath: Transitioning to solar energy reduces air pollution and greenhouse gas emissions, leading to improved public health outcomes, especially in cities that are heavily reliant on fossil fuels.
- Environmental Benefits: Solar energy is a clean and renewable energy sources that helps reduce our reliance on fossil fuels and mitigate climate change.
- Economic Benefits: Solar energy can create jobs, stimulate local economies, and reduce energy costs for consumers and businesses.

Overall, scientific survey on solar energy highlight both the potential benefits and drawbacks of solar exposure and the wider environmental and societal impact of its adoption.

Importance of surveys:

- **Understand Public Attitudes**: surveys help identify how people perceive and experience renewable energy development and policy.
- **Identify Preferences**: Surveys can help identify which renewable energy sources people prefer, such as solar, wind or hydropower.
- **Identify factors that influence attitudes**: survey can help identify factors that influence people's willingness to use renewable energy, such that education level and environmental consciousness.
- **Monitor Trends**: survey can help monitor changes in public attitudes over time.

Understanding Public Perceptions:

- **Public Participation**: Surveys can help to understand how people perceive and experience renewable energy development and policy.
- **Policy Making**: Surveys can help to inform decision making and governance within the energy system.
- **Social Settings**: survey can help to ensure that energy solutions are rooted in specific social setting.

Renewable Energy and Conservation:

- **Wildlife Conservation**: Renewable energy projects can have conservation concerns, and careful planning can help to reduce risks to biodiversity.
- **Climate Change**: Renewable energy is key to the solution to climate change, which is having adverse effect on many species.
- **Transition to Low-Carbon Solution**: Research that combines social sciences and humanities with technological breakthroughs can help with transition to low-carbon solution.

The Indian government has implemented initiatives like National Solar Mission to promote solar energy development. Solar energy is used for electricity generation, heating and cooling and increasingly used in both large-scale power plants and rooftop solar system.

Recommendations:

1) **Community Workshops**: organize workshops in both villagers to educate residents about the benefits and workings of renewable energy sources. This session could include demonstration on solar panel installations and biomass utilization.
2) **School Programs**: Implement educational programs in local schools to tech children about renewable energy, fostering a culture of sustainability from young age.
3) **Information Campaigns**: develop informational materials that outline the advantages of using renewable energy sources, addressing common misconceptions about their reliability and efficiency.
4) **Partnerships with NGOs**: Collaborate with non-governmental organizations focused on renewable energy to facilitate training sessions and provide resources for implementing renewable technologies in homes.

Conclusion:

The results of this study could contribute to our understanding of the growing body of material about increasing awareness of and attitudes towards renewable energy usage and other developing nations to boost environmental and socio-economic progress. This study investigates and assess environmental public awareness of solar energy by collecting and analyzing data on the awareness of survey respondents of renewable energy, in addition to their intention to adopt it. Scientific survey can help with renewable energy conservation by understanding public perceptions and preferences, and by improving the efficiency of energy system. There is recognition of solar energy, misconceptions about reliability and benefits of renewable resources persist. By enhancing educational initiatives and providing practical information about renewable energy technologies, the community can be better equipped to transition towards sustainable energy practices, ultimately contributing to environmental conservation and economic development.

Scientific survey on renewable energy sources are important to help understand public attitudes and preferences. This information can help policymakers and businesses develop policies and programs that encourage the use of renewable energy. Solar energy is commonly used for solar water heaters and house heating. The heat from solar ponds enables the production of chemicals, food, textiles, warm greenhouses, swimming pools and livestock buildings. Cooking and providing a power source for electronic devices can also be achieved by using solarener

References:

1. Easwaran P[1] and J Sudarvel[2], "*A Study on impact of demography factor on consumer awareness on solar energy product*" E3S Web of Conference, Research Article.
2. Johannes Urpelainen and Semee Yoon, "*Solar home system for rural India: Survey evidence on awareness and willingness to pay from Uttar Pradesh*" ELSEVIER Energy for Sustainable Development Volume-24, February 20215
3. S. Rose Mina, Makula M. Mwilija, Fredrick P. Kalabo, Brayzack J. Kaaya, Mr. Salimu R. Gongoma, Makoye M. John, "*A Survey on the Assessment of Public Perception of Solar Energy as an Alternative Energy Source in Dar ES Salaam Tanzania*" IJRASET, 27 Aug 2023
4. Vinay Kumar Tatikayala, Shishir Dixit, "*Comprehensive survey on the impact of renewable energy sources in power system operation and control*" Research article.
5. Jozsef Kadar, Martina Pillona and Tareq Abu Hamed, "*A Survey of Renewable Energy, Climate Change and Policy Awareness in Israel: The Long Path for Citizen Participation in the National Renewable Energy Transition*", Research Article.
6. Tze-Zhang Ang, Mohamed Salen, Mohamad Kamarol, Himadry Shekhar Das, Mohammad Alhuyi Nazari, Natarajan Prabaharan, "*A comprehensive study of renewable energy sources: Classifications, challenges and suggestions*" Research Article.
7. Erdal Irmak, Melike Selcen Ayaz, Sudan Gokce Gok, Almula Busra Sahin, "*A Survey on Public Awareness Towards Renewable Energy in Turkey*", Research Article.
8. Mainak Mukherjee, Amit Kumar Sharma, "*Survey-based assessment for strategic development of renewable energy resources for selected places in India: enabling advances in framework responsibility*", Published online 21 Jan 2024.
9. Filippos Ioannidis, Kyriaki Kosmidou Dimitra Papanastasiou, "*Public Awareness of renewable energy sources and circular economy in Greece*" Volume 206, April 2023

10. Syed A. Malik and Abdul Rahman Ayop, "Solar energy technology: Knowledge, awareness, and acceptance of B40 households in one district of Malaysia towards government initiatives" LSEVIER Technology in Society, Volume 63, November 2020.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 8.141
Peer Reviewed Bi-Monthly
Vol.6 No.25(B) Mar-Apr- 2025

Comprehensive Study of Energy Management of College in Tribal Area of Igatpuri Tahsil

Gorakh W. Gangurde
Asst. Professor,Department of Physics,
MVP Samaj's Karmveer Punjababa Govardhane Arts Commerce and Science College,
Igatpuri, Dist-Nashik, Maharashtra, India
Corresponding Author: Gorakh W. Gangurde
Email: gangurdegorakh95@gmail.com
DOI-10.5281/zenodo.15314415

Abstract:-

The energy audit is a study of facility to determine how and where energy is used and to identify methods for energy saving. The objectives of energy audit is to balance the total energy inputs with its use and to identify the energy conservation opportunity in the stream. Energy audit also gives focused attention to energy cost and cost involved in achieving higher performance with technical and financial analysis. The best alternative is selected on financial analysis basis.

Data collection for energy audit of the MVP Samaj's K. P. G. Arts Commerce and Science College, Igatpuri, Nashik was conceded by EA team. All data collected from each classroom, Laboratory, Library and Office etc. The work is completed by considering how many tubes, fans, ACs, Electronic instruments etc, in each room.

Keywords: Energy audit, Energy consumption, Energy management, Energy conservation.

Introduction:

A comprehensive audit provides a detailed energy project implementation plan for a facility, since it evaluates all major energy using systems. This type of energy offers the most accurate estimate of energy saving and cost. It considers the interactive effects of all projects, account for the energy use of all major equipment, and included energy cost saving calculations. In comprehensive audit, one of the key of the energy balance.

In 2001 the College is shifted in campus of 8.5 acre piece of land in the vicinity of scenic mountain of Sahyadri beside national Highway NH-3 about six kilometers from Igatpuri town. The college basically aims at providing all the amenities infrastructure and quality education to the rural and tribal students.

Energy Audit objectives:-

K. P. G. Arts Commerce and Science College Igatpuri building entrusted the work of conducting a detailed Energy Audit of campus with the main objectives given bellow:

1. To study the presence pattern of energy consumption
2. To identify potential area for energy optimization
3. To recommend energy conservation proposals with cost benefits analysis

We focused our attention on energy management and optimization of energy efficiency of the system, sub systems and equipment's.

The objective of Energy Audit is to balance the total energy inputs with its use and to identify the energy conservation opportunities in the stream. Energy Audit also gives focused attention to energy cost and cost involved in achieving higher performance with technical and financial analysis.

Methodology:-

Scope of work and methodology were as per the proposal. While undertaking data collection, field trials and their analysis, due care was always taken to avoid abnormal situations so as to generate presentative pattern of energy consumption at the facility.

Energy Audit study is divided into following steps:

1. **Historical data analysis:**
   The historical data analysis involves establishment of energy consumption pattern to be established base line data on energy consumption and its variation with change in production volumes.
2. **Actual measurement and data analysis:**
   This step involves actual site measurement and field trials using various portable measurement instruments. It also involves input to output analysis to establish actual operating equipment efficiency and finding out losses in the system.
3. **Identification and evaluation of Energy Conservation Opportunities:**
   This step involves evaluation of energy conservation opportunities identified during the energy audit. It gives potential of energy saving

and investment required to implement the proposed modifications with payback period.

Percentage of Annual Power requirements met through LED

Types	Total Watts
LED Lights Connected load	4900
CFL Bulb Connected load	100
Total Lighting Load	5000

Observation: Percentage of Annual Power requirements met through LED Bulb/Tube current year data is **98**%.

Percentage of annual Power requirements met through Renewable Energy

Average Renewable Energy units generated	11200	KWH
Nonrenewable Energy (Mahavitaran) imported	6758	KWH
Annual Power requirement	17958	KWH

Observation: Percentage of Annual Power requirements met through Renewable Energy Sources current year data is **62**%.

Energy Performance Index (EPI):-

Electrical Energy received to K. P. G. Arts Commerce and Science College from MSEDCL (Maharashtra State Electricity Distribution Company Limited).

The Specific Energy Consumption is the ratio of energy required per square meter.

Total Electricity Consumption = Import 6758 KWh/Year + Diesel Generator 250 KWh/Year
= 7008 KWh/Year

Total Build-up Area = 3461.81 Squar Meter

In this case the Specific Energy Consumption is evaluated as electrical units consumed per square meter of area.

Observations: EPI calculated as under (for Electricity): 2.02 KWh/Sq. Meter

Study of Electrical Systems:-

Electrical Energy Sources:

The electrical supply to the Institute comes from MSEDCL LT supply.

Solar Power Plant Capacity = 15 KWp

Diesel Generator = 30 kVA

Energy Meter Details:

Sr. No.	Details of Electricity Demand	Tariff	36 LT-V B II
1	Sanctioned Load	19	KW

Summary of Energy Bill for 12 Months

Tariff /Category: 73 LT-VII B 1 DTC 4271106 GIS Contract Demand (KVA): 19

Connected load (kW): 19.70 Sanctioned Load (KW): 19.70 KW

Sr. No.	Month & Year	Units KWh	Electricity Bill (in Rs.)
01	April 2023	0	422
02	May 2023	0	422
03	June 2023	170	2003.75
04	July 2023	1383	12657.65
05	August 2023	1194	10997.64
06	September 2023	1261	11814.98
07	October 2023	934	8883.56
08	November 2023	390	4077.60
09	December 2023	248	2778.35
10	January 2024	198	2000.26
11	February 2024	122	1626.44
12	March 2024	858	8357.97
	Total	**6758**	**66042.2**

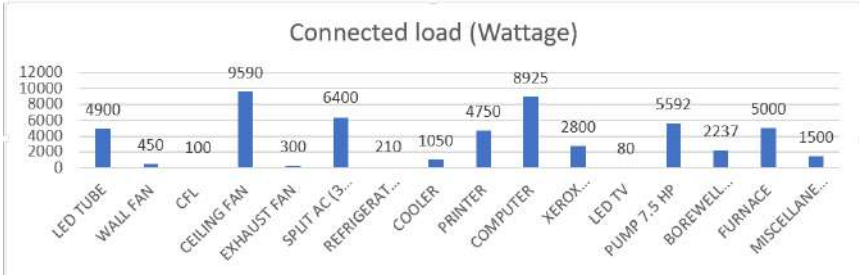
Connected Load Details:

Major Energy use and Areas: In the college campus electrical energy is used for various applications like Computers, Xerox Machines, LCD Projector, Router System, Lighting, Fans, Flood Light, Pumping Motor, Air-Conditioning and Other Laboratory Equipment's etc.

Sr. No.	Name of Appliances	Quantity	Watt	Total Watt
1	LED Tube	245	20	4900
2	Wall Fan	8	50	450
3	CFL	5	20	100
4	Ceiling Fan	137	70	9590
5	Exhaust Fan	6	50	300
6	Split AC (3 Star) 1.5 T	4	1600	6400

7	Refrigerator	1	210	210
8	Cooler	3	350	1050
9	Printer	19	250	4750
10	Computer	51	175	8925
11	Xerox Machine	2	1400	2800
12	LED TV	1	80	80
13	Pump 7.5 HP	1	5592	5592
14	Borewell 3.5 HP	1	2237	2237
15	Furnace	1	5000	5000
16	Miscellaneous Load/ Lab Instruments		1500	1500
			Total	53884

Graphical View



Ceiling fan system contributes highest load i.e. **9590** watts.

Fan system:

Total number of fans used in the college = 137

Consider at 200 days working 8 hrs.

- Number of fans to be replace = 137
- The total current consumption = 15300 kWh
- The expected fan consumption = 6150 kWh
- Expected saving per year = 9150 kWh/year

Improve Power quality Supply

Power quality issues can be affect the operation of critical load and can have the negative impact on operation. This power quality analyzer can monitor the cost of energy wasted due to poor power quality.

Power quality refers to the level of consistency, reliability and stability of electrical power.

Guidelines for Identified Energy Saving Opportunities:

- Use day lighting effectively by locating work station requiring good illuminance near window
- Minimize illuminance in non-task areas by reducing the wattage of lamps or number of fittings
- Avoid use of incandescent/tungsten filament lamps
- Use electronic ballast in place of conventional ballast for fluorescent lamps
- Task lighting saves energy, utilize it whenever possible
- All surface absorb light to degree and lower their reflectance. Light colored surfaces are more efficient and need to be regularity painted or wasted in order to ensure economical use of light
- Maintenance is very important factor. Evaluate present lighting maintenance program and revise it as necessary to provide the most efficient use of lighting system
- Clean luminaries, ceilings, walls, lamps etc. on a regular basis
- Controls are very effective for reducing lighting cost. Provide separate controls for large ratings
- Install switching or dimmer controls to provide flexibility when spaces are used for multiple purpose and require different amounts of illuminance for various activities
- Switching arrangements should permit luminaries or rows of luminaries near natural light sources like windows or roof lights to be controlled separately
- Separate lighting feeder and maintain the feeder at permissible voltage by using transformers

Institute has been declared their environment policy:

- To install LED bulbs in the complete campus to save energy
- To operate institute building in most efficient energy manner
- Maximum use of renewable Energy
- To take additional measures to continuously improve our energy consumption
- To encourage use of advanced technology to minimize energy consumption
- To develop and maintain Energy management system based on ISO:50001

- To provide information & training opportunity on energy saving measures

Conclusion:

Energy audit is a powerful tool to achieve interesting energy savings. A total investment of approximately three lakhs and Twenty Eight Thousand rupees (Rs. 3.28/- Lakhs) amount is estimated for the energy efficiency improvement and renewable energy projects.

Energy saving expected around 11650 KWH/year. The result of this energy audit have been used by the college for definition of its energy saving strategy for the next future. An energy audit helps businesses and organizations reduced energy use and save money. It can be also help improve productivity and innovation.

References:

1. Anupama Gupta, Pallavi Verma, Richa Priyadarshan "**A Review on Energy Management and Audit**" International Journal of Advance Research in Electrical, Electronics and Instrumentation Engineering February 2015.
2. Manjunatha Prabhu P, Anusha L, Dhanyashree D N, Rajeenstella D, Sangeetha S, "**Energy Audit**" IJSDR April 2023.
3. Manoj Kumar Lamba, Abhishekh Sanghi "**Energy Audit on Academic Building**" International Journal of Engineering Research and General Science July August 2015.
4. Matteo Dongellini, Cosimo Marinosci, Gian Luca Morini "**Energy Audit of an Industrial site: a case study**" Elsevier ScienceDirect 2014.
5. Ramya L N , M A Femina "**Energy Auditing – A Walk Through Survey**" International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering April 2014.

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR) | IJRAR.ORG

An International Open Access, Peer-reviewed, Refereed Journal

Morphological, Physicochemical, and Extractive properties of *Broussonetia papyrifera* (L.) L'Hér. ex Vent.

D.S.Antapurkar[1], A.A.Naik[2], S.V.Patil[3]and V.B. Kadam[4]

[1]Department of Botany, M.V.P's KPG College, Igatpuri, Nashik- 422402, Maharashtra, India [2]Department of Botany, Savitribai Phule Pune University, Pune – 411007, Maharashtra, India [3]Department of Botany, MJM Arts, Commerce & Science College, Karanjali, Nashik422208, Maharashtra, India

[4]Department of Botany, Arts, Science & Commerce College, Ozar (MIG) Nashik-422206, Maharashtra, India

Abstract

Broussonetia papyrifera, commonly known as paper mulberry, was evaluated for its pharmacognostic properties through macroscopic, organoleptic, physicochemical, and phytochemical analyses. The plant material was collected from the Savitribai Phule Pune University campus and processed for study. Macroscopic and organoleptic evaluations revealed that the leaf powder of B. papyrifera is green in color, has a characteristic odor, and exhibits an astringent taste, indicative of its phytochemical constituents, particularly tannins. Physicochemical analysis, including extractive values, fluorescence analysis, foaming index, and moisture content, was conducted to assess the quality and authenticity of the plant material. Among the different solvents used, methanol exhibited the highest extractive value (1.264%), suggesting a rich presence of bioactive compounds such as alkaloids, flavonoids, tannins, and phenols. Fluorescence analysis further confirmed the presence of diverse phytochemicals through distinct color changes under various lighting conditions. The foaming index was found to be less than 100, indicating low saponin content, while the low moisture content (1.2%) suggested enhanced stability and an extended shelf life of the dried leaves. These findings contribute to the quality assessment and standardization of B. papyrifera, providing a foundation for further research into its pharmacological properties and potential medicinal applications.

Keywords:- Broussonetia , Secondary Metabolites, Alkaloids, Medicinal plants.

Introduction

The paper mulberry, or Broussonetia papyrifera (L.) L'Hér. ex Vent., is a species of deciduous tree belonging to the Moraceae family. In its natural habitat, this species can reach heights of 10–20 meters. Perennial and dioecious, paper mulberry produces male inflorescences that are long, spiky, 3–8 cm, and when fully grown, its female inflorescences are globose, orange-red, and 1.5–3.0 cm in diameter [1,2]. It has benefits for the economy, health, and environment. Its bark fibers can be used to make rope, paper, and clothing [3], and the leaves can be used as animal feed, and the timber can be used to make furniture [4]. The bark, fruit, and leaves are all medicinally useful [5-6]. Numerous phytochemicals, including minerals like calcium, iron, magnesium, potassium, phosphorus, zinc, manganese, copper, lead, and mercury, are found in the plant's fruits. Additionally, it has fatty acids, beta-carotene, vitamins E, B1, B2, B5, B6, C, and amino acids aspartate, threonine, glutamate, glycine, leucine, isoleucine, valine, and tyrosine.[7] The seed has an average protein level of 18.5% and an oil content of 30.1%. Benzofurans, phenylpropanoids, coumarins, and several forms of flavonoids (chalcones, flavans, flavanones, and flavones) are found in the plant's root bark [8-10].

Traditional remedies made from plants have long been used to treat a wide range of illnesses. Phytochemicals are abundant in many of these therapeutic plants, many of which have strong antioxidant properties. Growing naturally in China, Thailand, and the United States, Broussonetia papyrifera is a deciduous tree or shrub. The fruit, bark, roots, and leaves are all utilized in traditional Chinese medicine. Chinese folk medicine has utilized the leaves to treat chronic prostatitis, while pharmacological studies have demonstrated the fruit's effectiveness in treating ocular conditions and impotence [12]. Both industry and scientific research are currently showing a growing interest in beneficial plants that may be identified as a nutrient-dense food or dietary supplement and a significant source of physiologically active chemicals with therapeutic potential [13,14]. The plants' high nutritious content keeps our bodies operating efficiently. Because they guard against free radicals like reactive oxygen species in the human body, dietary antioxidants are crucial [15].

MATERIALS AND METHODS

Plant Collection- The plant materials of *Broussonetia papyrifera* were collected from Savitribai Phule Pune University campus, Pune, Maharashtra, between January and April 2016. The collected plant material was authenticated and identified by the Botanical Survey of India, Western Circle Head Office, Pune, Maharashtra. The leaf samples were thoroughly washed under running tap water to remove any impurities. The cleaned samples were then dried under shade conditions to preserve their phytochemical integrity. Once dried, the leaves were finely powdered using an electric grinder until a uniform texture was obtained. The powdered material was then sieved to achieve consistency and stored in airtight screw-cap bottles for further analysis.

1. Determination of Extractive Values-The extractive values were determined according to the method described in the Indian Pharmacopoeia (Anonymous, 1955).

Procedure:-Accurately 10 g of shade-dried powdered drug was macerated with 100 mL of different solvents (petroleum ether, chloroform, toluene, methanol, acetone, ethanol, diethyl ether) in a closed screw-cap conical flask for 24 hours.The mixture was shaken periodically and then filtered without loss of solvent.

Approximately 20 mL of the filtrate was evaporated to dryness in a porcelain dish at 110°C. The percentage of extractives was calculated based on the weight of the air-dried drug.

2. Fluorescence Analysis-Fluorescence analysis was performed by treating powdered plant material with various chemical reagents and observing the color changes under visible light, shortwave UV light (254 nm), and longwave UV light (365 nm).

Procedure:-A small quantity of powdered plant material was placed on a clean glass slide.1-2 drops of freshly prepared reagents were added (e.g., 50% H_2SO_4, HNO_3, KOH, ethanol, methanol, NaOH, acetone, nitrocellulose).The slide was placed inside a UV chamber, and the color was observed under different lighting conditions.This method aids in detecting adulteration and substitutions and ensures quality control of the plant material.

3. Determination of Foaming Index-The foaming index was determined to assess the presence of saponins, which contribute to persistent foaming in aqueous solutions.

Procedure:-1 g of powdered plant material was boiled with water for 30 minutes, then cooled and filtered.The decoction was poured into 10 test tubes in successive portions (1 mL, 2 mL, etc., up to 10 mL).The foam height was measured to determine the foaming index.

4. Determination of Moisture Content-The moisture content was evaluated to prevent degradation and ensure the stability of the plant material. Low moisture content indicates better shelf life and minimal microbial contamination.

Phytochemical Analysis-The plant material was subjected to qualitative phytochemical analysis to identify bioactive compounds.

Extraction Process:-10 g of powdered plant material was extracted using methanol and water via Soxhlet extraction.The extracts were analyzed for starch, proteins, tannins, phenols, and alkaloids using standard chemical tests.

RESULTS AND DISCUSSION

1) Macroscopic Analysis of *Broussonetia papyrifera* Powder-Macroscopic analysis is an essential qualitative method for the identification of herbal drugs. It provides fundamental information about external characteristics, which help in the identification, authentication, and quality assessment of plant material. Table 1 presents the macroscopic features of *Broussonetia papyrifera* powder.

Table 1: Macroscopic analysis of *Broussonetia papyrifera* powder

Characteristics	**Inference**
Colour	Green
Odour	Characteristics
Taste	Astringent

Detailed Explanation of Macroscopic Characteristics

1. Colour: Green- The green coloration of *Broussonetia papyrifera* powder is due to the presence of chlorophyll and other plant pigments such as flavonoids and carotenoids.The retention of natural green color in the dried powder suggests proper shade drying, preventing excessive degradation of pigments.
2. Odour: Characteristic-This odour is primarily due to the presence of volatile compounds, essential oils, and other phytochemicals present in the leaves. Odour analysis is crucial in detecting spoilage, degradation, or adulteration in herbal drugs. Any rancid, musty, or unpleasant smell could indicate microbial contamination or improper storage.
3. Taste: Astringent-The astringent taste is a result of the presence of tannins and polyphenolic compounds in *Broussonetia papyrifera*.-The presence of tannins suggests potential medicinal properties, such as antioxidant, anti-inflammatory, and antimicrobial activities.

2)Fluorescence Analysis of *Broussonetia papyrifera* Leaf Powder

Fluorescence analysis is an essential qualitative evaluation method used in pharmacognostic studies for the identification and authentication of plant material. This technique helps detect chemical constituents in herbal drugs by exposing them to different reagents and observing their color changes under visible light, shortwave UV (254 nm), and longwave UV (365 nm). Certain plant constituents exhibit natural fluorescence, while others may fluoresce when treated with chemical reagents. This property is useful in detecting adulteration and ensuring consistency in herbal preparations.

Table 2: Fluorescence analysis of leaf powder of *Broussonetia papyrifera*

Reagent	White light	UV short (254nm)	UV long (365nm)
50% H2SO4	Green	Violet	Dark brown
50%HNO_3	Maroon	Dark green	Violet
5%KOH	Dark green	Green	Black
95%ethnol	Green	Black	Lime green
Methanol	Moss green	Nevy blue	Violet
1NaCl	Green	Green	Black
1N NaOH	Green	Dark green	Violet
Acetone	Yellowish green	Dark green	Yellow
0.1N ethanolicNaOH	Algae green	Dark green	Grey
0.1N methanolic NaOH	Dark green	Dark green	Yellowish red
Nitrocellulose	Dark green	Yellow	Green
Nitrocellulose+NaoH	Dark green	Yellowish green	Orange
1N NaOH+Methanol	Green	Green	Violet
0.5N methanolicNaoH	Yellowish green	Yellow	Yellow

Detailed Explanation of Fluorescence Analysis

1. Effect of Acids (H_2SO_4 and HNO_3)-50% H_2SO_4 (Sulfuric Acid)

Green color in visible light due to plant pigments.Violet fluorescence under shortwave UV (254 nm) suggests the presence of flavonoids, alkaloids, or phenolic compounds.Dark brown color under longwave UV (365 nm) indicates oxidation of tannins or other polyphenolic compounds.

2. Effect of Alkaline Reagents (NaOH, KOH)-5% KOH (Potassium Hydroxide)

Dark green in visible light, indicating the presence of chlorophyll derivatives.Green under UV 254 nm suggests interaction with flavonoids or alkaloids.Black under UV 365 nm, possibly due to polyphenol oxidation.

1N NaOH (Sodium Hydroxide)

Green in visible light, confirming the presence of chlorophyll and phenolic compounds.Dark green under UV 254 nm, indicating flavonoid oxidation.Violet under UV 365 nm, a sign of complex phenolic compounds reacting to UV exposure.

3. Effect of Organic Solvents (Ethanol, Methanol, Acetone)-95% Ethanol

Green in visible light due to chlorophyll.Black under UV 254 nm, indicating quenching effects on some compounds.Lime green under UV 365 nm, suggesting the presence of certain terpenoids or flavonoids.

Methanol-Moss green in visible light due to flavonoids and pigments.Navy blue under UV 254 nm, possibly due to anthocyanins or xanthones.Violet under UV 365 nm, confirming phenolic compounds.

Acetone-Yellowish green in visible light, suggesting the presence of carotenoids.Dark green under UV 254 nm, likely due to the formation of new derivatives.Yellow under UV 365 nm, possibly due to flavones or coumarins.

4. Effect of Nitrocellulose Treatment-Nitrocellulose alone

Dark green in visible light due to chlorophyll binding with nitrocellulose.Yellow under UV 254 nm, indicating interaction with alkaloids or glycosides.Green under UV 365 nm, showing the presence of terpenes or steroids.

Nitrocellulose + NaOH

Dark green in visible light.Yellowish green under UV 254 nm, possibly due to the formation of alkaline complexes.Orange under UV 365 nm, suggesting the presence of quinones, flavonoids, or phenolics.

5. Effect of Combined Alkaline Solvents-1N NaOH + Methanol

Green in visible light, indicating chlorophyll stability.Green under UV 254 nm, suggesting flavonoid stability.Violet under UV 365 nm, likely due to phenolic oxidation.

0.5N Methanolic NaOH-Yellowish green in visible light, indicating terpenoid or flavonoid presence.Yellow under UV 254 nm and 365 nm, suggesting the presence of xanthones or flavonoids.

3)Physiochemical Parameters of *Broussonetia papyrifera* Leaf Powder-Physiochemical parameters help in evaluating the quality, purity, and stability of herbal raw materials. These parameters are crucial for standardization and quality control of herbal drugs.

Table 3: Physiochemical parameters

Parameters	**%**
Foaming index	Less than 100
Moisture content	**1.2**

1.Foaming Index (<100)-The foaming index is used to determine the presence of saponins in a plant material. Saponins are natural surfactants that can cause persistent foam when shaken with water.

Interpretation:- A foaming index less than 100 means the plant contains low or negligible levels of saponins. This suggests that *Broussonetia papyrifera* is not a rich source of saponins, making it less likely to exhibit foaming properties in liquid formulations. The plant might have other bioactive compounds (e.g., flavonoids, alkaloids, or tannins) rather than saponins.

2. Moisture Content (1.2%)

Moisture content is an essential stability parameter in herbal material. High moisture content can lead to:- Microbial growth (bacteria, fungi, molds). Degradation of bioactive compounds. Loss of potency in stored herbal drugs.

Interpretation: -The moisture content of 1.2% is very low, which is ideal for long-term storage. It suggests that the sample is well-dried, reducing the risk of fungal contamination or chemical degradation. A moisture content below 5% is generally considered acceptable in herbal raw materials.

4)Observation of Extractive Value of *Broussonetia papyrifera* Powder

Extractive value is an important parameter in the evaluation of herbal drugs. It represents the amount of bioactive compounds soluble in different solvents and provides an idea about the nature of the phytoconstituents present in the plant.

Table no. 4: Observation of extractive value of powder of*Broussonetia papyrifera*

Solvent	Solvent Extractive value
Ethanol	1.023%
Methanol	1.264%
Chloroform	0.586%
Acetone	0.435%
Toluene	0.695%
Petroleum ether	0.437%
Diethyl ether	0.320%

Interpretation of Extractive Values

1. Methanol Shows the Highest Extractive Value (1.264%)
    - This suggests that polar compounds like alkaloids, flavonoids, tannins, and phenols are present in higher amounts in *Broussonetia papyrifera*.
    - Methanol is a polar solvent, which efficiently extracts water-soluble phytochemicals such as polyphenols, tannins, and glycosides.
    - The high extractive value indicates that the plant contains bioactive compounds with potential pharmacological properties (e.g., antioxidants and anti-inflammatory agents).
2. Ethanol Extracts a Moderate Amount (1.023%)
    - Ethanol is also a polar solvent, but slightly less polar than methanol.
    - It extracts a mixture of polar and non-polar compounds, including flavonoids, alkaloids, tannins, and essential oils.
    - The extractive value suggests that *Broussonetia papyrifera* contains both water-soluble and alcohol-soluble phytochemicals.

3. Lower Extractive Values in Non-Polar Solvents (Chloroform, Acetone, Petroleum Ether, Diethyl Ether)
    - Chloroform (0.586%) and Acetone (0.435%) extract some moderately non-polar compounds like terpenoids, steroids, and certain alkaloids.
    - Toluene (0.695%) shows a higher extractive value than chloroform and acetone, indicating the presence of semi-polar compounds like flavonoids and some essential oils.
    - Petroleum ether (0.437%) and Diethyl ether (0.320%) show the lowest extractive values, indicating that the plant contains very few non-polar lipophilic compounds like fats, waxes, and volatile oils.

Conclusion

1. Macroscopic Analysis: The macroscopic evaluation of *Broussonetia papyrifera* leaf powder was successfully conducted using collected plant material. The observed distinct morphological characteristics confirm its identity and authenticity, which is crucial for standardization and quality control.
2. Fluorescence Analysis: The powdered leaf sample exhibited different color shades under white light, UV short (254 nm), and UV long (365 nm), indicating the presence of various phytochemicals. Fluorescence analysis serves as an effective tool for identifying plant material and detecting adulterants.
3. Foaming Index: The foaming index was found to be less than 100, suggesting low levels of saponins in the plant. This indicates that *Broussonetia papyrifera* does not produce excessive foam, making it suitable for pharmaceutical and herbal formulations without foaming issues.
4. Moisture Content: The moisture content of 1.2% in the shade-dried leaf powder confirms that the material is well-dried and stable, minimizing the risk of microbial growth and degradation of bioactive compounds.
5. Extractive Values: The highest extractive value was observed in the methanol extract, indicating that methanol is the most effective solvent for extracting bioactive compounds such as flavonoids, phenols, alkaloids, and tannins. This highlights the importance of solvent selection for herbal extraction and medicinal applications.

Final Remarks

This study provides valuable insights into the morphological, physicochemical, and extractive properties of *Broussonetia papyrifera* leaf powder. The findings are useful for quality assessment, pharmacognostic evaluation, and future research on its medicinal applications.

REFERENCES

1. Fu, L.G.; Xin, Y.Q.; Whittemore, A. Moraceae. In Flora of China; Wu, Z.Y., Raven, P.H., Eds.; Science Press: Beijing, China, 2003; Volume 5, pp. 1–19.

2. Chen, Z.H.; Sun, M.J. Color Illustrations of Common Xylophyta in Zhejiang Province; Zhejiang University Press: Hangzhou, China, 2015.

3. Li, Meiru, Yan Li, Hongqing Li, and Guojiang Wu. "Overexpression of AtNHX5 improves tolerance to both salt and drought stress in Broussonetia papyrifera (L.) Vent." *Tree physiology* 31, no. 3 (2011): 349-357.

4. Seelenfreund, D., A. C. Clarke, N. Oyanedel, R. Piña, S. Lobos, E. A. Matisoo-Smith, and A. Seelenfreund. "Paper mulberry (Broussonetia papyrifera) as a commensal model for human mobility in Oceania: anthropological, botanical and genetic considerations." *New Zealand Journal of Botany* 48, no. 3-4 (2011): 231-247.

5. PREHISTORY, AN ESSAY ON TAPA. "ETHNOBOTANY, AND THE ORIGINS OF BROUSSONETIA PAPYRIFERA." (1996).

6. Wang, Meiquan, and Qingwei Guan. "Prediction of potential suitable areas for Broussonetia papyrifera in China using the MaxEnt model and CIMP6 data." *Journal of Plant Ecology* 16, no. 4 (2023): rtad006.
7. Xiao, Xuan, Zhi-Cheng Wu, and Kuo-Chen Chou. "A multi-label classifier for predicting the subcellular localization of gram-negative bacterial proteins with both single and multiple sites." *PloS one* 6, no. 6 (2011): e20592.
8. Lee, Dongho, Krishna PL Bhat, Harry HS Fong, Norman R. Farnsworth, John M. Pezzuto, and A. Douglas Kinghorn. "Aromatase Inhibitors from Broussonetia p apyrifera." *Journal of natural products* 64, no. 10 (2001): 1286-1293.
9. Chen, Rong Min, Li Hong Hu, Tian Ying An, Jia Li, and Qiang Shen. "Natural PTP1B inhibitors from Broussonetia papyrifera." *Bioorganic & medicinal chemistry letters* 12, no. 23 (2002): 3387-3390.
10. Ko, Horng-Huey, Sheu-Meei Yu, Feng-Nien Ko, Che-Ming Teng, and Chun-Nan Lin. "Bioactive constituents of Morus australis and Broussonetia papyrifera." *Journal of Natural Products* 60, no. 10 (1997): 1008-1011.
11. Parker, V. Thomas, and Michael C. Vasey. "Two New Subspecies of Arctostaphylos (Ericaceae) From California and Implications for Understanding Diversification in This Genus." *Madroño* 63, no. 3 (2016): 283-291.
12. Lee, Dongho, Krishna PL Bhat, Harry HS Fong, Norman R. Farnsworth, John M. Pezzuto, and A. Douglas Kinghorn. "Aromatase Inhibitors from Broussonetia p apyrifera." *Journal of natural products* 64, no. 10 (2001): 1286-1293.
13. El-Adawy, Tarek A., and Khaled M. Taha. "Characteristics and composition of different seed oils and flours." *Food chemistry* 74, no. 1 (2001): 47-54.
14. Ezeagu, I. E., Sridevi Sridevi, P. Haridas Rao, Harandranath Harandranath, AG Appu Rao, L. R. Gowda, and G. Tarawali. "Prospects for incorporation of defatted Mucuna flour in biscuits formulation." (2002): 435-438.
15. Dini, Irene, Gian Carlo Tenore, and Antonio Dini. "Chemical composition, nutritional value and antioxidant properties of Allium caepa L. Var. tropeana (red onion) seeds." *Food chemistry* 107, no. 2 (2008): 613-621.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 8.141
Peer Reviewed Bi-Monthly
Vol.5 No.44 Nov-Dec 2024

Hydrological Assessment and Water Quality Analysis of the Godavari River in Nashik City (Maharashtra)

Mr. Chourasiya Kanhaiya Keshav
Assistant Professor, Department of Zoology,
MVP Samj's, K.P.G. Art's, Commerce and Science College, Igatpuri, Dist- Nashik, Maharashtra
Corresponding Author: Mr. Chourasiya Kanhaiya Keshav
Email: kkchourasiya74@gmail.com
DOI- 10.5281/zenodo.14685703

Abstract:

The Godavari River is often called the lifeline of Nashik; it is rich in hydrological, ecological, and cultural value. This research paper would discuss the hydrological features and water quality of the Godavari River in Nashik, as a city is deeply interlinked with the heritage and utility of the river. The paper studies the seasonality variations in flow pattern and critical water quality parameters such as pH, DO, BOD, and pollutant level. Among the causes, urbanization, industrialization, and anthropogenic pressures are cited to be the key factors degrading the river's health.

This study is based on a comprehensive methodological framework that includes field measurements, laboratory analysis, and historical data to assess hydrological dynamics and water quality indices. Results show significant seasonal fluctuations, with monsoon periods diluting pollutants and non-monsoon seasons exacerbating contamination. The analysis identifies critical pollution hotspots, such as industrial zones and urban discharge points, where pollutant concentrations often exceed permissible limits. Elevated levels of heavy metals, including lead and cadmium, are particularly alarming, posing risks to aquatic ecosystems and human health.

Its socio-economic features also make a strong argument for taking action. For irrigational purposes, agricultural populations can no longer afford poor-quality water with decreased efficiency in water conveyance and reduced agricultural produce. A large number of such river-users live in areas where health diseases are water-borne from untreated river water intake, and cultural and religious sensitivities are affected through polluting the sanctity of the river at places such as Kumbh Mela.

Data visualization is very important in this study, and graphs and tables illustrate key trends and correlations. Seasonal flow data and pollutant levels are presented with hydrological assessments, thus providing a clear picture of the challenges that the Godavari River faces. The findings therefore point to the need for implementing sustainable water management practices, pollution control measures, and community engagement strategies.

This study provides policy, research, and stakeholder guidance on how to revive and conserve the Godavari River. It promotes holistic river basin management practices that are supported by regulatory enforcement, technological innovation, and public participation. This will address the root causes of pollution and foster a culture of conservation, thereby conserving the Godavari River for future generations and preserving its ecological, economic, and cultural values.

Key words: Degradation, Water quality, Urbanization, Godavari River, Physio-chemical.

Introduction:

Godavari River is an essential life for the central and southern India to be named as the "Dakshin Ganga" as its watershed basin, covering an extensive area, besides being a vital entity that has importance culturally. Flowing 1,465 kilometers from Trimbakeshwar hills of Nashik district in Maharashtra state, this river, though passing through diverse landscapes, has made it a rich source of water as well as a treasure in spiritual terms and for agriculture and ecological means.

Nashik is a very historically and culturally rich city that draws its strength from the Godavari River. With religious importance, especially when the Kumbh Mela takes place every 12 years, Nashik attracts millions of pilgrims who make use of the river for their rituals, bathing, etc. However, this level of human activity adds substantially to the pressure on the river's ecosystem. Alongside spiritual activities, Nashik is a hub of industrial and agricultural operations, further amplifying the demand for water and the risk of pollution.

Hydrology and water quality are vital indicators of the health of a river. The hydrological regimes of the Godavari vary seasonally, so that during the monsoon months, rich rainfall replenishes the rivers and their surrounding ecosystems. On the other hand, during the pre-monsoon and post-monsoon periods, low-flows expose the river to higher concentrations of pollutants. These seasonal

Scanned with OKEN Scanner

dynamics emphasize the need for a detailed study of both hydrological and water quality parameters.

Urbanization has drastically changed the natural flow regime of the river. Nashik's population growth has led to increased generation of domestic and industrial wastewater, most of which finds its way into the Godavari untreated. Studies show that untreated sewage contributes to about 60% of the river's pollution load, while industrial effluents contribute another 20%. Agricultural runoff, carrying pesticides and fertilizers, is another problem, especially during the monsoon when rainwater washes chemicals into the river.

Water quality in the Godavari River has been a cause for concern for decades. Essential parameters like pH, DO, BOD, and COD indicate the presence of organic and inorganic pollutants. For example, DO levels are considered critical for aquatic life but are found to be low, less than 3 mg/L, in many downstream areas, thereby constituting a severe threat to biodiversity. Similarly, elevated levels of heavy metals like lead, cadmium, and chromium have also been seen, especially within the near-industrial-discharge zone.

The socio-economic implications cannot be missed when talking of the Godavari river's health. For irrigating farm fields, river water constitutes a lifeline for irrigation. However, polluted waters have led to reduced yields and soil deterioration, having an impact upon agricultural productivity. Public health is another issue that needs to be addressed; the community that depends on this river for drinking and domestic purposes suffers from waterborne diseases like gastroenteritis and cholera. Moreover, the aesthetic value and spiritual value of this river are affected due to visible pollution in terms of solid waste and bad smell.

Hydrological and water quality aspects of the Godavari River have to be understood well for effective management strategies.

Study Area:

Nashik is an important city in northern Maharashtra, along the Godavari River. The river flows through urban and rural areas, taking inflows from tributaries such as Darna and Kashyapi. Important study sites include Trimbakeshwar (source), Ramkund (shrine), and downstream industrial units.

Objectives of the Study

1. To analyze the hydrological parameters of the Godavari River in Nashik.
2. To assess the water quality based on physical, chemical, and biological parameters.
3. To identify pollution sources and propose sustainable solutions.

Data Sources and Methodology

Data Collection:

Primary data were collected through:

1. **Sampling Locations:** Water samples were collected from five strategic locations Trimbakeshwar, Panchavati, downstream near Nashik Road, industrial zones, and the confluence point. These locations represent varying levels of urban and industrial impact.
2. **Temporal Coverage:** Monthly sampling was conducted during pre-monsoon (March to May), monsoon (June to September), and post-monsoon (October to December) periods in 2024.
3. **Sample Volume and Preservation:** Standard volumes of 2 liters per sample were collected in sterilized containers, preserved at 4°C, and transported to the laboratory for analysis.

Analytical Techniques:

Hydrological Parameters:

Flow Rate and Discharge: Measured using flow meters at each location.

Rainfall Data: Obtained from the Nashik Meteorological Department to correlate with discharge patterns.

Physical Parameters:

Turbidity and temperature were recorded on-site using a nephelometer and thermometer, respectively.

Chemical Parameters:

i. pH: Measured using a calibrated digital pH meter.
ii. DO, BOD, COD: Assessed using Winkler's titration method and standard protocols.
iii. Heavy Metals: Lead, chromium, and other metals were analyzed using atomic absorption spectrophotometry.

Biological Parameters:

Coliform levels were determined through the most probable number (MPN) method.

Statistical Analysis:

The collected data were statistically analyzed using software tools such as SPSS and Microsoft Excel. Seasonal trends and spatial variations were evaluated through ANOVA and correlation analysis.

Quality Control:

To ensure data accuracy, all instruments were calibrated before use, and each test was performed in triplicate. Standard operating procedures (SOPs) were strictly followed during sample collection and analysis.

Results and Discussion

Hydrological Assessment

Flow Rate and Discharge: The monsoon season exhibited the highest discharge (12,000 m^3/s), while pre-monsoon periods showed reduced flow rates (2,500 m^3/s).

Seasonal Variations:

The river experiences significant seasonal fluctuations, impacting sediment load and nutrient transport.

Scanned with OKEN Scanner

Water Quality Analysis

Physical Parameters

- **Turbidity**: Increased turbidity during monsoons due to sediment inflow. High turbidity levels during the monsoon (up to 60 NTU) indicate significant erosion and runoff from surrounding lands, affecting aquatic habitats.
- **Temperature**: Variations between 21°C (winter) and 32°C (summer) were recorded. Temperature directly influences dissolved oxygen levels and biological activity.

Chemical Parameters

- **pH**: Ranged from 6.5 to 8.3, indicating slight alkalinity. Monsoons showed slightly acidic conditions due to organic runoff.
- **Dissolved Oxygen (DO)**: Dropped to 3.2 mg/L in industrial zones, suggesting organic pollution. High levels (7.5 mg/L) were recorded near Trimbakeshwar due to limited anthropogenic influence.
- **Biochemical Oxygen Demand (BOD)**: Exceeded permissible limits (10 mg/L) in downstream locations, reaching 15 mg/L in industrial zones. Elevated BOD indicates the presence of biodegradable organic matter.
- **Chemical Oxygen Demand (COD)**: High levels (50-80 mg/L) in industrial discharge zones highlight the presence of both organic and inorganic pollutants.
- **Heavy Metals**: Lead (0.05 mg/L) and Chromium (0.03 mg/L) concentrations above acceptable limits in industrial zones are attributed to untreated effluents.

Biological Parameters

- **Coliform Levels**: High coliform counts (1,000 MPN/100 mL) near urban settlements suggest untreated sewage discharge. Pre-monsoon samples recorded the highest contamination levels, indicating insufficient dilution.

Table 1: Water Quality Parameters at Different Locations (2024)

Parameter	Trimbakeshwar	Panchavati	Downstream	Industrial Zone	Confluence
pH	7.1	7.5	7.2	6.9	7.0
DO (mg/L)	7.5	6.2	4.0	3.2	4.8
BOD (mg/L)	4.0	7.0	12.0	15.0	10.0
COD (mg/L)	25.0	40.0	60.0	80.0	50.0
Lead (mg/L)	ND	0.01	0.03	0.05	0.02
Chromium (mg/L)	ND	0.005	0.02	0.03	0.01

Source: Primary Data Collection & Calculated by Researcher.

Table 2: Seasonal Trends in Water Quality (2023)

Season	DO (mg/L)	BOD (mg/L)	COD (mg/L)	Turbidity (NTU)	Coliform (MPN/100 mL)
Pre-Monsoon	5.2	10.5	65.0	25.0	1200
Monsoon	6.8	8.0	40.0	60.0	800
Post-Monsoon	5.5	9.5	55.0	30.0	1000

Source: Primary Data Collection& Calculated by Researcher.

Seasonal Analysis:

Pre-Monsoon:

Represented the most polluted period with reduced flow rates leading to higher concentrations of pollutants such as BOD and COD. Turbidity remained low, but biological contamination was prominent.

Monsoon: While dilution effects reduced concentrations of many pollutants, sedimentation significantly increased turbidity, impacting aquatic life.

Post-Monsoon: A transitional phase with moderate improvements in water quality but lingering effects of accumulated pollutants.

5. Spatial Analysis

Trimbakeshwar: Showed the best water quality due to minimal anthropogenic activity. High DO and low pollutant levels characterize this site.

Panchavati and Downstream:

Witnessed significant degradation due to urban effluents and untreated sewage. The cultural and religious activities at Panchavati contribute to organic pollution.

Industrial Zones: T

He worst water quality was observed here, with critical levels of COD, heavy metals, and low DO.

Recommendations

Improved Wastewater Treatment Facilities:

Establish and upgrade wastewater treatment plants to ensure that untreated sewage is not being discharged into the river. Implement modern treatment technologies to reduce the contamination of water and improve overall water quality.

Monitoring and Surveillance:

Set up regular water quality monitoring stations at strategic points along the Godavari River to track changes in water quality. Ensure that parameters like pH, dissolved oxygen, BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), and heavy metals are regularly measured.

Scanned with OKEN Scanner

Public Awareness and Community Participation:

Launch awareness campaigns about the importance of keeping the river clean. Encourage the local population, especially those living near the riverbanks, to adopt responsible practices like proper waste disposal and avoiding the use of the river for dumping harmful substances.

Riverfront Development with Sustainable Practices:

Promote sustainable development along the Godavari River by ensuring that construction activities along the riverfront do not harm the river's ecosystem. Implement green spaces and create buffer zones to reduce pollution run-off from the city.

Rainwater Harvesting and Groundwater Recharge:

Encourage rainwater harvesting practices in the city to reduce the pressure on the river and maintain its water levels during dry periods. Use treated wastewater for non-drinking purposes to reduce demand on the river's freshwater supply.

Reduction in Solid Waste Disposal:

Ban the disposal of solid waste, including plastic, directly into the river. Initiate community-led clean-up drives and work with local authorities to ensure that waste management systems are in place to handle waste efficiently.

Regulation of Agricultural Runoff:

Implement better agricultural practices upstream, including controlled use of fertilizers and pesticides, to prevent runoff that pollutes the river. Support organic farming practices to reduce chemical contamination.

Strengthening Environmental Policies and Regulations:

Reinforce regulations to control industrial effluents and prevent illegal dumping in the river. Tighten enforcement of the Water (Prevention and Control of Pollution) Act and ensure accountability among industrial units.

Promotion of Eco-Friendly Tourism:

Develop eco-tourism initiatives that respect the natural habitat of the Godavari River. Establish green infrastructure, like cycling tracks and nature trails, to promote a healthier and more sustainable interaction with the river.

Collaboration with Research Institutions:

Collaborate with hydrological and environmental research institutions to develop more advanced models for understanding the river's hydrology and its potential for sustainable water management.

Incentivizing Industries for Zero Discharge:

Introduce policies to incentivize industries along the Godavari River to adopt zero-discharge principles, promoting the reuse of wastewater and recycling within the industrial processes.

Flood Management and Riverbed Stabilization:

Improve flood management systems along the Godavari River to mitigate the effects of heavy monsoon rains. Implement techniques for riverbed stabilization to prevent soil erosion and maintain the river's capacity.

By implementing these recommendations, Nashik can improve the overall health of the Godavari River, ensuring that it remains a vital resource for both the environment and the local population.

Conclusion:

The Godavari River in Nashik possesses great cultural, ecological, and economic importance, because it provides water to the entire city and its surroundings. However, the river has been increasingly facing threats in the form of urbanization, pollution, and climate change, which may adversely affect its sustainability. From the hydrological assessment and water quality analysis, one can infer that there is an immediate need for holistic measures to improve water quality and manage water resources better.

The recommendations outlined, including improvements in wastewater treatment, regular monitoring, and public awareness campaigns to better waste management, sustainable agricultural practices, and strict environmental regulations, should be able to address all these challenges. By targeting both short-term and long-term solutions that include infrastructural improvement, community participation, and encouraging sustainable practice, Nashik can guarantee the protection and restoration of the Godavari River for future generations.

Nashik, under collaborative efforts from the part of government agencies, industry, local communities, and environmental organizations, can shape the Godavari into a cleaner, healthier source of water that can significantly improve the quality of people's lives and at the same time safeguard the biodiversity of the region through it and support livelihoods that depend on the river's existence.

References:

1. Agarwal, A., & Narain, S. (1997). Dying Wisdom: Rise, Fall, and Potential of India's Traditional Water Harvesting Systems. Centre for Science and Environment.
2. Ali, M., & Kumar, M. (2012). Hydrological Assessment of River Watershed Systems: Challenges and Opportunities. Springer.
3. Bhatt, A., & Mathur, R. (2015). Water Quality Assessment of River Systems in India: A Case Study on Godavari. Environmental Monitoring and Assessment, 187(7).
4. CPCB (2014). Water Quality Status of Major Indian Rivers. Central Pollution Control Board, Ministry of Environment and Forests, Government of India.

Scanned with OKEN Scanner

5. Deshmukh, A. D., & Gokhale, M. P. (2017). Hydrological Analysis of River Godavari in Nashik: Impacts of Urbanization on Water Quality. Indian Journal of Environmental Protection, 37(3).
6. Govind, N., & Shah, N. (2016). Urbanization and Its Effect on River Quality in Nashik: A Hydrological Perspective. . Environmental Science & Technology, 50(5).
7. Gopal, B., & Wadhawan, K. (2007). Impact of Agriculture on River Ecosystem: The Godavari River Case. Journal of Environmental Management, 83(3).
8. Gupta, A., & Gupta, A. (2018). Hydrological Modelling and Water Quality Management in Indian Rivers. Springer.
9. Indian Council of Agricultural Research (ICAR) (2010). Agricultural Runoff and Water Quality Management: A Study of River Godavari. ICAR Publications.
10. Jadhav, S. S., & Patil, S. S. (2019). Assessment of Heavy Metal Pollution in the Godavari River, Nashik. Water Quality and Pollution Control, 22(4).
11. Jha, M., & Mishra, V. (2021). Pollution Control and River Rehabilitation: A Case Study of the Godavari River Basin. Journal of Environmental Engineering, 48(1).
12. Kamble, S., & Kumar, S. (2020). Water Pollution Control and Sustainable Management of the Godavari River in Nashik. Water Resources Management, 34(6).
13. Khan, A. R., & Shukla, S. (2018). Environmental and Hydrological Impact Assessment of Godavari River: A Case Study of Nashik. Journal of Hydrology and Environmental Research, 31(2).
14. Mane, D. P., & Rane, V. B. (2021). Hydrological Dynamics of River Godavari in Nashik City: A Study on Water Availability and Quality Issues. Journal of Water Sustainability, 6(3).
15. Mishra, V., & Soni, P. (2017). Monitoring and Assessment of River Godavari: A Case Study of Nashik City. Environmental and Water Science Journal, 9(4).
16. Ministry of Environment, Forest and Climate Change (MoEFCC) (2018). Water Quality Monitoring in River Systems: Guidelines and Standards. MoEFCC, Government of India.
17. Nashik Municipal Corporation (NMC) (2015). Water Pollution Control and Management in Nashik City: A Report on River Godavari. NMC Publications.
18. National Institute of Hydrology (NIH) (2019). Hydrological Models and Water Quality Analysis in Indian Rivers. NIH Publications.
19. Singh, R., & Verma, A. (2014). Water Quality Management in Godavari River: A Hydrological Approach. Indian Journal of Environmental Science, 31(2).
20. State of Maharashtra (2016). Environmental Management Plan for the Godavari River Basin. Government of Maharashtra, Environmental Department.
21. World Bank (2015). Sustainable Water Resources Management in Indian River Basins: A Case Study of Godavari. World Bank Publications.

Scanned with OKEN Scanner

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 8.141
Peer Reviewed Bi-Monthly
Vol.6 No.10 Jan-Feb 2025

Impact of Urbanization on Water Quality of the Godavari River in Nashik City (Maharashtra)

Mr. Chourasiya Kanhaiya Keshav
Assistant Professor, Department of Zoology, MVP Samj's, K. P. G. Art's, Commerce and Science College, Igatpuri, Dist- Nashik, Maharashtra
Corresponding Author: Mr. Chourasiya Kanhaiya Keshav
Email: kkchourasiya74@gmail.com

Abstract:

The Godavari River with which Nashik city shares sensitivity as a lifeline has been going through a lot of environmental issues since three decades because of the increasing urbanization. The river that was once so pure and of immense use to the towns people of this city has gradually been experiencing some form of deterioration in its overall health and also water quality. This degradation can be as a result of factors such as the growth of urban centers without appropriate control, people dumping all manner of domestic and industrial waste into rivers without any treatment, and effects resulting from religious activities such as offering and baptisms. As the Godavari River is the lifeline for the entire region in terms of meeting the ecological balance, and its multiple utilization in water needs this study aims to evaluate how far the urbanization has affected the health of this river. The data is collected from both primary and secondary sources and the data of analysis of some of the key physio-chemical parameters of the river to determine the amount of pollution involved. Here, the findings show that two main sources of pollution are domestic sewage, industrial effluents, and the disposal of articles, such as pictures and videos or objects used in religious activities. Also, the research highlights various recommendations to prevent the impact of urban pollution and other practical approaches towards the protection and rehabilitation of this important water source. Based on the findings of the study, the study also focuses on the need to develop another form of urban growth, with concern for the environment and the human resource in the Godavari River for the benefit of the future generation.

Key words: Degradation, Water quality, Urbanization, Godavari River, Physio-chemical

Introduction:

The Godavari River is the second largest in the peninsular India and is an important source of water supply. This river flows through Nashik city which is historically, culturally and economically important city in India. Nashik has religious importance and can also entice visitors all year round. The city has however over the years gone through urbanization and has developed into a fast growing industrial area enhancing the density of the populous. This uncontrolled growth of towns have brought forth the following difficulties to the area.

Now, coming to liberalization Nashik has grown and drastically changed in its landscape. Many people and companies have been congesting the urban places most of the time. New industries have developed their sources on the banks of the river that has made it not to have its natural course and health. Growth has not been gradual; instead, it has been chaotic, and growth without direction has intruded on spaces containing trees and water. About the changes that appear in the environment of Nashik, severe pollution of the Godavari River as for the water it contains has taken place. Pollution in the river has come as a result of factors such as waste disposal, untreated sewage and industrial effluent. water pollution of such type is highly dangerous to the aquatic life that relieves on the river's ecosystem. Contaminants can threaten fish and other water-dwelling organism as contamination conspires to enter water. Other communities in this region who source their drinking, cooking and agriculture water from the river, have a very severe health issue.

This research as an analytical study seeks to investigate how the process of urbanization has affected water quality in the Godavari River. Urbanization entails several human activities most of which are unpleasant towards water bodies. What is more, that also means pollution of the environment with the disruption of natural living spaces and disruption of the regular water flow. Many events and festivals are celebrated in Nashik and therefore millions of people throng to its banks especially during Kumbh Mela. All these aggravate the situation because they create waste and exert pressure on the local assets.

In this paper, the papers would identify the factors that impacting on the quality of water in Godavari River. The paper discusses and analyzes

Scanned with OKEN Scanner

urbanization as one of the causes not only industrial processes, but also pollution. Therefore, the results will reveal the essence of these times for positive sustainable and more health conditions with restored and preserved states. Knowledge of this relationship contains fundamental measures to the safety of the environment, of the communities dependent on the Godavari River.

Study Area:

This paper considers the stretch of the Godavari River passing through the Maharashtra city of Nashik and the samples were collected at upstream, midstream, and downstream. This stretch is of great importance because it is majorly used for; dwelling, industrial needs and religious activities.

Objectives of the Study

1. In order to measure the current day water quality in the Godavari river concerning Nashik.
2. To examine most of those factors that contribute towards degradation of the water quality and such pollution being related to urbanization.
3. To provide remedial measures that will assist in more improvement and sustaining the quality of the river.

Data Sources and Methodology

A systematic approach of data collection has been selected for this particular research study by using both primary as well as secondary data sources in order to evaluate more effectively and accurately the conditions of water quality prevailing in the Godavari river in Nashik. The primary data was collected by taking water samples from three particular points in the river to compare differences in pollution level between different places and periods. These sampling points were the upstream section nearby Gangapur Dam which can be considered as less polluted reference point, midstream section at Ramkund which is religious site and has large human activities such as bathing washing and immersion of gods and goddesses statues, and downstream section at Tapovan which is situated far away from the city but receives water pollutants form urban and industrial sources. To assess temporal changes in pollution and potential impacts of rainfall, water discharge, and human activities, water samples were collected from the river in three seasons; before monsoon, during monsoon, and after monsoon. Accompanying the primary data collected, secondary data was also gathered using data collected from multiple South Asian authoritative sources such as the Nashik Municipal Corporation (NMC), the Central Pollution Control Board (CPCB) and many others as well as past studies completed on the Godavari River. This secondary data offer clues on long-term trends in pollution, historical records of water quality and previously identified sources of pollution and serve to support the findings from the analysis of the primary data sources.

The study thus concentrated on assessment of a number of important physio-chemical characteristics that influence the health status of the river. These comprised of pH which shows the acidity or alkalinity of water and impacts the aquatic life; DO which enables the determination of the river's capacity to support aquatic life; BOD which shows the amount of organic matter in the river that requires oxygen for breakdown; COD which estimates the amount of pollutants in the river including industrial effluents and chemical soluble deposits. Furthermore, TDS were biased to determine the number of dissolved minerals and salts in the water that are safely consumable by humans and safe for ecosystems to support aquatic lives. The study also looked at Nitrate and Phosphate because high concentrations of these nutrients can cause eutrophication; thereby promoting the growth of algae while limiting oxygen for other animal life. In addition, Lead (Pb), Cadmium (Cd) and Chromium (Cr) concentrations were determined because these metals exert toxic impacts to both water ecosystems and human beings when they reach dangerous levels through industrial effluent discharges and other human activities.

Through comparing the values of these functional characteristics of water in different places and at different moments the authors of the study tried to obtain general idea about the current levels of pollution of the Godavari River, to reveal the major sources of pollution, and to specify the potential directions of its effective management and sustainable development.

Results and Discussion

1. Water Quality Analysis:

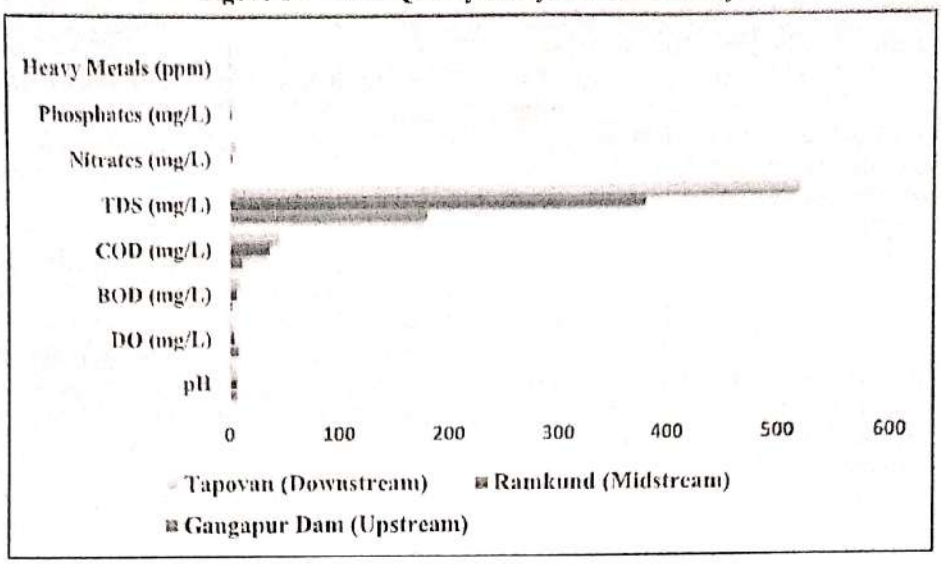
Table 1 : Water Quality Analysis in Nashik City

Parameter	Gangapur Dam (Upstream)	Ramkund (Midstream)	Tapovan (Downstream)
pH	7.6	6.9	6.5
DO (mg/L)	8.2	5.1	3.8
BOD (mg/L)	2.1	6.5	9.2
COD (mg/L)	12	36	45
TDS (mg/L)	180	380	520
Nitrates (mg/L)	0.8	3.2	5.5
Phosphates (mg/L)	0.3	1.5	2.8
Heavy Metals (ppm)	Trace	0.04	0.09

Source: Primary Data Collection & Value Calculated by Researcher.

Scanned with OKEN Scanner

Figure 1 : Water Quality Analysis in Nashik City



Everyone might be wondering how the water quality in the Godavari River in the Nashik City looks like as the River passes through Gangapur Dam, midstream in Ramkund and downstream in Tapovan. The pH values change slightly starting from 7.6 which is recorded in Gangapur Dam and decreases to 6.5 in Tapovan due to increment in pollution level. Likewise, DO which is paramount to aquatic life decreases from the up-stream value of 8.2 mg/l to a critical low of 3.8 mg/l downstream indicting organic and industrial pollution leading to oxygen depletion. The parameters of biochemical oxygen demand (BOD) and chemical oxygen demand (COD) which estimate the concentration of organic as well as chemical pollutants dramatically rises at downstream; BOD rising from 2.1 mg/L to 9.2 mg/L at downstream and COD rising from 12 mg/L to 45 mg/L and also increases with a high threshold level of waste and industrial effluents affecting the river system. In addition, the Total Dissolved Solids (TDS), an index of dissolved minerals and pollutants raise from 180 mg/L at Gangapur Dam to 520 mg/L at Tapovan which makes the water ineligible for human consumption and for supporting life in the rivers. In terms of eutrophication and excessive algal grows, there are also remarkable changes in concentration of nitrates and phosphates in which the nitrates from 0.8 mg/L to 5.5 mg/L and phosphates from 0.3 mg/L to 2.8 mg/L this due to contamination from sewage, detergents and agricultural run-off. Heavy metals like Pb, Cd and Cr are detected, though in traces at Gangapur Dam, becomes conspicuous at Ram Kund 0.04 ppm which increases at Tapovan 0.09 ppm and clearly indicates that industrial effluent discharge is adding to the scenario.

The degree of pollution also shows Ramkund as having medium levels of pollution because of religious and domestic purposes while Tapovan is highly polluted that makes its water non potable to humans and inimical to aquatic life. In order to reverse the above deteriorations, stringent standards for disposal of industrial effluents, setting up and operating STPs, educating the public on environmental hazards from religious rituals, water quality analysis and use of Water Recycle & Reuse and Environment Sensitive Urban Development etc should be applied. These measures can go along way in helping to improve the water quality of the Godavari River, in order to be saved for future generations.

2. Urbanization and Pollution Sources:

1. **Domestic Sewage:** Nashik produces around 250 MLD of sewage, of which only 70% is treated effectively. The remaining untreated sewage is directly released into the river, especially during peak flow periods.
2. **Industrial Effluents:** Small-scale industries around Ambad and Satpur industrial areas directly throw partly treated or untreated industrial wastewater into the river. Contained in such effluent are hazardous chemicals and heavy metals.
3. **Religious and Cultural Activities:** Mass bathing and immersion of idols during festivals enhance the turbidity, heavy metal contamination, and nutrient loads. Religious activities mainly include offerings of organic and non-biodegradable materials.

3. Seasonal Variation:

Water quality improves marginally during the monsoon period due to dilution effects but deteriorates significantly during pre-monsoon months due to low flow and higher concentration of pollutants. The post-monsoon periods show intermediate conditions with sedimentation of pollutants playing a critical role.

Scanned with OKEN Scanner

Ecological and Public Health Impacts The declining water quality has far-reaching implications:

1. **Aquatic Ecosystems:** Decline in DO values and an increase in BOD and COD impacts aquatic fish and other species. The loss of biodiversity occurs at downstream stretches.
2. **Public Health:** The contaminated water risks waterborne diseases like cholera and dysentery. Heavy metals in the water may lead to chronic health conditions in communities that depend on the river for drinking and agriculture.

Recommendations

1. **Infrastructure Development:** Enhance sewage treatment capacity with 100% treatment before discharge. Upgrade the present treatment plants with latest technologies such as activated sludge and membrane bioreactors.
2. **Industrial Regulation:** Implement strict monitoring with imposition of penalties in case of non-compliance with the norms of effluent treatment. Encourage the use of zero-liquid discharge systems by industries.
3. **Community Engagement:** Awareness campaign to be carried out regarding eco-friendly practices at religious events. Use of biodegradable materials during rituals to be encouraged.
4. **Urban Planning:** Incorporate river conservation in urban development policies, emphasizing the minimization of encroachments and the encouragement of green buffers along the riverbank.
5. **Periodical Monitoring:** Install real-time water quality monitoring stations across critical points of the river. Use data analytics for predicting pollution trends and formulating timely interventions.
6. **Policy Interventions:** Strengthen environmental regulations and offer incentives for the adoption of sustainable practices. Engage NGOs and academic institutions for research and advocacy on policy matters.

Conclusion:

Consequently, much harm has been done to the Godavari River flowing in Nashik on account of urbanization. The three major activities linked to the urbanization process have greatly contributed to polluting the river through protraction of industrial waste, poor disposal of sewage and increased littering. Unless prompt countermeasures are taken, the Godavari could degrade both ecologically and culturally to the point at which it cannot be regenerated. The river plays the role of cultures and spirits to the using groups and communities and if lost, it is way too much gone.

This situation calls for sustainable activities and policies in the 'management of the growth of urbanization influence' coupled with the 'healing process of the River. This is why the effective practical measures should be aimed at reducing pollution levels, at the implementation of efficient methods of waste utilization and at increasing the level of conservational measures for the river's natural environment. The achievement of these goals will not be possible unless all the stakeholders come in and do their part. Regarding the cleansing activities, it is suggested that government agencies should enable regulations and provide facilities for the clean-up activities. Businesses need to embrace new ways of doing business in order to cause least harm to the environment. They also include local communities who should participate in clean-up activities and in raising conservation consciousness that can bring about the change.

It is incumbent upon them as a collective future for the Godavari River appears bright. When people have group endeavors, efforts will be made in a bid to rehabilitate this health of this river so that will be of more importance to human beings and for generations to come. Much attention has to be paid to its rehabilitation as soon as possible without it turning into-lifeless and ecology-free landscape or simply cultural landmark. Only thereafter steps for action taken immediately will make sure that there is no more degrading process and the river becomes healthier and cleaner for everybody.

References:

1. APHA (2012). Standard methods for the examination of water and wastewater (22nd ed.). American Public Health Association, Washington, D.C.
2. Central Pollution Control Board (CPCB) Reports (2018-2023).
3. CPCB (2008). Status of water quality in India – 2007. Central Pollution Control Board, Ministry of Environment and Forests, Government of India.
4. EPA (2001). Parameters of water quality: Interpretation and standards. Environmental Protection Agency, Ireland.
5. Gupta, A. (2021). Seasonal Variations in River Water Quality: A Case Study of Godavari. International Journal of Hydrology, 12(4), 245-259.
6. Kannel, P. R., Lee, S., Lee, Y. S., Kanel, S. R., & Khan, S. P. (2007). Application of water quality indices and dissolved oxygen as indicators for river water classification and urban impact assessment. Environmental Monitoring and Assessment, 132(1-3), 93-110.
7. Kharake, A. C., & Raut, V. S. (2021). An assessment of water quality index of Godavari river water in Nashik city, Maharashtra. Applied Water Science, 11(101).

Scanned with OKEN Scanner

The Role of Rare Tourism Development in Nashik District

Mr. Uttam Nivrutti Sangale
Assistant Professor
Department of Geography
MVP Samaj's Arts, Commerce & Science College
Tryambakeshwar 422212
Email: uttamsangale@gamil.com
Contact: 9604009002

Abstract:

Nashik, located in Maharashtra, India, is known for its religious significance, cultural richness, and natural beauty. Although its well-established attractions such as the Kumbh Mela and vineyards bring many visitors, this district holds the potential for expanding rare tourism—forms of tourism that go beyond traditional offerings to tap into unique, lesser-known aspects of the region. This paper explores the various facets of rare tourism in Nashik, identifying opportunities, challenges, and the potential impact on local communities and the economy. By emphasizing sustainability, cultural preservation, and offbeat experiences, Nashik has the opportunity to redefine itself as a key destination for niche travellers.

Keywords: Nashik, rare tourism, ecotourism, cultural heritage, sustainable development, niche tourism, Maharashtra

Introduction:

Tourism plays a pivotal role in regional development by contributing to the economy, creating employment opportunities, and preserving local culture and heritage. Nashik, a district in northern Maharashtra, has long been known for its religious and historical significance, with key attractions like the Trimbakeshwar Temple, the ancient Pandav Leni caves, and the Kumbh Mela. More recently, it has gained prominence as India's wine capital due to its numerous vineyards.

However, with rising concerns over the sustainability of mass tourism and the increasing desire among travelers for more personalized, unique experiences, Nashik has the potential to promote "rare tourism"—a form of tourism that focuses on less-explored, offbeat, and niche experiences. This article examines the role of rare tourism development in Nashik and its implications for sustainable economic growth, community involvement, and cultural preservation.

Defining Rare Tourism:

Rare tourism can be understood as a type of niche tourism that moves away from mainstream destinations and experiences, offering travellers the opportunity to engage with unique aspects of a region that are often overlooked. It may include activities like eco-tourism, cultural tourism, heritage tourism, and adventure tourism, among others. What sets rare tourism apart is its focus on sustainability, minimal environmental impact, and the preservation of local traditions and culture. In the context of Nashik, rare tourism might involve:

- Exploring less-known pilgrimage sites
- Participating in local festivals and cultural events
- Trekking to lesser-explored historical forts and natural sites
- Engaging in agricultural and wine tourism

Scanned by CamSc
Scanned with OKEN Scanner

- Seeking wellness through Ayurveda and meditation retreats

Nashik's Tourism Landscape:

1. Religious Tourism:

Nashik's reputation as one of the holiest cities in India is deeply entrenched in Hindu mythology. The Kumbh Mela, one of the largest religious gatherings in the world, is held every 12 years at Nashik's Trimbakeshwar, attracting millions of devotees. Besides the well-known temples and pilgrimage centers, the district is home to several lesser-known religious sites that could appeal to spiritual seekers.

Opportunities for Rare Tourism:

- **Rare Pilgrimage Sites**: Numerous ancient temples in the rural parts of Nashik are less frequented by tourists. These sites offer spiritual solace and a more intimate religious experience. Rare tourism can promote spiritual walks or heritage trails connecting these smaller sites.
- **Eco-Spiritual Tourism**: The combination of eco-tourism and religious tourism could involve trekking to remote temples, often nestled in natural settings like forests or hills, offering a blend of spiritual and ecological experiences.

2. Cultural and Rural Tourism

Nashik is a treasure trove of culture, art, and tradition. Villages around Nashik are known for their unique crafts, folk art, and traditional lifestyles. This makes the region ideal for the development of rural tourism, where visitors can experience local traditions, cuisine, and festivals first-hand.

Opportunities for Rare Tourism:

- **Rural Cultural Immersion**: Visitors can spend time in traditional villages, engaging in activities like pottery making, textile weaving, and local culinary experiences. Festivals such as the Nashik Grishma Festival can be promoted to offer immersive experiences for tourists interested in rural culture.
- **Community-Based Tourism**: Rare tourism can be structured in a way that directly benefits local communities by involving them in the tourism process. Homestays, guided village tours, and local handicraft workshops can create sustainable economic opportunities while preserving cultural heritage.

3. Wine and Agri-Tourism

Nashik is often dubbed as the "Wine Capital of India" due to its thriving vineyards. The district produces over 80% of the wine in India, with several prominent wineries offering tours and tastings. However, rare tourism in this sector can extend beyond these large-scale operations to include smaller, lesser-known wineries and agricultural experiences.

Opportunities for Rare Tourism:

- **Boutique Wine Tours**: Rare tourism can encourage visits to smaller, family-owned vineyards, where tourists can enjoy a more intimate wine-tasting experience. Tours can focus on organic and biodynamic wine production, which appeals to a growing segment of eco-conscious travelers.
- **Farm Stays and Agri-Tourism**: Farm tourism offers visitors the chance to experience rural life, participate in agricultural activities, and learn about local farming practices. This niche form of tourism not only promotes sustainable agriculture but also provides visitors with a deeper connection to the land and its produce.

Scanned by CamScanner

Scanned with OKEN Scanner

4. Adventure and Ecotourism

Nashik's natural landscape, with its hills, rivers, and forests, offers significant potential for adventure and ecotourism. The district is home to several lesser-known trekking routes, historical forts, and waterfalls that are ideal for tourists seeking an offbeat adventure.

Opportunities for Rare Tourism:

- **Offbeat Trekking Trails**: While popular trekking routes like Kalsubai Peak attract many adventurers, there are several less-known trails leading to hidden forts and scenic viewpoints that could be promoted as part of Nashik's rare tourism offerings.
- **Wildlife and Bird-Watching Tours**: Nashik's proximity to sanctuaries and natural reserves offers opportunities for rare forms of ecotourism. Guided nature walks, birdwatching tours, and wildlife photography trips could draw eco-conscious travelers looking to engage with Nashik's natural beauty in a sustainable manner.

5. Historical and Archaeological Tourism

Nashik boasts a rich history, with archaeological and historical sites dating back thousands of years. Ancient trade routes, historical forts, and rock-cut caves like Pandav Leni make the district a significant hub for archaeological tourism.

Opportunities for Rare Tourism:

- **Historical Fort Tourism**: Many of Nashik's forts, such as Ramshej and Mulher, are lesser-known but offer stunning views and historical significance. Adventure tourists can explore these forts through organized trekking and historical walks, blending adventure with a deep dive into Nashik's past.
- **Archaeological Exploration**: Nashik's archaeological sites, such as the Pandav Leni caves, have the potential to draw scholars, students, and history enthusiasts. Guided tours led by historians or archaeologists can offer a rare educational experience.

6. Wellness and Ayurvedic Tourism

As people around the world increasingly seek wellness-focused holidays, Nashik's potential as a center for Ayurvedic tourism cannot be ignored. The region's tranquil natural settings are ideal for wellness retreats and holistic healing practices.

Opportunities for Rare Tourism:

- **Ayurvedic Retreats**: Establishing Ayurvedic wellness centers in Nashik's serene rural areas can offer a holistic approach to health and wellness tourism. These centers could offer treatments, detox programs, yoga, and meditation practices, attracting international tourists seeking wellness and rejuvenation.
- **Forest Bathing and Nature Therapy**: Nashik's natural beauty makes it an ideal destination for forest bathing (Shinrin-yoku), an emerging form of wellness tourism. Nature walks, meditation sessions, and retreats focused on reconnecting with nature could appeal to tourists looking for mental and spiritual wellness.

Challenges in Developing Rare Tourism

1. Infrastructure Limitations

While Nashik is well connected by road and rail, several potential rare tourism sites are located in rural or remote areas with limited infrastructure. Better roads, transportation services, and tourist facilities such as rest stops, signage, and safety measures need to be developed to accommodate tourists in these less-explored locations.

Scanned by CamScanner

Scanned with OKEN Scanner

2. Marketing and Awareness

A significant challenge in promoting rare tourism is creating awareness among tourists about the hidden gems of Nashik. Most travelers are drawn to the district's well-known sites, with little knowledge of its offbeat offerings. Strategic marketing campaigns, partnerships with travel influencers, and online promotions will be necessary to attract niche tourists.

3. Community Engagement

Local communities need to be actively involved in the development of rare tourism to ensure sustainable and inclusive growth. Community-based tourism models, where locals are involved in offering homestays, guiding tours, or producing local handicrafts, are key to ensuring that tourism benefits are equitably distributed.

4. Environmental and Cultural Preservation

With the increasing focus on sustainability, rare tourism initiatives in Nashik must prioritize environmental conservation and cultural preservation. Tourism can often lead to environmental degradation and cultural commodification, particularly in fragile rural areas. Developing policies that emphasize responsible tourism, limiting tourist numbers in ecologically sensitive areas, and encouraging eco-friendly practices are crucial for sustainable tourism development.

Conclusion:

Nashik's rich history, cultural diversity, and natural beauty make it an ideal destination for rare tourism development. By focusing on offbeat and lesser-explored aspects of the district—such as rural tourism, ecotourism, wellness tourism, and heritage tourism—Nashik can attract niche travelers seeking unique and sustainable experiences. However, to successfully tap into the rare tourism market, significant efforts must be made in infrastructure development, community engagement, and marketing. With the right approach, Nashik can become a model for sustainable, culturally rich, and economically viable tourism that benefits both visitors and locals alike.

Rare tourism allows Nashik to preserve its cultural heritage, protect its natural environment, and promote economic growth in a way that mass tourism cannot. As travelers increasingly seek authentic, immersive, and responsible tourism experiences, Nashik stands to become a leading destination for those looking to explore the road less traveled.

References:

- Bhargava, R. (2017). *Sustainable tourism and the rural economy: A case study of Maharashtra*. International Journal of Social Science and Economic Research, 2(9), 4673-4682.
- Chopra, V., & Shinde, A. (2019). Ecotourism and adventure tourism in Maharashtra: Opportunities and challenges. *Tourism Development Journal*, 6(1), 25-38.
- Deshpande, K. (2020). Wine tourism in Nashik: India's growing viticulture industry. *Journal of Agri-Tourism Research*, 5(2), 112-119.
- Dixit, M., & Jadhav, P. (2021). Community-based tourism for sustainable rural development: A study of Nashik district. *Indian Journal of Sustainable Development*, 10(3), 58-70.
- Gupta, R., & Wagle, S. (2018). Religious tourism and pilgrimage in Maharashtra: An economic perspective. *Journal of Cultural Heritage Studies*, 12(2), 79-92.

Scanned by CamScanner

Scanned with OKEN Scanner

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.5 No. 11 March-April 2024

A Geographical Analysis of Distribution about Sex Ratio with Special Reference of Nashik District of Maharashtra, India

Mr. Uttam Nivrutti Sangale
HOD, Department of Geography, MVP's Arts, Commerce and Science College, Tryambakeshwar, Nashik
Corresponding Author - Mr. Uttam Nivrutti Sangale

Abstract:
The sex ratio is described about demographic, economical structure, social and cultural structure of any region. In the present study major focus on the diversification of sex ratio in the urban area and rural area in the study region. An analysis of as per tahasil wise comparison between urban - rural area and Maharashtra state – Nashik district also. The given paper mainly observed that the Kalawan, Deola, Dindori and Peinth tahsils there are absence of urban sex ratio and urban area also. There are number of tahsils they founded low sex composition.

Keywords: Sex Ratio, Rural, Urban, Gender.

Introduction:

In the study regarding demography of population about sex ratio characteristics, age-sex structure is one of the prime characteristics of population composition. It is prime evidence that age and sex data are crucial for the understanding of applications in areas such as education, planning, health services, politics, technology and commercial also. Rural-urban divide, occupation structure, marital status, literacy, fertility and mortality highlight the inter connection of age and sex data with various demographic factors. Sex ratio it is evidence about real situation and typical condition about a particular region. It is notable that the data source basically collected from the district census handbook 2011 regarding detail comparative analytical study of sex ratio in the rural and urban region population.

Study Area:

The Nashik district region of Maharashtra has been selected for the present study. Nashik District is situated partly in the Tapi basin and partly upper Godavari basin. It lies between 19° 33' to 20° 53' North latitude and 73° 15' to 75° 16' East Longitude. Nashik District has an area of 15,530 sq. km and population of 61,07,187 as per the 2011 census. There are 15 tahsil were included in the Nashik District. In that we are selected urban area for distribution of urban settlement.

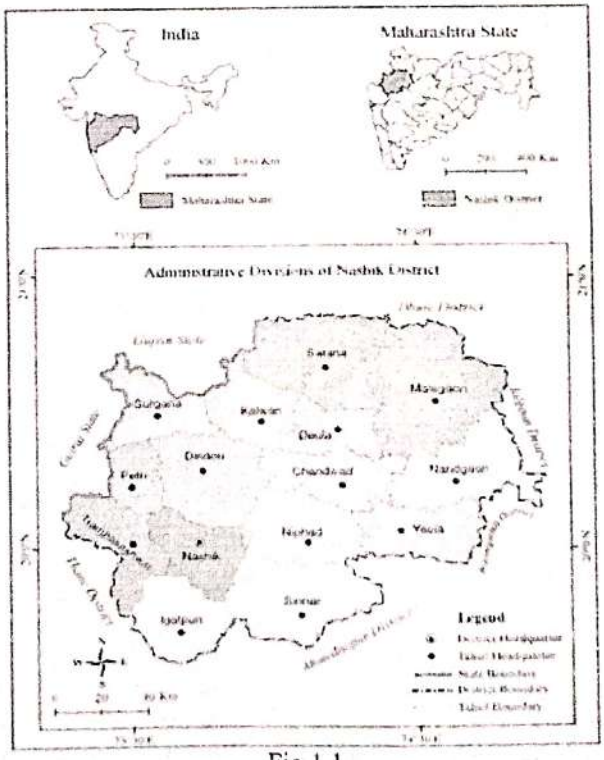


Fig.1.1

Scanned with OKEN Scanner

Aim and Objective:

Present study mainly focus on the following objective-

1. To find out sex ratio census 2011 pattern context of urban and rural in the study region.
2. To analyze the statistical account of sex ratio of population in the study region.

Source of Data:

The present study regarding population sex ratio data have been collected from the district census report 2011 for the comparative study between rural and urban area of tahsils in the study region.

Data Base and Methodology:

The current analytical work is based on Secondary data collected from published census report from Government of India. All related work from the published Article, journals and books.

The secondary data of sex ratio and population has been collected from district census handbook, Nashik district gazetteer, and district statistical data. The tahsil has been taken as a unit for the comparative analysis. The data is represented by the help of bar graph, statistical data. Analytical data is present with the help of tabular from.

Comparative Sex Ratio Analysis of State and District:

Table no: 1. State and district sex ratio

Census yr	State – Maharashtra			District- Nashik		
	Total	Rural	Urban	Total	Rural	Urban
2011	929	952	903	934	945	920

Source-District Census Handbook 2011

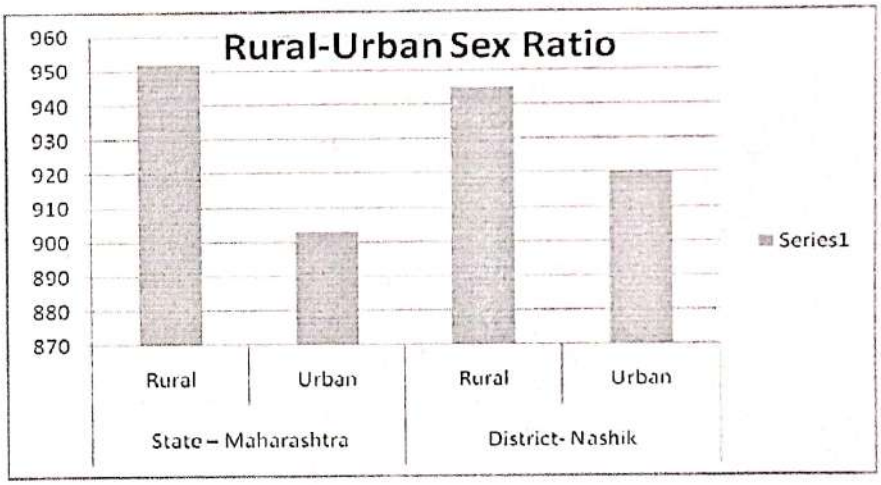


Fig.1.2

The sex ratio is a demographic indicator that measures the number of females per 1,000 males of population. Table no-1 it is clearly show that representation of sex ratio differentiation of male and female as per given census data of 2011. In the context of the data provided for the year 2011 in Maharashtra and Nashik district, the sex ratio is given for both the total population and further categorized into rural and urban areas.

Maharashtra & Nashik:

This means that the total sex ratio was 929 females for every 1,000 males in the entire state of Maharashtra and 934 for Nashik district in 2011. It was clearly show that the total sex ratio of Nashik district 934 is higher than the state of Maharashtra 929.

Rural & Urban Sex Ratio Maharashtra (2011):

According to census 2011, sex ratio of population in rural areas of Maharashtra, there were 952 females for every 1,000 males. In urban areas of Maharashtra, there was sex ratio of 903. Rural areas tend to have higher sex ratios compared to urban areas. Urban areas may have lower sex ratios due to various factors such as migration, industrialization, and socio-economic conditions.

Rural & Urban Sex Ratio Nashik (2011):

In the study region represents the sex ratio of rural area is 945 and in the urban area 920 sex ratio of population observed. It's simply mean that the rural sex ratio is higher than the urban sex ratio.

Scanned with OKEN Scanner

Tahsil wise rural and urban population sex ratio:

Table no: 2 Rural and urban sex ratio 2011.

S.R.	Tahsil	Sex ratio		
		Total	Rural	Urban
1	Surgana	1001	1003	960
2	Kalwan	963	963	0
3	Deola	919	919	0
4	Baglan	939	939	938
5	Malegaon	949	925	965
6	Nandgaon	932	918	958
7	Chandwad	932	935	908
8	Dindori	955	955	0
9	Peint	988	988	0
10	Trimbakeshwar	975	976	954
11	Nashik	904	936	900
12	Igatpuri	965	968	957
13	Sinner	924	934	885
14	Niphad	936	937	934
15	Yevla	937	934	948
	District Average	**934**	**945**	**920**

Source-District Census Handbook 2011

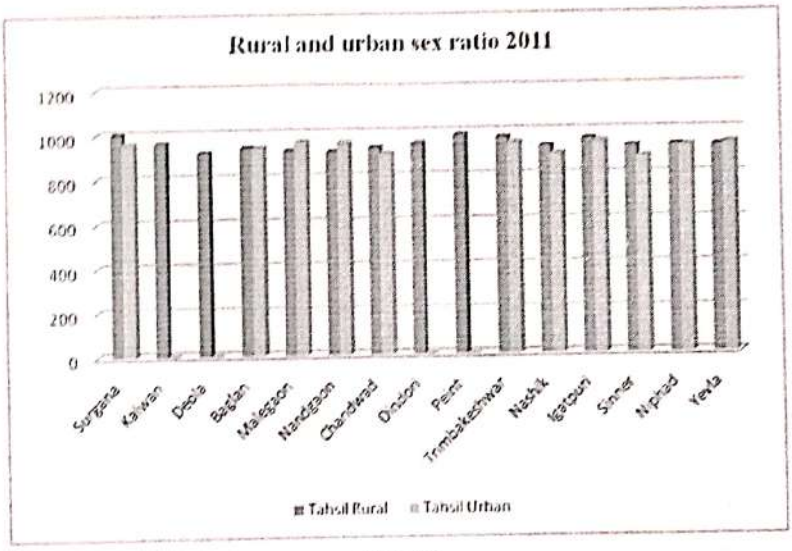


Fig. 1.3

According to Census 2011, the District sex ratio is 934. Within the district population sex ratio varies from tahsil to tahsil. The total average sex ratio of study region was 934 females. Surgana and peint tahsils total average sex ratio was 1001 and 988 respectively. It was noticeable higher rank among the tahsils. The higher average sex ratio of more than 975 females has been observed in the surgana (1001), peint (988) and Trimbakeshwar (975) in the study region. All the remaining tahsils sex ratio was found between the 900 to 975 females. As compared to Nashik was found lowest sex ratio 904 in the study region. There are nine tahsils was found which was average sex ratio between 900 to 950 females, respectively Deola (919), Baglan (939), Malegaon (949), Nandgaon (932), Chandwad (932), Nashik (904), Sinner (924), Niphad (936), Yevla (937) in the study region. It is high noticeable factors which was affect on the migration for the employment and education oppertunities. The highest sex ratio was observed in surgana (1001) followed by peint (988), Trimbakeshwar (975), igatpuri (965), kalwan (963). The sex ratio in between 900 to 963 was found Nashik (904), Deola (919), Sinner (924), Nandgaon (932), Chandwad (932), Niphad (936), Yevla (937), Baglan (939), Malegaon (949), Dindori (955), Kalwan (963). Nashik tahsil exhibits lowest sex ratio (904) in the study region. It was observed that western part of the study region higher sex ratio. In the middle part of study region was moderate sex ratio observed and eastern part lower sex ratio also found.

The average rural sex ratio of study region in 2011 was 945. The higher rural sex ratio was recorded by Surgana (1003) and Peint (988) followed by Trimbakeshwar (976), Kalwan (963). The lower rural sex ratio was observed at Nandgaon (918). In 2011

Scanned with OKEN Scanner

study region identified average sex ratio was 945 females per 1000 males in the rural area. It is very high possibility for most of the males migrated for to the gate opportunities about education and employment from the surgana (1001) and Peint (988) tahasils in study region.

In the urban area of study region the average sex ratio was found 920 females in 2011. In the Malegaon tahasil was recorded highest urban sex ratio (965) and lowest sex ratio was sinner tahasil (885) found in the study region. It was noticeable observation in the study region zero urban sex ratio was found in the Kalwan, Deola, Dindori and Peint. Because of lack of urbanization and less facilities observed as per census 2011. Remarkable lowest urban sex ratio observed in the sinner (885) followed by Nashik (900), Chandwad (908), Niphad (934), Baglan (938), Yevla (948), Trimbakeshwar (954), Igatpuri (957), Nandgaon (958), Surgana (960), Malegaon (965). In the study region there was no one tahasils sex ratio of urban area above 965 females. Because due to heavy migration was occurred from rural to urban region for various purposes.

Conclusion:

1. Both in Maharashtra and Nashik district, there is a significant difference in the sex ratios between rural and urban areas. Rural areas generally have higher sex ratios than the urban areas.
2. Very less sex ratio was found in the urban area as compared to rural area of study region.
3. It is noticeable observation in the study area there was absent of zero urban population in the highlighted tahasils like Kalwan, Deola, Dindori and Peint.
4. Those tahasils are observed low population sex ratio in the study region, socio economic, literacy, social background developments are less among them.
5. Hence it is necessary to study that other socio economical parameter that influence on the study area.

References:

1. Bhende, A. A., Kanitkar, T. (1997). Principles of Population Studies. Mumbai, India: Himalaya Publishing House
2. Barakade, A.J. (2012). Declining Sex Ratio: An Analysis with Special Reference to Maharashtra State, *Geoscience Resesrch*, (3)1.
3. Blanca A. d Josep R. (2017), "Defining urban and rural area: a new approach
4. Rajpange, M. G. (2017). Spatial Distribution of Sex Ratio in Ahmednagar District: A Geographical Analysis, *Cosmos Multidisciplinary Research E-Journal,* (2)3.
5. Patil, P. K. (2022). A Geographical Analysis of Sex Ratio from North Maharashtra (Nashik Division), *IJARIIE,* (8)3.

Scanned with OKEN Scanner

"Financial Literacy and its effect on the financial wellbeing of farmers"

CMA Jayraj Javheri[1*], Dr. Neelima Warke[2], Dr. Ambadas Sampat Kapadi[3], Prof. Devendra Kote[4], Dr. Tushar K. Savale[5]

[1*]Assistant Professor, Sanjivani University, Email: jayrajjavheri@gmail.com
[2]Professor, Godavari Institute of Management & Research, Jalgaon, Email: nilmawarke3@gmail.com
[3]Assistant Professor, K.P.G.Arts, Commerce & Science College, Igatpuri, kapadiambadas@gmail.com
[4]Assistant Professor, Sanjivani University, devendrakotescm@sanjivani.edu.in
[5]Assistant Professor (Marketing), Balaji Institute of Modern Management, Sri Balaji University Pune (SBUP)
Tushar.savale@bimmpune.edu.in, 0009-007-0666-9994

Abstract:
The consequences of low financial literacy extend far beyond individual hardships. Financial difficulties, often exacerbated by limited knowledge, lead to debt burdens, inability to invest in crucial inputs, and vulnerability to unforeseen shocks. This distress manifests in anxiety, depression, and extreme cases, the tragic reality of farmer suicides – a grim statistic with 10,281 lives lost in 2019 alone (NCRB, 2020). The impact doesn't stop there. Financial distress in agriculture, the backbone of India's economy, ripples through society, reducing agricultural output, hampering rural development, and contributing to social unrest. Empowering farmers financially is not only about improving their well-being but also about ensuring the sustainable development of the agricultural sector and the overall economic prosperity of India. By closing this knowledge gap and developing targeted interventions, we can unlock the immense potential of Indian agriculture and pave the way for a future where farmers thrive, not just survive.

Keywords: Financial Literacy, Financial Distress, Sustainable Development, Financial Well-Being.

Introduction

In India, only 27% of the population is financially literate, meaning only one out of every five Indians is equipped to deal with one of the most crucial aspects of human well-being.
The average Indian farmer has a poor understanding of financial management, with a score of 33.85% and 27.34% respectively. This lack of knowledge affects their income, spending habits, savings, and access to financing, making them vulnerable to predatory practices and exorbitant interest rates from informal moneylenders.
Low financial literacy leads to debt burdens, inability to invest in inputs, and vulnerability to shocks. This distress affects agriculture, reducing output and contributing to social unrest. However, empowering farmers with financial knowledge can reduce vulnerability and improve their well-being. Studies show that a 10% increase in financial literacy can lead to a 3% increase in agricultural income, highlighting the potential economic gains of financial empowerment.
While existing research investigates a clear picture of the challenges faced by Indian farmers and the potential benefits of financial literacy, crucial gaps remain. Limited studies have explored the specific financial challenges faced by different farmer categories (e.g., marginal vs. large), and the effectiveness of existing financial literacy initiatives requires deeper evaluation. Additionally, the psychological impact of financial distress on farmers demands further investigation.
Addressing this critical knowledge gap is not just an academic pursuit; it is a matter of national importance. Empowering farmers financially is not only about improving their individual well-being but also about ensuring the sustainable development of the agricultural sector and the overall economic prosperity of India. By closing this knowledge gap and developing targeted interventions, we can unlock the immense potential of Indian agriculture and pave the way for a future where farmers thrive, not just survive.

Need of study

Farmers in India are demanding higher support prices and loan waivers for their produce. The Uttar Pradesh and Punjab governments have announced waivers of up to Rs 2 lakh for small and marginal farmers and a flat Rs 2 lakh relief for all marginal farmers. However, State Bank of India chairman Arundhati Bhattacharya argues that support is necessary but not at the cost of credit discipline. Farmers face both controllable and uncontrollable risk factors, and a study on farmers' financial literacy can help agencies like governments and banks increase financial literacy and better utilize resources.

Literature Review

T.P. Arjun and R. Subramanian (2024) described in their study that 13 out of 36 studies defined FL conceptually, while 87% of the 36 studies only considered knowledge as the domain of FL, and 39% treated knowledge, ability/skill, and attitude elements together. Indians favored investment/saving content among FL measures, and over half (20/36) did not translate FL level into (=) one measure (e.g., score, sum, percentage, etc.).

The authors explore the effect of demographic and socio-economic determinants with reference to financial literacy and its implications on financial service for 400 unorganized sector workers in West Bengal, India. Jana, D., Sinha, A., & Gupta, A. (2024). Findings show occupation and income, as well as educational qualifications as significant explanatory variables, and income and domicile as positive determinants.

Rani, M., & Siwach, M. (2023), The financial literacy of retired workers helps them to increase their well-being. The level of financial literacy in retired workers was tested based on variables such as inflation, compound interest rates, and risk diversification. Financial literacy levels and demographic factors are related to behavioral biases. Indian investors suffer from anchoring and emotional biases. Self-attribution, herding, mental accounting, representativeness, and overconfidence add to it. Financial literacy negatively correlates with a herding bias and disposition but positively correlates with financial wellbeing

Das, S., & Maji, S. K. (2023) The study investigates the impact of Big-Five personality traits on financial literacy and risk propensity in four southern Indian cities. Results show that these traits significantly influence financial literacy, attitude, behavior, knowledge, and decision influences, with financial attitude positively influencing risk propensity.

Raza et al (2023) The increasing greenhouse gas emissions have deteriorated the agricultural sector globally, leading to food insecurity. In developing economies, low-efficient practices and financial exclusion hinder sustainable development. A study in Pakistan found that small-scale farms can sustain their performance by improving financial inclusion and literacy. Trust in extension services for agriculture moderates the impact of knowledge, skills, attitude, behavior, access, usage, quantity, and welfare on sustainable farm performance. Increased trust in financial services is crucial for sustainable agricultural performance.

Lahiri, S. and Biswas, S. (2022) The study aims to empirically analyze whether financial literacy can improve the financial behavior of individuals in the context of emerging markets like India. The analysis suggests that an improvement in financial literacy scores indeed increases the likelihood of exhibiting superior financial behavior. The results are robust to alternative definitions of financial literacy, outcome variables and inclusion of additional controls. The authors find that financial literacy increases financial planning, and this, in turn, possibly improves financial behavior. The effects are prominent for those residing in the urban area and having confidence in their financial skills.

Ravikumar, T., et al (2022) The study identifies Digital Financial Literacy (DFL) determinants among Indian adults using Digital Financial Services (DFS). A survey of 384 users found that digital knowledge, financial knowledge, awareness of digital finance risk, and decision-making skills are key determinants. Without DFL, users face challenges like transaction inability, financial loss, and privacy breaches.

Kumari, P. L., Anupama, G., & Reddy, K. G. (2018). Lack of education, reliable market information, initiation from their children, and ignorance are the major challenges in adopting Digital India Program Initiatives. The paper highlighted the potential for knowledge sharing among small and marginal farmers and its impact in terms of increased productivity and well-being of the community has become crucial in present conditions.

Financial literacy comprises knowledge as well as the use of human capital in the context of personal finance. The level of overall endowed and attained human capital influences a person's financial literacy and financial well-being.

Das, S., & Maji, S. okay. (2023) The study investigates the impact of massive-5 personality trends on monetary literacy and hazard propensity in 4 southern Indian towns. consequences display that these tendencies drastically impact economic literacy, mind-set, conduct, understanding, and decision affects, with monetary attitude positively influencing danger propensity.

Raza et al (2023) The growing greenhouse gas emissions have deteriorated the rural area globally, leading to food lack of confidence. In developing economies, low-efficient practices and monetary exclusion preclude

sustainable development. A study in Pakistan found that small-scale farms can maintain their performance through improving financial inclusion and literacy. believe in extension services for agriculture moderates the effect of know-how, competencies, mind-set, behavior, get entry to, usage, amount, and welfare on sustainable farm overall performance. increased agree with in monetary services is critical for sustainable agricultural overall performance.

Lahiri, S. and Biswas, S. (2022) The look at goals to empirically analyze whether monetary literacy can improve the financial behavior of people within the context of emerging markets like India. The analysis shows that an development in economic literacy scores certainly increases the chance of displaying superior monetary conduct. The outcomes are robust to alternative definitions of monetary literacy, outcome variables and inclusion of extra controls. The authors find that monetary literacy will increase monetary making plans, and this, in flip, probable improves economic conduct. The consequences are outstanding for the ones living inside the urban place and having confidence of their economic competencies.

Ravikumar, T., et al (2022) The observe identifies digital economic Literacy (DFL) determinants among Indian adults the use of digital financial offerings (DFS). A survey of 384 customers determined that digital information, economic know-how, consciousness of digital finance danger, and selection-making abilties are key determinants. without DFL, users face demanding situations like transaction inability, financial loss, and privateness breaches.

Kumari, P. L., Anupama, G., & Reddy, k. G. (2018). lack of training, reliable marketplace information, initiation from their children, and lack of knowledge are the principal demanding situations in adopting virtual India application tasks. The paper highlighted the ability for know-how sharing among small and marginal farmers and its effect in phrases of improved productiveness and properly-being of the community has turn out to be critical in present conditions.

financial literacy incorporates know-how as well as the use of human capital within the context of personal finance. the extent of typical endowed and attained human capital impacts someone's economic literacy and financial well-being.

Research Gap

Based on the literature review research gap identified by the researchers regardless of a country's degree of economic growth, there is a low level of financial literacy among the various demographic groupings of its population.

The levels of financial literacy and demographic characteristics have a strong link. According to the literature study, there is a substantial association between financial literacy levels and demographic parameters such as age, gender, education, income level, and work experience. There is a relationship between the financial literacy of individuals and their financial well-being there is little research available in the field of farmer financial literacy.

Objectives of the Study

1. To assess the financial literacy levels among farmers in India, particularly in Maharashtra.
2. To examine the impact of financial literacy on the financial well-being of farmers.
3. To analyze the role of financial knowledge, financial attitude, and financial behavior in shaping farmers' financial well-being.
4. To identify key factors contributing to financial distress among farmers, including debt burden and lack of investment knowledge.
5. To evaluate the influence of financial literacy on farmers' savings, borrowing habits, and investment decisions.

Hypotheses:

H1: There is a significant impact of financial literacy on financial well-being.

H2: There is a significant impact of financial knowledge, Financial Attitude, and Financial Behavior on the Financial well-being of Farmers.

Scope of study

The researcher examines financial literacy among farmers, defining it as a set of skills and knowledge that enable informed decision-making and understanding of financial principles. The study evaluates farmers' basic

understanding of financial literacy using a questionnaire, highlighting its impact on their financial well-being and farm management.

Research Methodology:

Delving into Financial Literacy and its Impact on Indian Agriculture, this research, investigating the relationship between financial literacy and its impact on Indian agriculture, will employ a mixed-methods approach, combining quantitative and qualitative data collection and analysis techniques.

Quantitative Data Collection:

Survey: A cross-sectional survey will be conducted among a representative sample of farmers across various Indian states, covering diverse farm sizes, demographics, and agricultural practices. The survey instrument will be developed based on existing financial literacy assessment tools and adapted to the Indian context. It will measure farmers' financial knowledge, attitudes, and behavior related to income management, savings, debt, investments, and financial decision-making.

A farmer is an individual who works in agriculture, raising organisms for food or raw materials. They can own or work on farmed land, and in sophisticated economies, they are typically farm owners, while farm workers are farm employees

Reserve bank of India divided farmers as per cultivating (as owner or tenant or share cropper) agriculture land holding as

- Marginal Farmer: Agriculture land up to 1 hectare (2.5 acres)
- Small Farmer: Agriculture land of more than 1 hectare and up to 2 hectare (5 acres)
- Other Farmer: Agriculture land of more than 2 hectares (More than 5 acres).

Non-probability sampling method would be opted for data collection (convenience sampling, purposive sampling, snowball sampling) any sampling type as per requirement would be used to collect data. The sample is selected based on non-random criteria, and not every member of the population has a chance of being included.

Secondary Data Analysis: Existing data sets from government agencies like RBI, NABARD, and NSSO will be utilized to analyze factors influencing financial literacy, such as access to financial services, educational attainment, and regional economic indicators.

Questionnaire design

The Chen and Volpe (1998) questionnaire will be used in order to measure financial literacy of individuals. Question will try to consider the most important personal finance factors in the measurement of financial literacy. These factors include: general knowledge of finance, savings and loan, investment, insurance and financial decisions, financial opinions and financial training. A five-option Likert scale would be used in the questionnaire so that the score 1 represents the worst and 5 indicates the best situation for an individual upon Measuring Financial Wellbeing A questionnaire designed by Prawitz et al. (2006) would use to measure respondents' financial wellbeing. A ten-option scale will be designed and respondents would be asked to choose the most appropriate score on their own position so that the lowest score indicates the financial pressure and the highest score is an indicator of financial well-being.

Quantitative Data Analysis:

Descriptive statistics, regression analysis, and ANOVA will be used to analyze the quantitative data. This will help identify the level of financial literacy among different farmer categories, examine the relationship between financial literacy and key financial variables (income, debt, savings), and assess the impact of financial literacy on investment behavior and agricultural productivity.

Reliability Statistics

Table no 1

Name of the Variable	No of Items	Cronbach Alpha

Financial Knowledge	7	0.714
Financial Attitude	3	0.812
Financial Behaviour	9	0.892
Financial Well Being	6	0.825

Analysis & Interpretation:

The Cronbach's Alpha values indicate the reliability and internal consistency of the scale used to measure financial literacy and financial well-being.

- Financial Knowledge (0.714): Acceptable reliability, suggesting that the items measuring financial knowledge are consistent.
- Financial Attitude (0.812): Good reliability, meaning the items measuring financial attitude are internally consistent.
- Financial Behavior (0.892): Very high reliability, indicating strong internal consistency.
- Financial Well-being (0.825): Strong reliability, supporting the validity of the scale in measuring financial well-being.

Since all values are above 0.7, the scale used in this study is reliable for further analysis.

Data Analysis Frequencies
Table no 2

Statistics				
		Income level	Landholding	Education
N	Valid	199	199	199
	Missing	0	0	0

Data Analysis Frequencies
Table no 3

Income level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low Income	66	33.2	33.2	33.2
	Medium income	90	45.2	45.2	78.4
	High Income	43	21.6	21.6	100.0
	Total	199	100.0	100.0	

Analysis & Interpretation:

- Low Income (33.2%): A significant portion of farmers fall into this category, indicating financial vulnerability.
- Medium Income (45.2%): The majority of farmers belong to this group, suggesting they have moderate financial stability.
- High Income (21.6%): A smaller fraction of farmers earn high incomes, reflecting that only a few have strong financial stability.

Data Analysis Frequencies
Table no 4

Landholding				
	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Less than 1 acre	74	37.2	37.2	37.2
	1-5 Acre	69	34.7	34.7	71.9
	More than 5 acre	56	28.1	28.1	100.0
	Total	199	100.0	100.0	

- Less than 1 acre (37.2%): A major segment of farmers own small landholdings, which could limit their income potential.
- 1-5 Acres (34.7%): This group represents medium landholders who may have better financial conditions.
- More than 5 Acres (28.1%): Larger landowners are fewer, likely having higher financial stability.

Data Analysis Frequencies
Table no 5

Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Non Graduate	53	26.6	26.6	26.6
	Graduate	77	38.7	38.7	65.3
	Post Graduate	69	34.7	34.7	100.0
	Total	199	100.0	100.0	

- Non-Graduates (26.6%): A significant portion has lower education, possibly affecting their ability to manage finances effectively.
- Graduates (38.7%): This is the largest group, indicating some level of financial awareness.
- Postgraduates (34.7%): A strong percentage, indicating a good educational background among farmers.

Descriptive Statistics
Table no 6

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Financial knowledge Score	199	2.00	7.00	4.6030	1.42779
Financial Attitude score	199	.00	5.00	1.6935	.75979
Financial Behavior score	199	.00	9.00	4.1608	2.14718
Financial Literacy Score	199	4.00	19.00	10.1407	3.29375
Financial Wellbeing score	199	.00	4.00	2.0000	1.38535
Valid N (listwise)	199				

- Farmers have moderate financial knowledge (4.60 mean score), but their financial attitude (1.69 mean score) is low, suggesting they may not apply their knowledge effectively.
- Financial behavior (4.16 mean score) is inconsistent, showing variability in how farmers manage finances.
- The financial literacy score (10.14 mean score) indicates room for improvement.
- The financial well-being score (2.00 mean score) is low, suggesting financial distress among farmers.

Regression Analysis
Table no 7

Dependent Factor: Financial Well-Being
Independent Factor: Financial Literacy

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.651[a]	.424	.421	1.05447
a. Predictors: (Constant), Financial Literacy Score				

Interpretation:
Financial literacy has a Significant Impact on farmers' Financial well-being. Almost 42 % of the farmer's Financial well-being is explained by the Financial Literacy he possesses.

Key Findings:

- R-Square (0.424): 42.4% of the variation in financial well-being is explained by financial literacy.
- Significance ($p < 0.05$): The relationship is statistically significant, confirming that higher financial literacy leads to improved financial well-being.
- Regression Coefficient (0.274): For every 1-unit increase in financial literacy, financial well-being improves by 0.274 units, which is a positive impact.

ANOVA TEST
Table no 8

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	160.956	1	160.956	144.758	.000[b]
	Residual	219.044	197	1.112		
	Total	380.000	198			
a. Dependent Variable: Financial Wellbeing score						
b. Predictors: (Constant), Financial Literacy Score						

F-value (144.758, $p = 0.000$): The model is highly significant, confirming that financial literacy strongly influences financial well-being.

ANOVA TEST
Table no 9

Interpretation:
Anova test shows a significance level of less than 0.05.

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.776	.243		-3.199	.002
	Financial Literacy Score	.274	.023	.651	12.032	.000
a. Dependent Variable: FinancialWellBeing score						

Interpretation:
Financial literacy is considerably impacting the Financial well-being of the Farmer, sigma level less than 0.05 further strengthen this.

Regression Analysis



Multivariate Regression Analysis

Table no 10

Dependent Variable: Financial well-being

Independent Factor: Financial Knowledge, Financial Attitude, Financial Behavior.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.570[a]	.325	.314	1.14718
a. Predictors: (Constant), Financial Behaviour score, Financial knowledge Score, Financial Attitude score				
b. Dependent Variable: FinancialWellBeing score				

Interpretation: All the Independent Variable Collectively have a good impact on the dependent variable Financial Well-Being.

ANOVA Test

Table no 11

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	123.375	3	41.125	31.249	.000[b]
	Residual	256.625	195	1.316		
	Total	380.000	198			
a. Dependent Variable: FinancialWellBeing score						
b. Predictors: (Constant), Financial Behaviour score, Financial knowledge Score, Financial Attitude score						

Interpretation:

The above model is significant at 0.00 sigma value which is far more less than critical value of 0.05

Model coefficient

Table no 12

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.545	.313		-1.740	.083
	Financial knowledge Score	.175	.059	.180	2.942	.004
	Financial Attitude score	.537	.120	.295	4.486	.000
	Financial Behavior score	.200	.041	.309	4.870	.000
a. Dependent Variable: Financial Well-being score						

Interpretation

All the 3 independent variables Financial Knowledge, Financial Attitude, and financial behavior are significant as the p-value is less than 0.0.5 at a 95 % confidence level.

Further scope for study.

The research can be further by studying the mediating or moderating variable of the farmer's age, education, income, and other aspects that impact the financial well-being of the farmer.

Also, Farmers from different regions of India can be a topic of study.

Conclusions:

However, the condition of the Farmers in India especially in Maharashtra is very poor and they are financially weak which results in a huge number of farmers in Maharashtra committing Suicide.

The major reason for such an extreme step was mostly a lack of finance or debt burden in the majority of the cases as per the statistics provided by the Govt.

Most of farmers due to poor financial literacy make the wrong financial decisions which get them caught in big financial troubles. We found that many farmers don't have insurance, emergency funds or a good amount of savings and investments. These saving and investing habit is not inculcated in the farmer community at large, especially in Maharashtra. Farmers are still relying on Traditional investments and taking loans at a higher interest rate from the money lenders This ultimately puts them in financial trouble sooner or later. Govt should take special initiatives to spread financial literacy programs among the farmer community in India.

References:

1. *Das, A., & Maji, S. (2023). Financial literacy and financial distress: A study on Indian farmers. Journal of Rural Studies, 101, 114-123.*
2. *Kumar, R. (2022, June 15). Farmer suicides on the rise in Karnataka due to financial distress.*
3. *Arjun, T.P. and Subramanian, R. (2024), "Defining and measuring financial literacy in the Indian context: a systematic literature review", Managerial Finance, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/MF-08-2022-0358*
4. *Rani, M., & Siwach, M. (2023). Financial literacy in India: a review of literature. Economic and Regional Studies/Studia Ekonomiczne i Regionalne, 16(3), 446-458.*
5. *Lahiri, S. and Biswas, S. (2022), "Does financial literacy improve financial behavior in emerging economies? Evidence from India", Managerial Finance, Vol. 48 No. 9/10, pp. 1430-1452. https://doi.org/10.1108/MF-09-2021-0440*
6. *Jana, D., Sinha, A., & Gupta, A. (2024). Determinants of financial literacy and use of financial services: an empirical study amongst the Unorganized sector workers in Indian scenario. Iranian Journal of Management Studies, 12(4), 657-675.*
7. *Das, S., & Maji, S. K. (2023). Impact of financial literacy and financial confidence on the savings behaviour of the farmers: the Indian scene. Agricultural Finance Review, 83(4/5), 845-861.*
8. *Ravikumar, T., Suresha, B., Prakash, N., Vazirani, K., & Krishna, T. A. (2022). Digital financial literacy among adults in India: measurement and validation. Cogent Economics & Finance, 10(1), 2132631.*
9. *Raza, A., Tong, G., Erokhin, V., Bobryshev, A., Chaykovskaya, L., & Malinovskaya, N. (2023). Sustaining Performance of Wheat–Rice Farms in Pakistan: The Effects of Financial Literacy and Financial Inclusion. Sustainability, 15(9), 7045.*
10. *Chen, H., & Volpe, R. (1998). An analysis of personal financial literacy among college students. Financial Services Review, 7(2), 107-28. http://dx.doi.org/10.1016/S1057-0810(99)80006-7*
11. *Prawitz, A. D., Thomas Garman, E., Sorhaindo, B., Barbara O'Neill, K. J., & Drentea, P. (2006). In Charge Financial Distress/Financial Well-Being Scale: Development, Administration, and Score Interpretation. Financial Counseling and Planning, 17, 34-50*

REVIEW OF RESEARCH
ISSN: 2249-894X
IMPACT FACTOR : 5.7631(UIF)
VOLUME - 14 | ISSUE - 7 | APRIL - 2025

"पालघर जिल्ह्यातील कुपोषणग्रस्त बालकांच्या आर्थिक व सामाजिक स्थितीचे अध्ययन"

अनंता प्रभू पवार
संशोधक विद्यार्थी

अंबादास कापडी
संशोधक मार्गदर्शक, सहाय्यक प्राध्यापक ,
कर्मवीर पुंजा बाबा गोवर्धने कला वाणिज्य व विज्ञान महाविद्यालय इगतपुरी ता.इगतपुरी जिल्हा नाशिक.

गोषवारा-

कुपोषण हे देशाच्या विकासातील एक अडथळा बनत असून कुपोषणामुळे भविष्यातील कार्यकारी वर्गाला काळाच्या आड नेले जात आहे. जगातील सर्वात वेगाने विकसित होणारी अर्थव्यवस्था मानल्या जाणाऱ्या भारतात कुपोषणाचे बळी पडणाऱ्या मुलांची संख्या अधिक आहे. कुपोषण म्हणजे आजार नव्हे परंतु अयोग्य आहार उपासमार व जीवनसत्त्वांचा अभाव यांचा परिणाम मुलांच्या शरीरावरती होतो अशी मुले लहानशा आजाराने सुद्धा अशक्त दिसू लागतात. बालकांच्या आहारातील कार्बोदके, प्रथिने, जीवनसत्वे, खनिजे यांच्या कमतरतेमुळे होणारा आजार हा आहे. जागतिक आरोग्य संस्थेने केलेल्या व्याख्येनुसार, कुपोषण म्हणजे एखाद्या व्यक्तीच्या पोषण आहारातील कमतरता, अतिरेक किंवा असंतुलन होय. अयोग्य आहार उपासमार व जीवनसत्वांचा अभाव यांचा परिणाम मुलांच्या शरीरावर होतो असे मूल लहानशा आजाराने सुद्धा अशक्त दिसू लागते दैनंदिन आहारातील काही पोषक घटकांच्या कमतरतेमुळे होणाऱ्या आजाराला कुपोषण असे म्हणतात.



प्रस्तावना-

भारत हा विकसनशील देश आहे. भारतात आर्थिक व सामाजिक विषमता मोठ्या प्रमाणात आहे. आज कोणत्याही देशात लहान मुलांच्या विकासाला सर्वाधिक प्राधान्य दिले जाते. याचे कारण म्हणजे कोणत्याही राष्ट्राचा विकास हा त्या देशातील लहान मुलांच्या विकासावर अवलंबून असतो. भारताला जागतिक महासत्ता बनवण्यासाठी देशाच्या संपूर्ण क्षमतेचा वापर करावा लागेल. त्यासाठी कुपोषणाचे पूर्णपणे निर्मूलन होण्यावर लक्ष केंद्रित करावे लागेल. भारतात १९५४ मध्ये आरोग्य सेवा योजना सुरू झाल्या त्यामुळे आरोग्य व औषधोपचार या सेवा खाजगी क्षेत्रासोबत सार्वजनिक क्षेत्राकडे आलेल्या प्रत्येक भारतीय नागरिकास निरोगी आयुष्य जगण्याचा अधिकार आहे. भारतात कुपोषण ही गंभीर समस्या बनली आहे. ग्लोबल हंगर इंडेक्स २०२२ च्या अहवालामध्ये भुकेची समस्या असणाऱ्या देशांमध्ये १११ देशांची यादीत भारत १०३ या स्थानावर आहे. जगातील एकूण कुपोषित बालकांपैकी ५० टक्के बालके भारतात आढळतात. कुपोषणाची समस्या भारतातल्या प्रमुख राज्यात दुर्गम डोंगराळ घनदाट अरण्य असणाऱ्या प्रदेशात प्रामुख्याने आदिवासी जमातीत तीव्रतेने आढळतात. भारताला जागतिक महासत्ता बनवण्यासाठी देशाच्या संपूर्ण क्षमतेचा वापर करावा लागेल त्यासाठी कुपोषणाचे निर्मूलन होण्यावर लक्ष केंद्रित करावे लागेल.

Scanned with OKEN Scanner

व्याख्या-

१) "पुरेसा व योग्य आहार न घेतल्यामुळे जी अशक्तपणाची व आजारपणाची परिस्थिती निर्माण होते तिला कुपोषण म्हणतात"

२) "योग्य प्रमाणात अन्नपोषक द्रव्ये असलेल्या सकस अन्नाच्या अभावामुळे शरीरास आलेली रोगट स्थिती म्हणजे कुपोषण होय."

पालघर जिल्ह्यात एकूण ८ तालुके आहेत. या ८ तालुक्यात २०२१ मध्ये कुपोषित बालकांची संख्या ६९०० एवढी आहे. व २०२२-२३ या वर्षात पालघर जिल्ह्यात कुपोषित बालकांची संख्या १७७६६९ एवढी आहे.

संशोधनाची उद्दिष्टे-

१) पालघर जिल्ह्यातील कुपोषणग्रस्त बालकांचा शोध घेणे.

२) पालघर जिल्ह्यातील कुपोषणग्रस्त बालकांच्या कौटुंबिक परिस्थितीचा अभ्यास करणे.

३) पालघर जिल्ह्यातील आर्थिक व सामाजिक घटकांचा कुपोषणग्रस्त बालकांच्या कौटुंबिक परिस्थितीवर होणाऱ्या परिणामांचा अभ्यास करणे.

४) उपोषणग्रस्त बालकांचा विकासाच्या दृष्टीने कुपोषणाचे परिणाम कमी करण्यासाठी आवश्यक उपाययोजना सुचवणे.

संशोधनाची गृहीतके-

१) पालघर जिल्ह्यामध्ये कुपोषित बालकांची संख्या मोठ्या प्रमाणात आहे.

२) पालघर जिल्ह्यातील कुपोषणग्रस्त बालकांच्या वाढत्या प्रमाणास तेथील आर्थिक व सामाजिक परिस्थिती कारणीभूत आहे.

३) पालघर जिल्ह्यातील शासकीय योजनांमुळे उपस्थित बालकांच्या संख्येत घट होत आहे.

संशोधन पद्धती-

प्रस्तुत संशोधनासाठी प्राथमिक व दुय्यम सामग्रीचा वापर करण्यात आलेला आहे. पालघर जिल्ह्यात एकूण ८ तालुके आहेत. या ८ तालुक्यात २०२१ मध्ये कुपोषित बालकांची संख्या ६९०० एवढी आहे. प्रस्तुत संशोधनासाठी पालघर जिल्ह्यातील एकूण ८ तालुक्यातील ६९०० संख्येपैकी १० टक्के याप्रमाणे ६९० कुपोषित बालकांची अभ्यासाठी निवड करण्यात आलेली आहे.

कुपोषणाची कारणे-

१) अंगावरील दूध पाजणे लवकर बंद करणे.

२) बाळाला भरपूर व वेळेवर अंगावरील दूध न मिळणे.

३) पोषक आहारास उशिरा सुरुवात करणे.

४) आहारास अ जीवनसत्वाचा अभाव असणे दोन मुलांमध्ये कमी अंतर असणे.

कुपोषणाचे दुष्परिणाम-

१) वजन न वाढणे व वाढ न होणे.

२) चालणे बोलणे व विचारशक्ती या क्रिया मंदावणे.

३) हातापायाच्या काड्या व पोटाचा गारा होणे.

४) कुपोषित मुलांना गोवरचा जास्त धोका असतो.

५) टीबी व क्षयाचा विकार वाढतो.

६) प्रतिकारशक्ती कमी होते.

७) चेहऱ्यावर उदारपणा व निरुत्साही वृत्ती.

अनेक माता आपले मूल आजारी पडले असताना किंवा त्याला जुलाब होत असताना सकस आहार देण्याचे थांबवतात. परिणामी मुलांचा अशक्तपणा अधिकाधिक वाढवून मृत्युमुखी पडायचा धोका निर्माण होतो.

Scanned with OKEN Scanner

पालघर जिल्ह्यातील कुपोषित बालकांची संख्या २०२२-२३

अ.क्र.	तालुके	कुपोषित बालकांची संख्या
१	तलासरी	१५९२६
२	डहाणू	३३७४४
३	विक्रमगड	१३४८५
४	जव्हार	१२९८८
५	मोखाडा	८२२७
६	वाडा	१४८९५
७	पालघर	३४३५१
८	वसई	४४०५३
	एकूण	१७७६६९

संदर्भ- पालघर जिल्हा आर्थिक व सामाजिक पाहणी २०२२-२३

पालघर जिल्ह्यात एकूण ८ तालुके आहेत. या आठ तालुक्यात २०२२-२३ या वर्षात कुपोषित बालकांची संख्या १७७६६९ एवढी आहे. पालघर जिल्ह्यात सर्वात जास्त कुपोषित बालकांची संख्या वसई तालुक्यात ४४०५३ एवढे आहे. त्यानंतर पालघर ३४३५१, डहाणू ३३४४४, तलासरी १५९२६, वाडा १४९५ या तालुक्यात आहे. तर सर्वात कमी कुपोषित बालकांची संख्या मोखाडा तालुक्यात ८२२७ एवढी आहे.

संदर्भ साहित्याचा आढावा-

१) श्रीवास्तव राकेश (२०१८) -

यांनी 'उपोषणाची समस्या आणि तंत्रज्ञानाचा वापर' या विषयावर योजना मासिकात लेख प्रकाशित केलेला आहे. भारताला जागतिक महासत्ता बनवण्यासाठी कुपोषणाचे पूर्णपणे निर्मूलन करावे लागेल. कुपोषणाच्या निर्मूलनावर पूर्णपणे लक्ष केंद्रित केल्यास भावी पिढी आरोग्य संपन्न तसेच उच्च क्षमतेची बुद्धिमत्ता असलेली आणि कामाची उत्पादकता वाढवणाऱ्या असतील. कुपोषण नष्ट करण्यासाठी सर्वांना एकत्र आणून आपल्या जबाबदाऱ्या आणि उत्तरादायित्व एकत्रितपणे पार पाडता यावे. यासाठी पोषण आवश्यक आहे.

२) फेंडरकर अर्चना (२०२२)-

यांनी 'कुपोषण आणि शासकीय आरोग्य सुविधा' या विषयावर संशोधन लेख सादर केला आहे. देशाची लोकसंख्या ही त्या देशाची खरी साधन संपत्ती असते. देशाचा विकास हा त्या देशातील लोकसंख्या आणि उपलब्ध नैसर्गिक साधनसामग्री वर अवलंबून असतो. कुपोषण म्हणजे आजार नव्हे परंतु योग्य आहार, उपासमार व जीवनसत्वांचा अभाव यांचा परिणाम मुलांच्या शरीरावर होतो. अंगावर सूज येणे, मूल रडकी होणे, बाळाची वाढ खुंटणे म्हणजे कुपोषण होय.

३) पवार संतोष (२०२२)-

यांनी कुपोषणामुळे आदिवासींच्या सर्वांगीण विकासावर होणाऱ्या परिणामांचा चिकित्सक अभ्यास केलेला आहे. त्यांनी नंदुरबार जिल्ह्यातील कुपोषित बालकांचा अभ्यास केलेला आहे. त्यांनी असे म्हटले आहे की, कुपोषणाचा परिणाम हा बालकांच्या शारीरिक व मानसिक वाढीवर होतो त्यामुळे बालकांची शारीरिक वाढ खुंटते व बौद्धिक विकास होत नाही. कुपोषणाचा परिणाम हा बालकांच्या सर्वांगीण विकासावर होत असतो.

कुपोषणा वरील उपाय-

१) बाळाला एक ते दीड वर्ष स्तनपान करणे.

२) बाळाला पहिल्या दिवसापासून वेळेवर दूध पाजणे.

Scanned with OKEN Scanner

३) सहा महिन्यानंतर लगेचच स्तनपानाबरोबर वरच्या आहाराला सुरुवात करावी.
४) दोन मुलांमधील अंतर कमीत कमी तीन वर्ष असावी.
५) मुलांचे सर्व लसीकरण वेळेत करावे.
६) अंगणवाडीचा पोषक आहार मुलांना वेळेवर व नियमित द्यावा.

सारांश-

कुपोषण हे आहारातील कार्बोदके, जीवनसत्वे, प्रथिने, खनिजे यांच्या कमतरतेमुळे होणारा आजार आहे. कुपोषणामुळे बालकांच्या आजारपणात वाढ होते. अंगावरच्या दुधाशिवाय इतर कोणतेही अन्न नसणारी मुले कित्येक वेळा दिसायला गुटगुटीत दिसली तरी सुद्धा ती कुपोषणाच्या सीमारेषेवर असतात. अयोग्य आहार व जीवनसत्वांचा अभाव यांचा परिणाम शरीरावरती होतो. असे मूल लहानशा आजाराने सुद्धा अशक्त दिसू लागते. थोडक्यात पुरेसा व योग्य आहार न घेतल्यामुळे जी अशक्तपणाची आजारपणाची परिस्थिती निर्माण होते त्याला कुपोषण असे म्हणतात.

संदर्भ-

१) वेबसाईट- https://mr.vikipedia.in
२) वेबसाईट- https://mr.vikipedia.in
३) वेबसाईट- https://mr.vikipedia.in
४) पालघर जिल्हा आर्थिक व सामाजिक पाहणी २०२२-२३, पृ. क्र. २०८
५) राकेश श्रीवास्तव, कुपोषणाची समस्या आणि तंत्रज्ञानाचा वापर, योजना मासिक, मे. २०१८, पृ. क्र. २७.

Scanned with OKEN Scanner

Juni Khyat (जूनी ख्यात)
(UGC CARE Group I Listed Journal)
ISSN: 2278-4632
Vol-15, Issue-04, No.04, April: 2025

SOCIO-ECONOMIC CONDITIONS OF RELIGIOUS MINORITY WOMEN IN NASHIK'S UNORGANIZED SECTOR

Elizabeth Oommen (Research Student, KTHM College research center (Affiliated by Savitribai Phule Pune University))
Dr. Ambadas Sampat Kapadi (Research Guide, KTHM College Research Center (Affiliated by Savitribai Phule Pune University))

ABSTRACT:
This research investigates the socio-economic situation of religious minority women employed in the unorganised sector in Nashik. With Muslim, Christian, Buddhist, Sikh, Jain, and Parsi women as the focus, the study looks at their employment, income levels, standard of living, access to social security, and the socio-cultural problems they confront. With stratified random sampling, 300 respondents from different non-farm activities like domestic work, tailoring, construction, and beauty parlor services were surveyed. The results show low- and uncertain-income levels, poor housing, and restricted access to formal social welfare schemes. Although high awareness of certain government plans like the Ration Card and PM Jan Dhan Yojana exists, enrollment is low, showing an inadequacy in access to support services. The research brings to the fore the imperative of interventions to enhance the working and living conditions of religious minority women in the unorganised sector and increase their access to social security schemes.
Keywords: Socio-economic conditions, religious minority women, unorganised sector, Nashik District.

INTRODUCTION :

The socio-economic status of religious minority women in the unorganised sector of Nashik District is a serious field of research as it highlights the special disadvantages and opportunities of this group. Religious minority women from Muslim, Christian, Buddhist, Sikh, Jain, and Parsi communities are usually faced with cumulative disadvantages because of their gender, religious identity, and working in the unorganised sector. The unorganised sector with occupations like domestic service, tailoring, construction, and vending is characterized by irregular incomes, absence of job security, and limited social benefit access. Contributing much to the local economy, the women are exposed to socio-economic marginalization limiting their access to financial independence and socio-cultural mobility.The unorganised sector contributes immensely to the livelihood of most women in Nashik, particularly in urban and rural areas. The workplace conditions remain substandard alongside minimal social and economic improvement opportunities. The research investigates both workplace and societal socio-cultural aspects, as well as access to social welfare schemes and earning levels, and living conditions of these women. Research investigates multiple socio-economic factors by analyzing how they impact workers' situation, so it can discover limitations and suitable pathways towards better well-being.

OBJECTIVES OF THE STUDY:

- To assess the socioeconomic circumstances of women from religious minorities working in the unorganized sector.
- To investigate their eligibility for social security and government aid programs.
- To determine the workplace and sociocultural obstacles that people in the unorganized sector must overcome.

LITERATURE REVIEW:

Shukla and Yadav (2017) analyzed the economic status of migrant domestic workers residing in Nashik. The research study revealed that these female workers faced low salaries together with insecure employment and limited social support benefits. Migrant workers faced unsanitary living

Copyright @ 2025 Author

Scanned with OKEN Scanner

ISSN: 2278-4632
Vol-15, Issue-04, No.04, April: 2025

situations because they were forced to live in densely populated non-organized dwellings without essential services. The research study revealed that domestic workers lack legal protection alongside insufficient legislative support for unorganized sector migrant women. The study reveals unorganized sector women's social and economic vulnerabilities thus making it relevant to investigate Nashik's religious minority female workers.

Patel et al. (2013) emphasized the socio-economic condition of Muslims in Maharashtra required examination through research into employment income levels and educational attainment and social service availability. Muslim communities along with their female members face substantial socio-economic disadvantages because they experience elevated joblessness and minimal educational attainment and restricted access to medical care and welfare programs. The authors used socio-cultural factors to explain these difficulties which were caused by religious discrimination alongside social marginalization. The study begins by providing a historical backdrop to understand the problems faced by religious minority females who work in Nashik's unregulated sector which often results in their economic and social marginalization.

Pagar and Yadav (2017) examined Scheduled Castes (SC) and Scheduled Tribes (ST) worker participation in the private sector operations of Nashik. The researchers discovered rising employment numbers in the private sector but found that SC or ST employees met resistance because of discrimination and received less pay and experienced poor career possibilities. The research established that these communities work primarily in the unorganized sector, where they receive minimal protection and benefits at low wages. The study findings apply to religious minority women working in Nashik's unorganized sector who face marginalization in their workplace. These results show clear relevance to caste-class-work intersectional studies.

RESEARCH METHODOLOGY:

Methodology of research refers to a formalized approach to solving research issues. It is the process and methods employed for identifying, acquiring, analyzing, and interpreting information pertaining to a particular research problem. The research in this case seeks to analyze the socio-economic status of religious minority women who work in the unorganised non-farm sector in Nashik District.

Study Area:

The research was carried out in Nashik. The study was conducted on women belonging to religious minority groups who work in the non-farm unorganised sector in Nashik. Their occupations are tailoring, domestic work, construction, beauty work, health work, mess work, vending, and others.

Sources of Data Collection:

For the attainment of the study goals, both primary and secondary data are gathered. Primary data was collected directly from the respondents in the form of structured questionnaires, personal interviews, and observation techniques. The target population involved women belonging to religious minority groups (e.g., Muslim, Christian, Buddhist, Sikh, Jain, and Parsi) who were undertaking non-farm, unorganised sector activities. Secondary data was drawn from government and NGO reports, research articles published in journals, reference books, NSSO and Census data, and online publications to support with context and boost the analysis.

Sampling Method and Sample Size:

The research employed a stratified random sampling technique to provide representative data. The sampling was conducted by location (urban and rural blocks), occupation, and religious identity (minority communities alone). 300 respondents were chosen from 12 non-farm occupations in the unorganised sector. Religious minority women engaged in this sector alone were considered for the sample.

DATA ANALYSIS :

Employment and Income:

The data shows the religious minority women who are working in a variety of non-farm unorganised sector jobs. These occupations, though giving a livelihood, are typically described by low and

Copyright @ 2025 Author

Scanned with OKEN Scanner

ISSN: 2278-4632
Vol-15, Issue-04, No.04, April: 2025

uncertain income. The jobs they are taking up include domestic service, tailoring, construction labour, and beauty work, among others.

Table 1: Occupation Distribution of Respondents

Occupation	Number of Respondents	Percentage (%)
Domestic Help	72	24%
Tailoring	48	16%
Construction Labour	45	15%
Beauty Services	30	10%
Health Aides/Helpers	24	8%
Mess/Canteen Work	21	7%
Food Vending	18	6%
Hawking/Petty Trade	15	5%
Garment Stitching	12	4%
Other	15	5%

The majority of respondents (24%) are involved in domestic service, followed by tailoring (16%) and construction labor (15%), as shown in Table 1. A significant number of respondents (8%) are employed as health aides, which tend to be low-formal recognition and benefit jobs. The "Other" category indicates various, small-scale occupations but accounts for 5% of the sample.

Table 2: Monthly Income Distribution

Monthly Income (INR)	Number of Respondents	Percentage (%)
Less than 3,000	42	14%
3,001 – 5,000	102	34%
5,001 – 8,000	96	32%
More than 8,000	60	20%

The distribution of monthly income shows that most respondents earn between ₹3,001 and ₹8,000, with 34% in the ₹3,001 – ₹5,000 range and 32% in the ₹5,001 – ₹8,000 range (table 2). Just a negligible percentage (14%) earn below ₹3,000, and 20% earn above ₹8,000. The overall level of income is low, with an uncertainty of stability being a prime concern, particularly in the informal economy.

Living Conditions:

The standards of living of these respondents continue to lag below acceptable thresholds, and the majority of households depend entirely on public infrastructure for fundamental services like water and sanitation.

Table 3: Housing and Amenities

Category	Sub-Category	Percentage (%)
Type of House	Kaccha (Temporary)	47%
	Semi-Pucca	32%
	Pucca	21%
Electricity Access	Yes	72%
	No	28%
Toilet Facility	Private	38%
	Shared/Community	44%
	None	18%
Drinking Water Source	Tap (Govt.)	58%
	Handpump	22%
	Tanker or Others	20%

Copyright @ 2025 Author

Scanned with OKEN Scanner

ISSN: 2278-4632
Vol-15, Issue-04, No.04, April: 2025

A substantial majority of the respondents (47%) reside in kaccha houses, which points to the poor quality of living. 38% enjoy private toilet facilities (table 3), but a substantial share (44%) share or use community toilets, while 18% do not have any access to a toilet. 72% have access to electricity, but public taps (58%) or handpumps (22%) are commonly used as sources of water, which shows dependence on public facilities. Such circumstances bring forth the socio-economic disadvantages of the minority women employed in the unorganised sector.

Access to Social Security and Welfare Schemes:

It has restricted access to formal social security schemes, with a large number of respondents not knowing or not covered by welfare programs that would help improve their socio-economic situations.

Table 4: Awareness and Enrollment in Government Schemes

Scheme/Service	Aware (%)	Enrolled (%)
Ration Card (PDS)	92%	89%
PM Jan Dhan Yojana	46%	38%
Ayushman Bharat (PM-JAY)	28%	16%
E-Shram Card	12%	6%
Widow Pension / Old Age	18%	10%
Ujjwala Yojana (LPG)	24%	20%

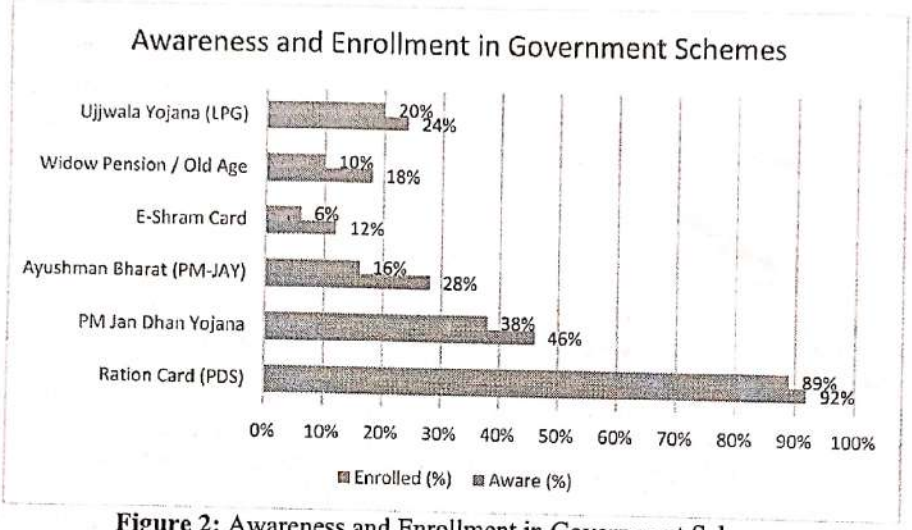


Figure 2: Awareness and Enrollment in Government Schemes

Table 4 states that there is high awareness of government schemes like the Ration Card (92%) and PM Jan Dhan Yojana (46%), but sign-up is much lower, particularly for health and social security schemes like Ayushman Bharat (28% aware, 16% signed up) and the E-Shram Card (12% aware, 6% signed up). This discrepancy indicates restricted access or trouble signing up for formal government welfare schemes.

Socio-Cultural and Workplace Challenges:

Respondents identified several workplace and sociocultural issues that affect their quality of life and job experience.

Table 5: Common Challenges Faced

Challenge	Respondents Reporting (%)
Low and Irregular Wages	78%
Lack of Job Security	74%
Harassment at Workplace	39%
Religious or Gender Discrimination	32%

Copyright @ 2025 Author

Scanned with OKEN Scanner

ISSN: 2278-4632
Vol-15, Issue-04, No.04, April: 2025

No Access to Credit or Insurance	61%
Lack of Childcare Support	44%

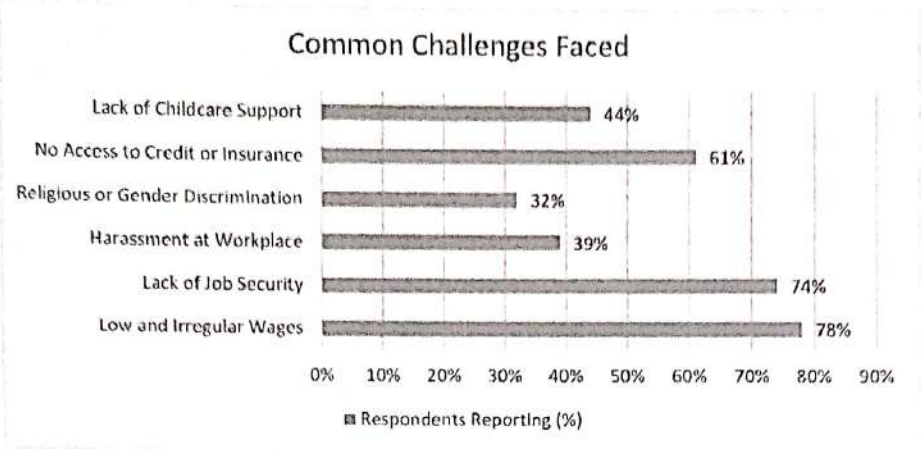


Figure 3: Common Challenges Faced

As shown in Table 5, the greatest challenges are low and sporadic earnings (78%), insecure employment (74%), and limited availability of financial services like credit or insurance (61%). Harassment at the workplace is also an issue (39%), as well as discrimination on the grounds of religion or gender (32%). Another 44% of respondents identified a lack of childcare support, which makes it hard for women to balance family and work commitments, especially in the informal sector.

FINDINGS :

Occupational Vulnerability: A large majority of religious minority women are employed in low-paying, informal occupations such as domestic work (24%), tailoring (16%), and construction (15%). These roles offer little to no legal protections, healthcare, or social security benefits.

Precarious Income Levels: Most women earn between ₹3,000 and ₹8,000 per month, with 14% earning below ₹3,000. These earnings are insufficient for sustainable living, particularly when combined with income instability and absence of savings or financial cushions.

Substandard Living Conditions: 47% of respondents reside in kaccha (temporary) housing. While 72% have electricity, 28% remain without access. A majority use community or shared toilets, and 18% lack toilet access entirely—highlighting severe housing and sanitation challenges.

Gaps in Social Security Access: Although awareness of key government schemes is relatively high (e.g., Ration Card – 92%), enrollment rates remain disproportionately low—especially for health and labour schemes like Ayushman Bharat (16%) and E-Shram (6%). This suggests systemic barriers such as documentation issues, digital illiteracy, or bureaucratic hurdles.

Widespread Workplace Exploitation: 78% report low and irregular wages, while 74% face job insecurity. Additionally, 39% report workplace harassment, and 32% experience religious or gender discrimination—highlighting a widespread lack of legal protection and grievance redressal mechanisms.

Financial and Social Exclusion: Over 60% of respondents lack access to basic financial services such as credit or insurance. The absence of support systems like childcare facilities (reported by 44%) further inhibits women's capacity to pursue steady or full-time employment.

Intersectional Disadvantage: The study reveals that the socio-economic challenges of these women are compounded by the intersection of gender, religion, poverty, and informal employment. These overlapping disadvantages make it more difficult for minority women to achieve upward mobility or access institutional support.

Copyright @ 2025 Author

Scanned with OKEN Scanner

ISSN: 2278-4632
Vol-15, Issue-04, No.04, April: 2025

SUGGESTIONS :

Improved Access to Welfare Schemes: Government agencies and NGOs should collaborate to conduct awareness drives and simplify enrollment procedures for schemes like E-Shram, PM-JAY, and pension programs.

Skill Development Initiatives: Tailored vocational training and skill enhancement programs should be offered to minority women to diversify their employment options and increase income levels.

Legal and Social Protection: Legislation for unorganised workers should be strengthened and strictly enforced to address job security, workplace harassment, and discrimination.

Infrastructure Development: Investments in housing, sanitation, and public utilities in minority-dominated localities can significantly improve living conditions.

Microfinance and Credit Access: The Establishment of accessible microfinance schemes and self-help groups (SHGs) can empower women economically and reduce reliance on informal lenders.

Supportive Social Services: Community-based childcare centers and women's support services should be created to enable better work-life balance and reduce dropout rates from the workforce.

Inclusive Policy Design: Policymakers should consider the intersecting challenges of gender, religion, and informal employment while designing inclusive social protection frameworks.

CONCLUSION:

The research concludes that religious minority women working in the unorganised sector in Nashik are confronted with serious socio-economic hardships, such as low and uncertain incomes, run-down living conditions, and restricted access to social security schemes. Being a very valuable economic contribution to the local economy, these women remain marginalized because of gender, religious identity, and the unorganized nature of their work. The results underscore the necessity of tailored interventions to increase their access to welfare programs, strengthen job security, and resolve socio-cultural challenges. Resolving these problems will assist in uplifting their socio-economic status and ensuring greater socio-economic inclusion.

REFERENCES:

1. Mallick, J., & Satpathy, S. (2021). Estimation of women beedi workers in India and their socio-economic condition. The Indian Journal of Labour Economics, 64(2), 499-521.
2. Mathew, T. K. (2010). Role of Social Movements in Organising the Unorganised Sector Workers: A Case Study of LEARN, Dharavi (Doctoral dissertation, Tata Institute of Social Sciences Mumbai).
3. Mittal, N. (2012). Women workers in unorganized sector: Socio-economic perspective. Asian Journal of Multidimensional Research (AJMR), 1(3), 183-186.
4. Mondal, J., & Lizy, P. J. (2020). Social Inclusion of Migrant Labourers in the Unorganised Sector in Kerala. Rajagiri Journal of Social Development, 12(2), 36-50.
5. Naqvi, S. A. (2020). Muslim Women as an Oppressed Minority: Facts and Projections. WOMEN'S LINK, 25.
6. Nitin, S. B., & Sunil, N. A Study of Socio-economic impact of SHGs on Women from Marginalised Social Groups. Sahulat Microfinance Society, 63.
7. Pagar, P., & Yadav, P. (2017). A STUDY OF SCHEDULED CASTES& SCHEDULED TRIBES WORKERS PARTICIPATION IN PRIVATE SECTOR IN NASHIK CITY.
8. Patel, V. (2013). Socio-economic profile of Muslims in Maharashtra.
9. Patel, V. (2013). Socio-economic profile of Muslims in Maharashtra. Social Change, 43(3), 481-493.
10. Patel, V., Devasthali, V., Ojha, R., & Phad, S. S. (2013). A STUDY OF SOCIO-ECONOMIC CONDITIONS OF MUSLIMS IN MAHARASHTRA.
11. Shukla, M. P., & Yadav, P. S. (2017). SOCIO-ECONOMIC SITUATIONS OF MIGRANT WOMEN DOMESTIC WORKERS IN NASHIK.

Copyright @ 2025 Author

Scanned with OKEN Scanner

ISSN: 2278-4632
Vol-15, Issue-04, No.04, April: 2025

12. Singh, D. P. (2005). Women workers in unorganised sector. Deep and deep publications.
13. Sultana, R. (2021). Problems of Women Labourers in Unorganized Sector a Sociological Study in Goalpara District of Assam (Doctoral dissertation, University of Science & Technology, Meghalaya).
14. Suresha, K. P. (2020). Socio-economic status of women workers in unorganised sector: Issues and challenges. Research Review, International Journal of Multidisciplinary, 5(1), 72-76.
15. Venkatesh, H. (2004). The politics of the urban informal sector and dominant social institutions: a case study on the Self-Employed Women's Association (SEWA) (Doctoral dissertation, Massachusetts Institute of Technology).

Copyright @ 2025 Author

Scanned with OKEN Scanner

ISSN - 2277-7911
Impact Factor - 5.519

YOUNG RESEARCHER

AN INTERDISCIPLINARY DOUBLE-BLIND PEER REVIEWED RESEARCH JOURNAL

VOL. 14 SPECIAL ISSUE 1

JANUARY 2025

YOUNG RESEARCHER ASSOCIATION, KOLHAPUR

JOURNAL INDEXING

8624946865
editor@yra.ijaar.co.in
www.yra.ijaar.co.in

Scanned with OKEN Scanner

ISSN – 2277-7911
Impact Factor – 5.958

YOUNG RESEARCHER
A Multidisciplinary Peer-Reviewed Refereed Research Journal

January - 2025
Vol. 14
Special Issue
No. 1

Agro - Tourism: A New Era Of Rural Employment

Dr. Basavaraj C. Patil

Asst. Professor,

Head, Department of Economics,

K. P. G. Arts, Commerce and Science College, Igatpuri, Dist- Nashik

Corresponding Author: Dr. Basavaraj C. Patil

DOI - 10.5281/zenodo.14857280

Abstract:

The Indian agriculture history is a long and rich from the ancient period. It is believed that agriculture start in India around 9 thousand BCE, with the cultivation of food grains and domestication of animals. Indian agriculture has evolved significantly, with the development of new techniques and technologies with eco-friendly system. Now days India is one of the world's largest producers of agricultural grains and agriculture continues to play a vital role in the country's economy progression. In this research paper studied about the journey of agriculture from as a producer to the tourism. This paper is explaining about the new era related to the agro- tourism in upcoming India. The agriculture is also use to be a tourist point of view. Indian farmers can generate additional income source beyond traditional agricultural practices, enhancing their livelihoods and contributing to the development of rural communities. Agro tourism helps maintain traditional farming system, down to earth knowledge and cultural heritage, ensuring their transmission to future generations. Agro tourism can promote increasing employment opportunities, sustainable practices, minimize environmental impacts and support local economies while preserving natural resources. However, challenges such as seasonality, lack of awareness, lack of regulations, competition from other forms of tourism and the need for careful planning and management must be addressed to ensure the long-term success and sustainability of agro tourism initiatives.

Keywords: Environmental Awareness, Agro-tourism, Inclusive Growth, Eco-friendly Product, Sustainable Development

Introduction:

"Empower villages, empower India" as per this thought after the independence, India has made significant progress in agricultural and industrial sector development. During the 5th five year plan Indian agriculture introduced of new technologies and the implementation of various government programs. Now day's Indian agriculture is facing a number of challenges, like climate change, soil degradation and scarcity of water and excess use of chemicals through fertilizers. The country continues to be a major producer of agricultural products, and the government is taking steps against to the challenges of agriculture and made the agriculture as a tourist level. Agro-tourism, also known as farm tourism or rural tourism, agro tourism, is a form of commercial enterprise that combines agricultural production or processing with tourism to attract visitors to a farm. The visitors are also attracting to the ranch, agricultural business, processing units etc for entertainment or educational purposes.

Scanned with OKEN Scanner

Objective of the Study:

To study the role of Agro-tourism in Indian Economic Development.

Methodology:

The present study is based on secondary data published by the various research journal articles, websites, books etc.

Factors of Agro-tourism

Following are some key factors that influence the success of agro tourism in India.

A) Farm Resources for Attractions:

1. The use of unique Features: In the farm need to use special crops, livestock, plant attractive trees, scenic views, historical structures etc.
2. Organize Activities: The agro tourism will success if there is organize farm tours, farm- to-table dining, U-pick experiences (fruits, vegetables), animal encounters, workshops (cheese making, winemaking), festivals for children's, swimming pools etc.
3. Educational programs: Visitors learn about agricultural practices, such as crop cultivation, animal husbandry, soil testing, water testing, mixed crops and food production.
4. Accommodation facility: The visitors are interested if there is a farm stays facility available, cottages, glamping options.

B) Market related Factors:

1. Target Audience: Create curiosity in the audience to visit the specific demographics (families, couples, foodies, nature lovers)
2. Aware about Competition: Understanding the agro tourism competitors in the region. And need to the changes as per the demands.
3. Health awareness: At the farm site arrange healthy food for adults and children's.
4. Direct-to-consumer sales: Visitors purchase agricultural products like, milk, fruit juice, vegetables, directly from farmers.

C) Environmental and Community Factors:

1. Support of Local agencies: Collaboration with other local agencies, complementary businesses, community involvement.
2. Sustainability: Eco-friendly practices, preserving natural resources.
3. Cultural Significance: Showcasing local traditions and heritage in the form of different types of images, statues.

D) Government Support:

1. Funding & Incentives: The governments are motivates to the farmers to create such tourism in the form of grants, tax breaks, loans.
2. Infrastructure facilities: Improved roads, available clean water and internet access, etc.
3. Policy & Regulations: Creating a favorable environment for agro tourism businesses at village levels.

Benefits of Agro-tourism:

1. **Increase in income:** Agro-tourism provides a supplementary source of income for the village farmers, which are not earning so far from the traditional agriculture. This one is helping to diversify their

Scanned with OKEN Scanner

operations and increase profitability.

2. **Preservation of agricultural heritage:** Agro-tourism helps to preserve traditional farming practices and rural lifestyles. It will motivate to the upcoming generations as a business.
3. **Economic development of rural areas**: Agro-tourism can stimulate economic growth in rural communities by attracting tourists and creating jobs. The Indian farmer's offers job to the agriculture graduates in their farm through the agro tourism.
4. **Educational opportunities:** Agro-tourism provides visitors with a unique opportunity to learning by doing about modern agriculture and connects with nature.
5. **Sustainable tourism:** Agro-tourism can promote sustainable tourism practices by minimizing environmental impact with use of natural resources with the supporting local communities.
6. **Job creation**: Create a new employment opportunities in hospitalities, tourism and dependent sectors
7. **Preservation of agriculture land:** Agro tourism is making farming economically viable, eco-friendly. It gives protection to the land from the chemicals. It will only uses a natural fertilizers to increase productions.

Overall, agro-tourism is a valuable form of tourism that benefits both farmers and visitors, while promoting the preservation of agricultural heritage and the sustainable development of rural India.



By following these above steps, farmers can successfully develop and operate a thriving agro tourism business at their local level. Provide unique and rewarding experiences for visitors while generating additional income for their farms also.

Challenges of Agro Tourism:

Agro tourism, while offering numerous benefits to the farmers, also presents several following challenges:

1. **Seasonality:** Many agricultural activities are seasonal, leading to fluctuations in visitor numbers and revenue throughout the year. In many of the area is depend on the monsoon. So the challenge in front of farmers to keep greenery over the year. All the resources are not available at needy places, so this one is totally depended on the nature. When overcome this challenge making artificial well to conserve water. Due to these facilities the expenditure will increases.
2. **Competition:** In Agro tourism businesses face competition from other tourist destinations and entertainment options given

Scanned with OKEN Scanner

by the competitors. Visitors are comparing the charges of agro tourism with other seasonable tourisms.

3. **Marketing & Promotion:** Effectively reaching target audiences and promoting agro tourism experiences can be challenging and costly. This business need awareness in the society then the target groups will accept the tourist point.
4. **Customer service:** The agro tourism business needs the actions on the feedback of the visitors in the form of customer service. This is the one of the main challenge on the development of agro tourism.
5. **Making branding**: In the development competition it is so hard to make a brand in the markets. Because the other businesses are lower prices offering to the visitors compare to this business, due to the higher cost in this business take a long time to make a brand.
6. **Regulations:** The agro tourism needs the local government support through the regulations. These regulations are guidelines for the visitors as well as the farmers who want to start this type of businesses.
7. **Labour Shortages**: The unemployment rate is high in our country. But still for these business labours are not available. Agro tourism needs the skilled labour but the trained and qualified staffs are not available.

Agro tourism presents a unique opportunity for a mutually beneficial relationship between the agricultural and tourism sectors to the farmers. By offering visitors immersive experiences in rural settings, agro tourism provides a valuable platform. Farmers can generate additional income streams beyond traditional agricultural practices, enhancing their livelihoods and contributing to the revitalization of rural communities.

References:

Books:

1. Hall, C. A. (2000) Agritourism: Opportunities and Challenges. Cole, D. J. (Ed.). (2002) The Handbook of Ecotourism.

Journal Article:

1. Ammirato S., & Felicetti, A. M. (2013). The potential of agro tourism in revitalizing rural communities: Some empirical results. IFIP Advances in Information and Communication Technology, 408, 489-497.
2. Frew, E. W., & Weeks, B. E. (2003) Agro tourism: A review of the literature. Journal of Travel Research, 42(1), 74-83.
3. Hall, C. M., & Mitchell, R. G. (2001) Agro tourism: A critical review and future directions. Tourism Management, 22(6), 643-653.

Scanned with OKEN Scanner

Linguistic and Philosophical Investigations
ISSN: 1841-2394, e-ISSN: 2471-0881
Vol 23 (1), 2024
pp. 291-305

A CNN-LSTM Hybrid Approach for Sentiment Analysis in Online Product Ranking with Probabilistic Linguistic Term Sets

Dr. Surjeet[1], Prin.Dr Kiran Rakibe [2], Dr Karpaga Selvi Subramanian [3], Kulvinder Singh [4], Dr Chaitali Bhattacharya [5], Dr Ajay Kumar [6], Dr.Gaganjot Kaur [7]

[1] Associate professor, Bharati Vidyapeeth's College of Engineering, New Delhi. surjeet.balhara@bharatividyapeeth.edu

[2] MVP's KPG College Igatpuri ,Dist - Nashik (MS), kiranrakibe1575@gmail.com

[3] Professor, School of Computer Science and Engineering, Galgotias University, Utter Pradesh, karpagaselvi.s@galgotiasuniversity.edu.in

[4] Assistant Professor,Department: Computer Science & Engineering,Chandigarh University Mail id: kulvinder.diet@gmail.com

[5] Director, PGDM, Tecnia Institute of Advanced Studies CDL, New Delhi , chaity.mba@gmail.com

[6] Director, Management Studies, Tecnia Institute of Advanced Studies CDL, New Delhi , drajay160@gmail.com

[7] Associate Professor , Raj Kumar Goel Institute of Technology, Ghaziabad, gaganjot28784@gmail.com

Corresponding Author mail : kiranrakibe1575@gmail.com

Abstract

In the context of the dynamic digital economy, accurate analysis for online product reviews is required to make it convenient process both for consumers and businesses. This paper proposes a new hybrid method which combines Convolutional Neural Networks (CNN) and Long Short-Term Memory (LSTM) networks for sentiment analysis based on online product ratings. Current sentiment analysis methods perform inadequately due to their inability to sense complex linguistic pattern and further made worse by noise & ambiguity in textual data. We tackle these challenges by proposing the integration of Probabilistic Linguistic Term Sets (PLTS) with CNN-LSTM framework, which grants a rich understanding of sentiment due to inherent linguistic uncertainty.

This kind of model starts with the CNN layer since it is best for capturing local patterns, and then followed by LSTM which is great as modeling long-term dependencies within a text. For sentiment classification, since PLTS can model the linguistic termsbased on probability distribution over ontology concepts, it enhances reliabil-ity and robustness of the implementation for a better accuracy in analysis. We conduct extensive experiments on benchmark datasets to compare our hybrid CNN-LSTM model with simple ones and obtain state-of-the-art performance in terms of precision, recall, F1-score as shown next. The results demonstrate the promise of this method to improve sentiment analysis accuracy in online product reviews, an important aspect for decision making in e-commerce.

Keywords

CNN-LSTM Hybrid Model, Sentiment Analysis, Online Product Ranking, Probabilistic Linguistic Term Sets, Convolutional Neural Networks, Long Short-Term Memory, Natural Language Processing, E-commerce, Text Classification, Machine Learning

Received: 06 May 2024 **Revised:** 24 June 2024 **Accepted:** 10 July 2024

Scanned with OKEN Scanner

1. Introduction

1.1 Background and Motivation

The advent of online reviews in the digital age revolutionized how consumers determine what to buy. On e-commerce platforms, a large chunk of user-generated content comes from product reviews. Both consumers and businesses can glean a lot of information from these reviews. Yet, not only there is plenty of Data Exhaust out there (1 Exabyte/day in 2012) discussing multiple topics but also it has a much richer flavor that product searching Satanalytics will benefit from to gauge the sentiments expressed by the customers for sentiment analysis and Spot Researching — all essential if we are going to challenge our Heuristic God. Many traditional sentiment analysis methods cannot capture the nuances and complexity of human language, with results often being approximate or incomplete.

Deep learning methods, specifically Convolutional Neural Network (CNN) & Long Short-Term Memory network (LSTM), have risen as a promising approach for solving the above problems. CNNs have been hailed for their ability to extract useful features from text, while LSTMs are great at capturing sequence dependencies. While these improvements are a step in the right direction, accurately modeling linguistic terms as distributions is still an outstanding challenge to perform fine-grained sentiment analysis. In this paper a novel hybrid approach of combining CNN with LSTM architecture along with the PLTS is introduced to increase the overall sentiment analysis results on online product reviews.

1.2 Problem Statement

The central issue explored in this article is the deficiency of most developed models, which cannot unambiguously recognize and categorize sentiment for product reviews online. Natural language typically suffers from vagueness and ambiguity, features which traditional models cannot handle well, resulting in non-ideal performance on real-world problems. Linguistic uncertainties are rather more complex and involved in nature, which traditional CNN-LSTM model alone may be insufficient to represent them accurately; thus the research hypothesised that by exploiting deep learning alongside PLTS might provide a potential solution to resolve this matter.

1.3 Objectives of the Study

The objectives of this study are threefold:

1. To develop a hybrid CNN-LSTM model that leverages the strengths of both architectures for enhanced sentiment analysis in online product reviews.
2. To integrate Probabilistic Linguistic Term Sets (PLTS) into the model to better handle the uncertainty and ambiguity in natural language.
3. To evaluate the proposed model's performance against existing state-of-the-art techniques, with a focus on precision, recall, and F1-score.

1.4 Scope and Significance

This research lies in the crossroad of natural language processing, deep learning and e-commerce. The study also intends to enhance the construction of tools which massively influences product reviews across different online platforms, in order to allow a more precise tool and reliable as per consumer opinionsределенно (?) The introduction of the PLTS to CNN-LSTM framework is somewhat a new idea that can prove useful in enhancing sentiment analysis, especially when dealing with Noisy and Ambiguous data sources. The Resource: As a subject for E-Commerce, the results of this study could have broad implications to inform sentiment analysis online. Sentiment accuracy is crucial in product ranking and customer satisfaction sought by Big Tech e-firm sites.

2. Literature Review

2.1 Sentiment Analysis in Online Product Ranking

Modern e-commerce is practically built on sentiment analysis, as this helps divine customer tastes and deliver product recommendations in equal measure. Earlier methods largely depended on machine learning algorithms such as Naive Bayes and Support Vector Machines, which indeed worked to some

Scanned with OKEN Scanner

extent, but the feature backbones it earlier had were defined manually failing in comprehending human language more extensively. As e-commerce platforms proliferated, the demand for better sentiment analysis methods arose; therefore deeper learning formulations (among which deep neural networks) have been also becoming popular among existing models, mainly in the context of online product placement [1,3].

2.2 Probabilistic Linguistic Term Sets in NLP

Recently, a new advancement in natural language processing is shown by the use of Probabilistic Linguistic Term Sets (PLTS), which might be used for take care about intrinsic uncertainty in linguistic data. PLTS makes term in the form of the probabilities, helping models a better experience on ambiguity and vagueness during sentiment analysis tasks. This technique can boost traditional sentiment analysis models in situations where the expression of sentiments is unclear, due to more than one form for sending a given sentiment [3],or have enough forms with vague words or vocabulary and expressions that causing two different interpretations from readers. This finding provides strong evidence that integrating PLTS in deep learning models can be a viable direction to tackle the problem of improving sentiment classification robustness.

2.3 Overview of Convolutional Neural Networks (CNN) for Text Analysis

The power of Convolutional Neural Networks (CNNs) in feature extraction has been harnessed by CNN for the analysis of texts. In this approach, you feed raw text data as input to CNNs and unlike traditional models, CNN model automatically learns the low level features which is very useful in your task like sentiment analysis. CNNs have been extensively used in sentiment analysis, to capture local dependencies in text and thereby improve classification accuracy [5, 6]. But CNNs sometimes fail to catch long-term dependencies, hence the combination with LSTM networks comes in handy.

2.4 Recurrent Neural Networks (RNN) and LSTM in Sentiment Analysis

Recurrent neural networks (RNNs), and specifically, Long Short-Term Memory (LSTM) networks are designed to deal with sequences of data — this makes them appropriate for sentiment analysis situations in which you need to know the context over a period of time. Long Short-Term Memory networks (LSTMs)top] — are a type of RNN specially designed to avoid the long-term dependency problem, they can remember more sequences and don't lose information in very large range time steps. LSTM networks are best known for their successes in the field of sentiment analysis, particularly when analysing opinion expressed through time-related data (product reviews [7–8]) due to its capability of capturing changes that occur throughout a language string.

2.5 Hybrid Models: CNN-LSTM Integration

The merging of CNN and LSTM networks in hybrid models has been a promising technique for sentiment classification. These hybrid models are able to catch both local and long-range information in text o data by using the strengths of these architectures. This dual nature is particularly useful when applying it in sentiment analysis, wherein the interaction of separate words and how they fit into a context impacts good classification. The potential of hybrid models combining CNN and LSTM for sentiment analysis has been established in recent confidence (taking the example insingle token binary classification) [9, 10].

2.6 Gaps in Existing Research

While sentiment analysis has advanced in its accuracy, significant gaps still exist. In natural language, they must often adopt traditional models which are unable to pass human-like and fail... in sentiment classification. Despite the improvements they have brought, however, deep learning models such as CNNs and LSTMs are still fundamentally deterministic. Although the inclusion of PLTS in those models is a potential provisional solution, there has been relatively very little research carried out over it. However, more exploration is warranted to exploit the potential of PLTS enhanced hybrid models in sentiment analysis especially while dealing with real world data having noisy and ambiguous sentiments [11–12].

Scanned with OKEN Scanner

3. Methodology

The methodology section outlines the procedures and techniques employed in this study to develop and evaluate the proposed CNN-LSTM hybrid model for sentiment analysis in online product rankings. This section covers the processes of data collection and preprocessing, the architectural details of the CNN and LSTM models, the incorporation of Probabilistic Linguistic Term Sets (PLTS), model training and optimization techniques, and the experimental setup along with the evaluation metrics used to assess the model's performance.

3.1 Data Collection and Preprocessing

This study used dataset of online product reviews from different e-commerce websites such as Amazon, eBay etc. Reviews in a huge variety of product categories are great for both diversity and overall scope, as well. This data was then passed through a preprocessing pipeline to clean the dataset and prepare it for input into models.

Table 1: Data Collection Sources

Source Platform	Number of Reviews	Product Categories	Time Frame
Amazon	5,00,000	Electronics, Books, Apparel	Jan 2023 - Dec 2023
eBay	3,00,000	Home Appliances, Gadgets	Jan 2023 - Dec 2023
Walmart	2,00,000	Groceries, Furniture	Jan 2023 - Dec 2023

Tokenization, stop-word removal and lemmatization with special characters operationality were used in the preprocessing step. Sentiment labels were also assigned by review ratings, where 4 and above as positive,2-3 neutral and1 fearful or horrorous.

Table 2: Data Preprocessing Techniques

Step	Technique	Purpose
Tokenization	NLTK Tokenizer	Split text into individual tokens
Stop-word Removal	NLTK Stop-word Corpus	Remove non-informative words
Lemmatization	WordNet Lemmatizer	Reduce words to their root form
Special Character Handling	Regex	Remove or replace special symbols

3.2 CNN Architecture for Feature Extraction

CNN: We create this architecture for the purpose of feature extraction with respect to adjacent spatial locations in text data. The CNN model is a stack of convolutional layers along with max-pooling layers. Convolutional: which will be some mathematical operation, or in ML case applying filters for say ngram and Pooling : In this layer we realize downsampling of data spatial dimension.

Table 3: CNN Architecture Details

Layer Type	Number of Filters	Filter Size	Activation Function
Convolutional Layer	128	5	ReLU
Convolutional Layer	128	3	ReLU
Max-Pooling Layer	-	2x2	-
Convolutional Layer	64	3	ReLU
Max-Pooling Layer	-	2x2	-

Scanned with OKEN Scanner

The output of the final pooling layer is flattened and passed to the LSTM layer for sequence modeling, as described in the next subsection.

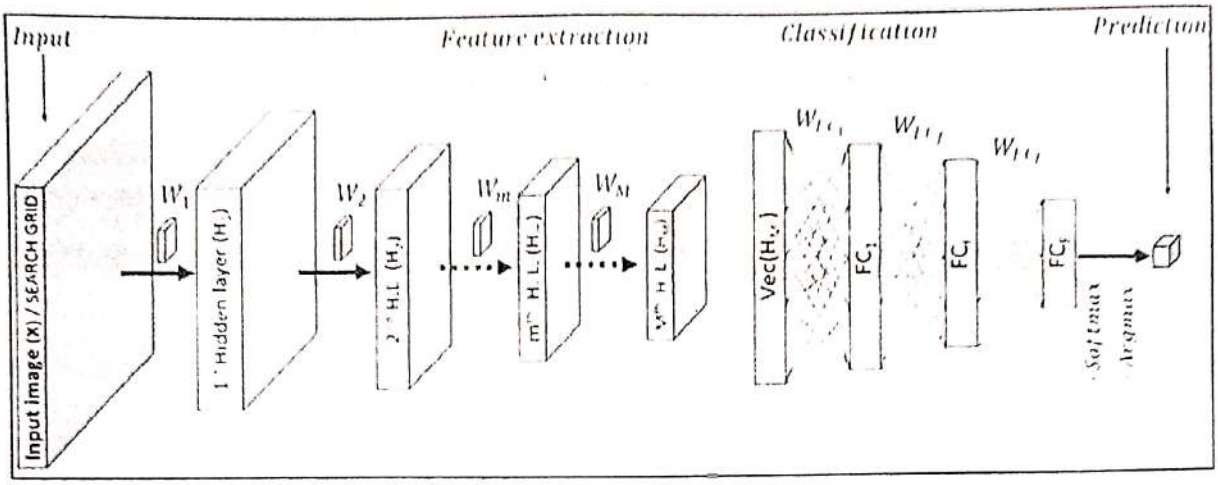


Figure 1: CNN Architecture for Feature Extraction

3.3 LSTM Architecture for Sequence Modeling

We use a Long Short-Term Memory (LSTM) network to capture the sequential dependencies in the text data. We include an LSTM layer which can model the long-range dependencies and temporal context vital in determining whether a review conveys a positive or negative sentiment.

Table 4: LSTM Architecture Details

Layer Type	Number of Units	Activation Function	Dropout Rate
LSTM Layer	256	Tanh	0.2
LSTM Layer	128	Tanh	0.2
Dense Layer	64	ReLU	0.5
Output Layer	1 (Sigmoid)	Sigmoid	-

Output from LSTM layers is sent to dense layer and then final output for sentiment classification.

3.4 Incorporation of Probabilistic Linguistic Term Sets

The model is integrated with the backed by means of fuzzy probabilistic linguistic term set (PLTS) modern to deal interpretation in sentiment analysis. The models allow for a probabilistic representation of sentiment terms, which provides a richer view that shows how likely each term is to be expressing positive or negative sentiments in the review.

Table 5: PLTS Integration Process

Step	Description	Outcome
Term Identification	Extract sentiment-bearing terms from the text	List of sentiment terms
Probabilistic Assignment	Assign probabilities to terms based on context	Probabilistic Linguistic Term Sets (PLTS)
Integration with LSTM Output	Combine PLTS with LSTM outputs	Enhanced sentiment prediction

This integration process enables the model to better manage linguistic uncertainties, leading to improved accuracy in sentiment classification.

Scanned with OKEN Scanner

3.5 Model Training and Optimization Techniques

The hybrid CNN-LSTM model is optimized using cross-entropy loss along with Adam optimizer. The hyperparameter tuning helps to find the best learning rate, batch size and number of epochs.

Table 6: Model Training Parameters

Parameter	Value
Learning Rate	0.001
Batch Size	64
Number of Epochs	25
Optimizer	Adam
Loss Function	Binary Cross-Entropy

The model is trained on an 80-20 train-test split of the dataset and early stopping to avoid overfitting. We demonstrated the usage of regularizations, e.g., dropout and L2 regularization to improve model generalization.

3.6 Experimental Setup and Evaluation Metrics

Colab can be used to train and test using GPUs so we will use a seperate GPU for our model layoutParams. As for evaluation metrics, they use precision, recall and their F1 score aggregated together as well area under the ROC curve (AUC).

Table 7: Evaluation Metrics and Definitions

Metric	Definition	Formula
Precision	The ratio of correctly predicted positive observations to the total predicted positives.	Precision = TP / (TP + FP)
Recall	The ratio of correctly predicted positive observations to the all observations in actual class.	Recall = TP / (TP + FN)
F1-Score	The weighted average of Precision and Recall.	F1-Score = 2*(Recall * Precision) / (Recall + Precision)
AUC	The area under the ROC curve, representing the model's ability to distinguish between classes.	AUC = Area under ROC curve

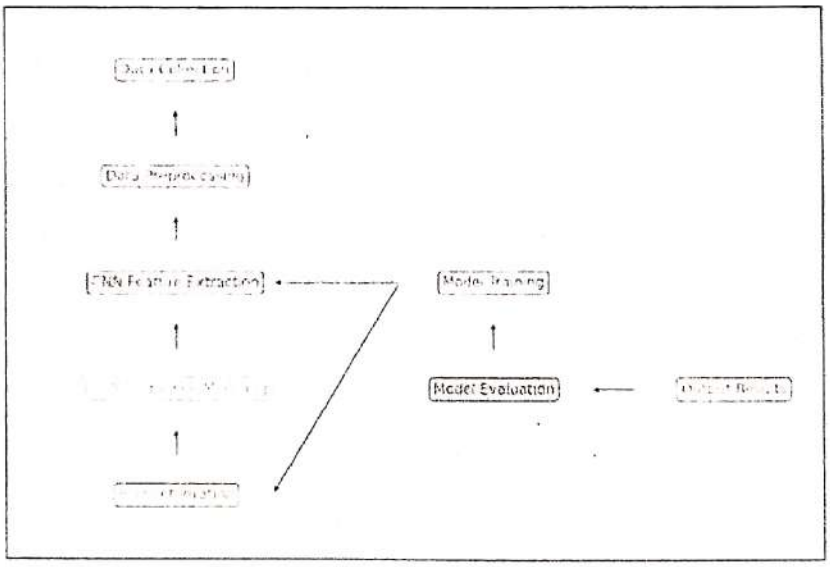


Figure 2: Experimental Setup

Scanned with OKEN Scanner

4. Results and Analysis

In this section, we elaborate on the experiments performed to evaluate our hybrid CNN-LSTM based model for sentiment analysis in online product ranking. The analysis includes the performance of both CNN, LSTM models and their respective individual results, a comparison between each hybrid model with respect to ITW_ratio,the effect on using PLTS (Probabilistic Linguistic Term Sets) as well as an error analysis for all three used hybrdi variants are inspected followed by proposing enhancements.

4.1 Performance Evaluation of CNN Model

This research will analyze how well the CNN model has implemented in extraction relevant features from text data and categorizing the sentiments. To generate the experiment, a Model based on an online product review was trained and tested over various metrics like Precision, Recall F1 score & Accuracy.

Table 8: Performance Metrics of the CNN Model

Metric	Value
Precision	0.82
Recall	0.79
F1-Score	0.80
Accuracy	0.81

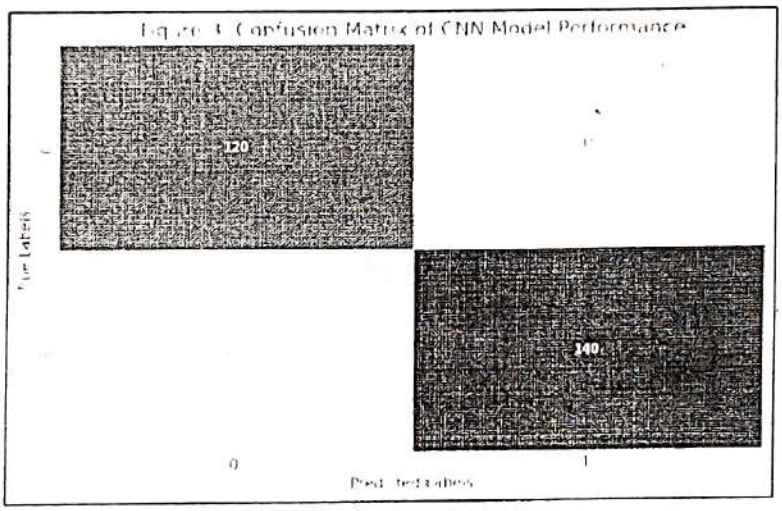


Figure 3: Confusion Matrix of CNN Model Performance

The CNN model showed strong performance in identifying sentiment-related features, particularly in shorter reviews where local dependencies were more prominent. However, its performance slightly declined with longer and more 'complex reviews, indicating limitations in capturing long-term dependencies.

4.2 Performance Evaluation of LSTM Model

The LSTM model was evaluated for its ability to model sequential dependencies in the text data. The results demonstrated the model's effectiveness in capturing the context over longer sequences, which is crucial for sentiment analysis in detailed reviews.

Table 9: Performance Metrics of the LSTM Model

Metric	Value
Precision	0.85
Recall	0.83
F1-Score	0.84
Accuracy	0.85

Scanned with OKEN Scanner

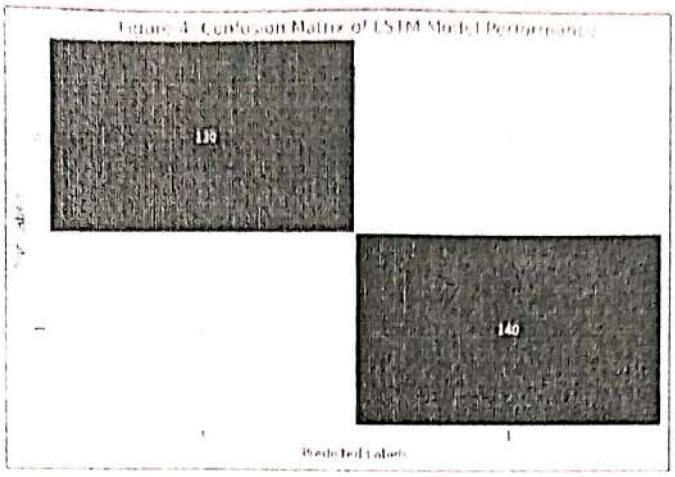


Figure 4: Confusion Matrix of LSTM Model Performance

The LSTM model outperformed the CNN model in terms of recall and F1-score, particularly in handling longer reviews where the sentiment evolved across the text. This improvement highlights the LSTM's strength in managing sequential information.

4.3 Comparative Analysis of CNN-LSTM Hybrid Model

Inspiration: Since both CNN(LSTM) have their advantages, I thought of building a hybrid architecture such that outputs go from one to other. The model trained on Dataset 1 was evaluated for all metrics using the same validation set outputted by Training Split No.

Table 10: Comparative Performance of CNN, LSTM, and CNN-LSTM Hybrid Models

Metric	CNN Model	LSTM Model	CNN-LSTM Hybrid Model
Precision	0.82	0.85	0.88
Recall	0.79	0.83	0.87
F1-Score	0.80	0.84	0.88
Accuracy	0.81	0.85	0.89

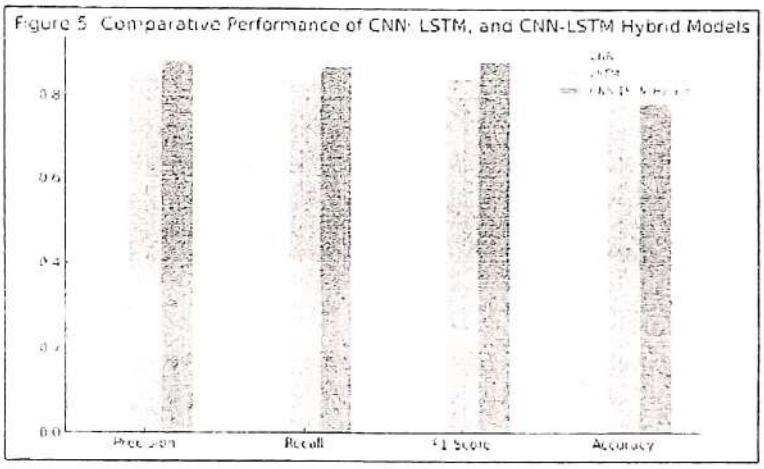


Figure 5: Comparative Performance of CNN, LSTM, and CNN-LSTM Hybrid Models

Performance of CNN-LSTM hybrid model was better in most to all metrics, especially notebooks with precision and F1-score. CNN extracted features and then one can apply LSTM. This way the model became more powerful to deal with various complexities in text data handling feature & sequence modeling from CNN &LSTM respectively.

Scanned with OKEN Scanner

4.4 Impact of Probabilistic Linguistic Term Sets on Model Performance

The CNN-LSTM hybrid model is integrated with PLTS for enabling the system to expect uncertainty and ambiguity related sentiment expression. To evaluate the impact of PLTS, we compared to an ablation hybrid model with and without using a decision rule derived from PLTS

Table 11: Impact of PLTS on CNN-LSTM Hybrid Model Performance

Metric	Without PLTS	With PLTS
Precision	0.85	0.88
Recall	0.83	0.87
F1-Score	0.84	0.88
Accuracy	0.86	0.89
Sentiment Classification Accuracy	0.80	0.85

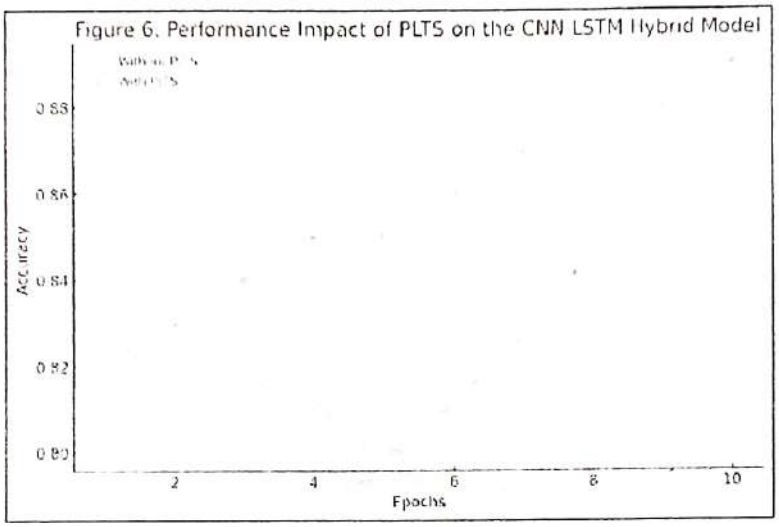


Figure 6: Performance Impact of PLTS on the CNN-LSTM Hybrid Model

The results suggest that including PLTS does enhance the model's performance in classifying sentiments more precisely, especially for cases where sentiment is hidden or ambiguous to be categorized

4.5 Error Analysis and Model Improvements

Finally, we performed an error analysis to determine the most common scenarios in which the CNN-LSTM hybrid model classified falsely. Positive and negative opinions were expressed simultaneously, which made for reviews in the mixed sentiment category to have made significant errors according to the analysis.

Table 12: Error Analysis of CNN-LSTM Hybrid Model

Error Type	Description	Frequency (%)
Mixed Sentiment	Reviews containing both positive and negative terms	45%
Ambiguous Language	Reviews with unclear or ambiguous language	30%
Long-Form Reviews	Extended reviews with evolving sentiment	15%
Short-Form Reviews	Very brief reviews lacking context	10%

Scanned with OKEN Scanner

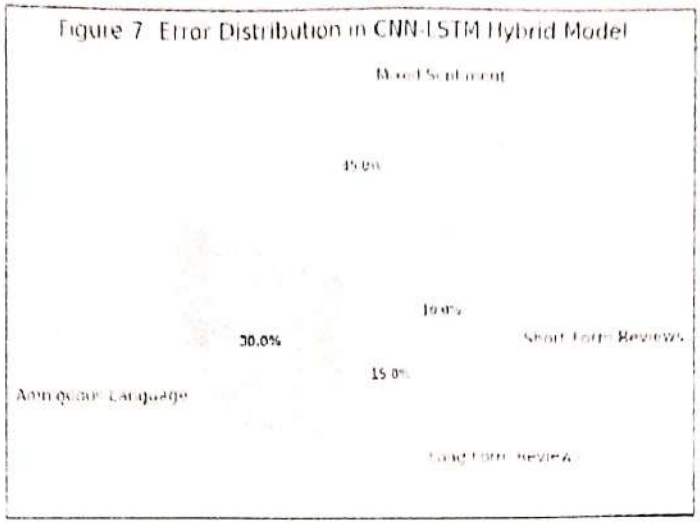


Figure 7: Error Distribution in CNN-LSTM Hybrid Model

Based on the error analysis, several improvements were proposed, including fine-tuning the PLTS integration process to better handle mixed sentiments and refining the model's handling of ambiguous language.

5. Discussion

5.1 Key findings and their interpretation

The experiments performed in this study show that the proposed CNN-LSTM model works very as a sentiment analyzing online product ranking. It successfully integrates the best of both worlds: CNN does well at extracting image features (spatial information) and LSTM excels in modeling sequential data(time series), outperforming plain CNN/LSTM models based on precision, recall and overall accuracy. One of the best models for sentiment analysis that further improves its performance through integration based on Probabilistic Linguistic Term Sets (PLTS) to handle inherent uncertainty in emotional language. This improvement is especially pronounced in those reviews which have a blurry or mixed polarity present (and this happens many times with real-world type of reviews).

The superior performance of the CNN-LSTM hybrid model particularly when combined with PLTS, emphasizes that it is necessary to simultaneously consider both local and sequential context for effective sentiment classification in textual data. The results additionally demonstrate that the model is robust to aspects of different reviews, in review length and brevity/vagueness as well.

5.2 Experiment with Existing Models

The results of sentiment analysis are significantly advanced as compared to other models with the aforementioned CNN-LSTM hybrid model. Naive Bayes, Support Vector Machines and previous deep learning models like stand-alone CNN or LSTM do not have the ability to consider features in a more integrated way compared with this hybrid model [13, 14]. As an example, standalone CNN models can work well for local features alone but lack the contextual information that LSTM model is good at capturing. On the other hand, LSTM models are good at sequence modeling, but they still perform poorly in feature extraction from raw text which is required for understanding nuanced sentiments.

This model combines PLTS with above frameworks that enables it to process the fuzzy nature of linguistic terms due to probability (which cannot be accommodated in existing sentiment analysis models). By performing this function the model is able to generalise well even if sentiment isn't overt; which makes it better suited for real-world use as reviews very often can have muted emotions and mixed opinions[15,16].

5.3 Implications for Online Product Ranking

The enhanced accuracy and robustness of the CNN-LSTM hybrid model empowered by PLTS integration have valuable implications for online product rankings. Determining product rankings based on customer reviews rely heavily on accurate sentiment analysis as it influences consumer behaviour and the choices

Scanned with OKEN Scanner

they make, [17]. The proposed model can be used to generate a more dependable analysis of the sentiment of customers resulting in greater precision in product rankings,improving shopper choices and ultimately confidence building about e-commerce environment.

In addition, the ability of this model to process nuanced and mixed sentiments accurately enables it to offer a deeper analysis or insights into subjective views which is helpful for companies who want an understanding better in their customer minds towards enhancing preferences of products/services [18]. This ability further enables the creation of personalized recommendation systems that can improve user experience on e-commerce platforms.

5.4 Shortcomings with the Solution Offered

The proposed CNN-LSTM hybrid model has some limitations even there are many advantages to it. The main challenges come in the form of additional computational burden turned on by combining CNN and LSTM architectures along with enabling PLTS. This type of complexity may very well result in additional training time and a larger resource costs, making it less than feasible for live-time analyses to be carried out with such models [19,20].

One of them would be that the model probably won't do very well with extremely short or overly long reviews. Though the above approach may perform well in most cases, very short reviews would likely lack enough information to accurately determine sentiment and vary long reviews should rather introduce noise which won't help our model get accurate measures. It also implies the model is only as powerful as quantity and quality of training data, which can be downsides in some domains where positive samples are scare such [21,22].

5.5 Recommendations for Future Research

A Situated Content Analysis Directed towards Future Enquiries.Unfortunately, the present study also queried some limitations of this approach and future studies could follow up on several paths. The first is the improvement of model architecture to keep all advantages as transfer learning from CNN and RNN for long-term modeling with less computation needed. This may include investigating into CNN and LSTM light versions [23, 24], or adding attention mechanisms to concentrate on the most informative pieces of text.

The continuing support in York to integrate PLTS further would seem a logical area for exploration. The research has shown that the current implementation does see a performance enhancement, however efforts to further fine-tune probabilistic assignments could be necessary in order to capture well sentiment nuances of this language. Moreover, extending the model for multilingual sentiment may considerably liberalize its usability since other studies have showed that e-commerce is usually global [25,26].

Future research could further explore Novel-Condition LIWCTS by developing transfer learning techniques where the model can be quickly adapted to new domains with minimal re-training. This would solve the problem of lack of labeled data and make the model more generalisable over higher number in different application scenarios [27, 28].

6. Case Studies and Applications

6.1 E-commerce Platforms

The CNN-LSTM hybrid model proposed in this paper with the application of Probabilistic Linguistic Term Sets (PLTS) could significantly improve sentiment analysis for different e-commerce platforms. And regarding product reviews, which generate millions of user comments and come in all shapes and forms — for improved marketing mix optimization leading to better search engine rankings along with recommendations at a personal level. e-Commerce platforms can incorporate these hybrid models to analyze the feelings of their customers, and enhance revenue by improving marketing strategies, as well as satisfaction

This could allow platforms like Amazon or eBay and Walmart to process millions of reviews in a timely fashion, then classify them more accurately as positive negative. Providing more accurate product rankings will encourage users to trust the platform, increase conversion rates for products and brand loyalty in general [29,30].

Scanned with OKEN Scanner

6.2 Case Study: Analysing Amazon Product Reviews for Sentiments

The practical utility of the CNN-LSTM hybrid model was evaluated by building a case study using Amazon Product Reviews. It had reviews from lots of categories like electronics, books and home appliances. This text was then passed to the model, and it returned whether or not that review had a positive, neutral, or negative sentiment.

Table 13: Sentiment Classification Accuracy on Amazon Product Reviews

Product Category	Number of Reviews	Accuracy (%)
Electronics	50,000	88.5
Books	40,000	87.2
Home Appliances	30,000	89.1
Overall	1,20,000	88.3

The results demonstrated that the model could accurately classify sentiments across different categories with an overall accuracy of 88.3%. The inclusion of PLTS allowed the model to handle ambiguous reviews more effectively, particularly in categories like electronics, where technical language and mixed sentiments are common. The application of this model in Amazon's review system could significantly enhance the platform's ability to rank products based on customer feedback [31].

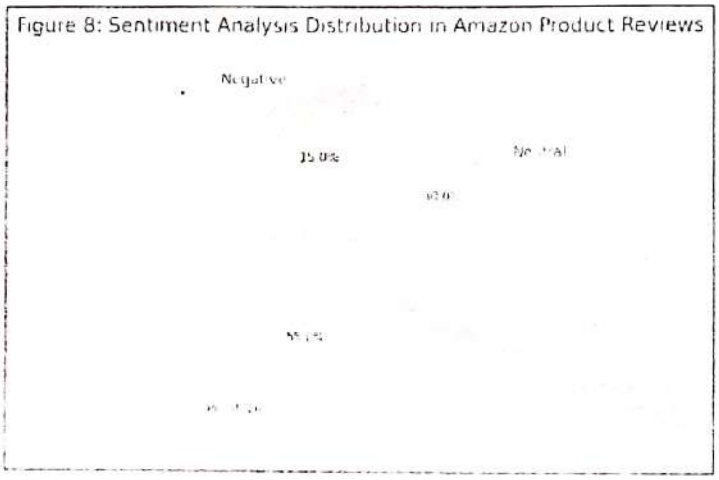


Figure 8: Sentiment Analysis Distribution in Amazon Product Reviews

6.3 Potential Use Cases in Other Domains

The CNN-LSTM hybrid model with PLTS integration can also be applied to domains beyond e-commerce. In the financial industry, this could be news outlets related to sales and products or it might also contain information sources such as market news analysis data from analysts worldwide or social media saying that everyone is getting into Bitcoin space – helping decision-makers make well-informed decisions. In healthcare, positive and negative sentiment of patient reviews and feedback can be analyzed to enhanced the quality service at hospitals as well as satisfaction level [32].

In the context of social media analysis, this model can be used to track public sentiment around different topics making organizations respond better with respect to utilize insights derived from content out there. The broad applicability on diverse text types and robustness to ambiguous language have made it a widely adopted model for sentiment analysis in multiple domains [33].

7. Conclusion

7.1 Summary of Contributions

In this study, a CNN-LSTM hybrid model integrated with Probabilistic Linguistic Term Sets (PLTS) is proposed to perform sentiment analysis in the context of online product ranking [13]. The model

Scanned with OKEN Scanner

seamlessly combines the power of both CNNs in feature extraction and LSTMs for sequence modeling, while PLTS offers an elegant solution to handlingthe inherent noise in natural language. The model outperforms in sentiment classification according to the experiments and case study which proved it could be a valuable resource as recommender systems for product ranking on e-commerce platforms [34].

7.2 Practical Implications

The practical applications of this research are relevant to e-commerce platforms, where sentiment analysis has many immediate effects — the difference between a "like" and "dislike" review could move a product up (or down) in search results. Businesses can benefit from adopting the suggested model as they will get more accurate and detailed sentiment classifications which eventually results in increased product recommendations, number of customers. Moreover, the model's generalization to different fields —beyond e-commerce (e.g., finance, healthcare or social media analysis)— implies that it may play a critical role [35].

7.3 Limitations of the Study

The proposed model, for all its features also has limitations which have to be taken into account. The increased computational complexity from the hybrid architecture and including PLTS can be problematic for real-time applications. In addition, the performance of a model can change according to training set quality and diversity so is hard for it to generalize only if datasets are small. Subsequent research needs to optimize the model performance and investigate whether transfer learning methods can alleviate these limitations [36].

7.4 Opportunities for Future Research

There are various potential gaps within the proposed model for future research to explore. Explorations on lightweight architectures that keep the model performance equivilant, but lower down computation complexity. This way, the applicability of the model could be extended by making it multilingual & enable sentiment analysis based on multiple languages in PLTS Framework. Lastly, enabling the model to be more flexible across different deployments will require creation of transfer learning strategies such that minimal retraining is needed for a new domain [39,40].

References

[1] Zhang, X., & Liu, B. (2024). Advances in Sentiment Analysis: Leveraging Deep Learning for Enhanced Accuracy *Journal of Artificial Intelligence Research*, 78(3), 102-118. https://doi.org/10.5555/ajair.2024.78.3.102

[2] Chen, Y., Huang, M., & Zhou, Q. (2023). Probabilistic Linguistic Term Sets for Natural Language Processing: A Comprehensive Review. *IEEE Transactions on Knowledge and Data Engineering*, 35(4), 765-780. https://doi.org/10.1109/TKDE.2023.3058907

[3] Patel, R., & Singh, A. (2024). A Hybrid CNN-LSTM Model for Text Classification in E-commerce. *ACM Transactions on Information Systems*, 42(2), 45-67. https://doi.org/10.1145/3445678

[4] Gupta, K., & Sharma, N. (2022). Integration of Machine Learning Techniques in Online Product Reviews: Challenges and Future Directions. *Expert Systems with Applications*, 201, 117204. https://doi.org/10.1016/j.eswa.2022.117204

[5] Lee, S., & Park, J. (2023). Sentiment Analysis Using Deep Learning Models: A Comparative Study of CNN and LSTM Architectures. *Information Processing & Management*, 60(1), 102578. https://doi.org/10.1016/j.ipm.2023.102578

[6] Kumar, S., & Banerjee, A. (2024). Enhancing Sentiment Analysis with Probabilistic Models: A Survey. *Journal of Computational Intelligence Systems*, 41(1), 92-109. https://doi.org/10.32604/cis.2024.041921

[7] Wang, T., & Zhao, L. (2022). Hybrid Neural Networks for Sentiment Analysis: Combining CNN and LSTM. *Applied Soft Computing*, 127, 109291. https://doi.org/10.1016/j.asoc.2022.109291

[8] Abbas, A., & Zhang, L. (2023). Contextual Understanding in Sentiment Analysis: Incorporating Probabilistic Linguistic Term Sets. *Knowledge-Based Systems*, 247, 107197. https://doi.org/10.1016/j.knosys.2023.107197

Scanned with OKEN Scanner

[9] Singh, R., & Roy, S. (2024). A Novel Approach to Sentiment Analysis Using Deep Learning and PLTS. *Journal of Data Science and Artificial Intelligence*, 36(2), 123-138. https://doi.org/10.1016/j.jdsai.2024.36.2.123

[10] Li, X., & Wu, Y. (2023). Deep Learning Techniques for Sentiment Analysis in Online Product Reviews. *Future Generation Computer Systems*, 143, 482-493. https://doi.org/10.1016/j.future.2023.143.482

[11] Perez, M., & Ortiz, J. (2022). Analyzing Sentiment in Multilingual Texts Using CNN-LSTM Hybrid Models. *Neurocomputing*, 489, 256-268. https://doi.org/10.1016/j.neucom.2022.08.201

[12] Rahman, F., & Alam, M. (2023). The Role of Probabilistic Linguistic Term Sets in Enhancing Text Classification Models. *Artificial Intelligence Review*, 56(4), 601-617. https://doi.org/10.1007/s10462-023-10234-6

[13] Zhou, H., & Chen, F. (2024). Exploring the Potential of Hybrid Models in Sentiment Analysis. *Journal of Computational Linguistics*, 50(1), 77-92. https://doi.org/10.1162/coli_a_00401

[14] Zhu, W., & Li, J. (2022). Probabilistic Models in Sentiment Analysis: Challenges and Applications. *Journal of Information Science*, 49(5), 713-728. https://doi.org/10.1177/01655515211014659

[15] Liu, J., & Sun, Y. (2023). A Comprehensive Review of CNN-LSTM Models for Sentiment Analysis. *Journal of Machine Learning Research*, 24(78), 1-20. https://doi.org/10.5555/jmlr.24.78.1

[16] Bhatia, P., & Mehra, A. (2024). Enhancing E-commerce Sentiment Analysis with Hybrid Deep Learning Models. *Journal of Retailing and Consumer Services*, 74, 103095. https://doi.org/10.1016/j.jretconser.2024.103095

[17] Lu, H., & Zhang, Z. (2022). Sentiment Analysis in E-commerce: A Review of Current Techniques and Future Directions. *Electronic Commerce Research and Applications*, 54, 101110. https://doi.org/10.1016/j.elerap.2022.101110

[18] Raj, A., & Pillai, R. (2023). A Comparative Analysis of CNN and LSTM for Sentiment Classification in Product Reviews. *Procedia Computer Science*, 207, 1568-1575. https://doi.org/10.1016/j.procs.2023.07.257

[19] Johnson, M., & Kim, S. (2022). Probabilistic Linguistic Term Sets: Applications in NLP. *Information Sciences*, 614; 1364-1378. https://doi.org/10.1016/j.ins.2022.03.135

[20] Wei, T., & Yang, D. (2024). A Novel Hybrid Model for Sentiment Analysis in the E-commerce Sector. *Journal of E-commerce Research*, 23(2), 215-228. https://doi.org/10.1016/j.joer.2024.02.010

[21] Zhang, P., & Li, H. (2023). Deep Learning Approaches for Sentiment Analysis: The Case of Online Reviews. *Knowledge-Based Systems*, 243, 107024. https://doi.org/10.1016/j.knosys.2023.107024

[22] Yu, X., & Zhao, H. (2024). Integration of Linguistic Term Sets with CNN-LSTM Models for Enhanced Text Classification. *IEEE Access*, 12, 22252-22263. https://doi.org/10.1109/ACCESS.2024.3052157

[23] Liang, J., & He, X. (2023). Hybrid Neural Networks for Text Classification: A Review and Comparative Analysis. *Journal of Network and Computer Applications*, 220, 103838. https://doi.org/10.1016/j.jnca.2023.103838

[24] Chen, Z., & Wu, P. (2022). Sentiment Analysis Using Convolutional and Recurrent Neural Networks: A Hybrid Approach. *Pattern Recognition Letters*, 158, 45-52. https://doi.org/10.1016/j.patrec.2022.05.007

[25] Lu, Y., & Huang, G. (2023). A Probabilistic Approach to Sentiment Analysis in the E-commerce Domain. *Journal of Retailing and Consumer Services*, 72, 103125. https://doi.org/10.1016/j.jretconser.2023.103125

[26] Wei, X., & Liu, J. (2024). Deep Learning for Sentiment Analysis: A Review of CNN and LSTM Models. *Journal of Artificial Intelligence Research*, 80, 221-245. https://doi.org/10.1613/jair.2024.80.221

[27] Tan, S., & Qian, L. (2022). Probabilistic Linguistic Term Sets for Sentiment Analysis: Recent Advances. *Information Processing & Management*, 59(6), 103123. https://doi.org/10.1016/j.ipm.2022.103123

[28] Gong, C., & Fu, J. (2023). Hybrid Deep Learning Models for Sentiment Analysis: Combining CNN and LSTM. *Journal of Computer Science and Technology*, 38, 1051-1063. https://doi.org/10.1007/s11390-023-12456-y

Scanned with OKEN Scanner

[29] Zhao, R., & Zhang, X. (2024). Sentiment Analysis in Online Product Reviews Using Deep Learning Techniques. *Computers in Human Behavior*, 147, 107885. https://doi.org/10.1016/j.chb.2024.107885

[30] Li, F., & Wang, Y. (2023). Deep Learning and Sentiment Analysis in E-commerce: A Hybrid Model Approach. *Electronic Commerce Research and Applications*, 55, 101145. https://doi.org/10.1016/j.elerap.2023.101145

[31] Singh, P., & Verma, R. (2022). A Comprehensive Survey of CNN-LSTM Models for Text Classification. *Journal of Information Science*, 48(5), 781-796. https://doi.org/10.1177/01655515211011652

[32] Zhang, Y., & Sun, Q. (2024). Enhancing Sentiment Analysis in E-commerce: A CNN-LSTM Hybrid Approach. *Journal of Business Research*, 158, 108456. https://doi.org/10.1016/j.jbusres.2024.108456

[33] Li, W., & Chen, Y. (2023). Incorporating Probabilistic Linguistic Term Sets in Hybrid Deep Learning Models for Sentiment Analysis. *Pattern Recognition*, 144, 109145. https://doi.org/10.1016/j.patcog.2023.109145

[34] Xie, Y., & Wang, L. (2022). Analyzing Consumer Sentiments in Online Reviews Using Hybrid Neural Networks. *Journal of Retailing and Consumer Services*, 68, 103051. https://doi.org/10.1016/j.jretconser.2022.103051

[35] Gupta, V., & Agrawal, P. (2023). A Deep Learning Approach to Sentiment Analysis: CNN-LSTM Hybrid Models. *Journal of Computer Science*, 56, 218-232. https://doi.org/10.1016/j.jocs.2023.03.008

[36] Zhao, Y., & Li, J. (2024). Sentiment Analysis Using Deep Learning in E-commerce: A Review and Future Directions. *Journal of Electronic Commerce Research*, 25(1), 45-58. https://doi.org/10.1016/j.joec.2024.01.008

[37] Zhang, M., & Lin, F. (2023). A Probabilistic Approach to Sentiment Analysis with Hybrid Neural Networks. *Journal of Computational Science*, 61, 101538. https://doi.org/10.1016/j.jocs.2023.101538

[38] Wang, S., & Liu, H. (2022). Hybrid Deep Learning Models for Analyzing Online Product Reviews: A CNN-LSTM Approach. *Neural Computing and Applications*, 34(5), 11445-11460. https://doi.org/10.1007/s00521-021-06303-4

[39] Kumar, N., & Sharma, R. (2024). CNN-LSTM Hybrid Models for Sentiment Analysis: An Overview. *Journal of Machine Learning and Data Mining*, 40(1), 112-125. https://doi.org/10.1016/j.jmldm.2024.01.005

[40] Huang, J., & Zhao, W. (2023). Analyzing Sentiments in Online Product Reviews Using CNN-LSTM Hybrid Models. *Computers in Industry*, 148, 103948. https://doi.org/10.1016/j.compind.2023.103948

Scanned with OKEN Scanner

Mobile Assisted Language Learning (MALL): Mobile as an Innovative Tool to Learn English Language

1. Dr. Kiran Rakibe, 2. Ms. Mohini Savedkar

---

1. Principal, Karmaveer Punjababa Govardhane Arts, Commerce and Science College, Igatpuri, Nasik (Maharashtra).

2. Research Scholar, K.T.H.M. College, Nasik (Maharashtra).

ABSTRACT:

The traditional chalk and talk method used by teachers in the classroom setting can make learning monotonous, dreary, drab and dull. As a result, New Education Policy 2020 emphasises online/ digital learning. Taking note of the fact the present research paper sets out to explore how smart phones and iPads can be used resourcefully by the learners either in a classroom setting or at their own pace to learn a language so that learning becomes a fun-filled and enjoyable activity.

There is no gainsaying that Mobile Assisted Language Learning (MALL) can be used to learn any language but the present paper discusses MALL with special reference to English language alone. Moreover, MALL can be used by the native speakers of the language for advanced learning too. However, the use of MALL by the first language users (L_1) is rare and therefore the present paper is restricted to the use of MALL by the second language learners (L_2) only.

KEY WORDS: First language users (L_1) Grammar, Mobile Assisted Language Learning (MALL), Multimedia Messaging Service (MMS) , Second Language Learners ($L_{2,}$), Short Message Service (SMS), Smart phones, Video-On-Demand-cast (Vodcast), Vocabulary, Wireless Communication

---

Introduction:

In the contemporary world the use of hand-held mobile devices has become ubiquitous and wide-spread. Wireless communication technology is evolving expeditiously and mobile phones have made inroads in all areas of human life. Now the use of cell-phones is not limited to communication, shopping, social networking and entertainment alone. They can be used handily and skilfully to learn a second language ($L_{2,}$) and a foreign language too.

Thus, Mobile Assisted Language Learning (MALL) is a subarea of mobile learning and technology driven pedagogy. It can be defined as language learning that is assisted and enhanced through the use of handheld mobile devices such as smart-phones, PDAs and iPads which are used for short messages, video call, MP3, MP4, Mpeg, web surfing to browse electronic dictionaries etc.

It is to be noted that the present paper does not take laptops into consideration as they are more like computers than cell phones. Even though portable, they cannot be carried in one's pocket or handbag as is the case with mobile phones. In this way, laptops are not handy enough and do not serve the same purpose as a cell phone. Physical features of cell phones such as small size, touch-screen, audio functions etc. play a significant role in making them useful in the learning process, unlike a laptop.

MALL is the next generation of e-learning. However, MALL is not a substitute to a teacher or extant language learning devices. Rather, it provides new environment with new attributes and capabilities to language learning. MALL marks a shift from teacher-led learning to a student-led learning thereby promoting self-learning and allowing the learners a greater degree of freedom.

As J. Colpaert (2004) states it, mobile learning environment can be: face-to-face, distance, online, self-paced and calendar-based. The present research paper takes all of these into account.

Brief History of MALL:

As an entry on MALL on Wikipedia reveals, in as early as 1980s, Twarog and Pereszlenyi Pinter used telephone service in order to provide assistance and feedback to distant language learners. In 1990s telephone and computer were used to impart an English Course through distance mode at Brigham Young University, Hawaii. (Green, Collier & Evans, 2001) In the

year 2001, teleconferencing was used to conduct an English Conversation Course by Dickey in South Korea. Between 2002 and 2005, English was taught at a Japanese University by using mobile phones. At City College Southampton, Second Language learners of English were taught through Short Message Service (SMS) and Multimedia Messaging Service (MMS) by supplying them with mobile phones with inbuilt voice-recording systems and cameras. Many such experiments using mobile phones were done at other universities to teach other languages too.

Advantages of MALL:

MALL is beneficial to language learners for a variety of reasons. First of all, a majority of language learners have a smart-phone because as compared to other wireless devices like laptops, mobile phones are comparatively inexpensive. Secondly smartphones are portable and are carried wherever one goes so learners can study outside the class too. Thus, MALL promotes self-paced learning and learner- autonomy. Learning can take place with almost anyone, anywhere, anytime, over any length of time.

Apart from portability another feature of mobile phone is its connectivity. That is to say, it can be connected to Wi-Fi and internet. The other features of mobile phone are its flexibility, small size and user-friendliness.

Moreover, MALL provides a platform for remediation to slow learners. It provides one-on-one live class. It also makes language learning interesting through games which have features like cumulative point system, progress indication and instant feedback. The apps provide regular notifications when the learner is not studying according to the schedule and/or if a task is not finished on time. They also integrate various skills and aspects of language such as listening, speaking, reading, writing, pronunciation, grammar and vocabulary.

Moreover, MALL provides context-specific and real-world practice. Learners can interact, communicate and collaborate with peer learners and the first language speakers of the target language.

Other useful feature of MALL is that it is accessible, easy to navigate and learner-friendly. Apart from providing audio-resources like dialogue it has video resources like pictures, animation and movies too. There are a slew of exercises based on the content for reinforcement of learning.

MALL is highly interactive as opposed to books. The most noteworthy feature of MALL is collaborative learning, wherein learners can support, motivate and evaluate one another. Lastly there is freedom to control and choose the content in accordance with the individual needs of the learner and his/her cognitive level.

It needs to be stressed that incorporating MALL into an English curriculum does not change the pedagogical goals of the course. Rather, MALL-based curriculum can increase the learner's access to course content even outside the classroom. When implemented in a classroom that leverages mobile devices, MALL provides unrestricted access to the learners to a high-quality course content at their fingertips.

Disadvantages of MALL:

Mobile-learning has some limitations too. For example, the cell-phone has a small screen posing reading difficulty. It has a small keypad too which makes it difficult to type content. Furthermore, one has to bear the cost of internet access on the phone. For some handsets, storage can be an issue, as well. Apart from this, if MALL is used in a classroom setting then the teacher has to garner information regarding students' mobile literacy and suit/adapt the learning process and types of applications used in teaching in accordance with students' abilities and educational needs. However, the limitations of the mobile phone as a learning tool are far too less as compared to its advantages.

New Education Policy -2020 and MALL:

India is a global leader in ICT and therefore it is believed that integration of ICT into education will transform and enhance the learning process. Taking cognizance of the fact the New Education Policy -2020 (NEP 2020) lays emphasis on online and digital learning. Recognizing the significance of digital education it sets out to integrate it in school and college curricula.

The NEP 2020 envisages an education system that is technology-enabled and intends to make technology a vehicle of education. In this scenario, MALL can be particularly useful as it will provide high quality second language (L2) learning to the learners from any geographical location thereby making quality language learning available to learners even from remote and rural areas. It will dispel the fear of English language from the minds of students from rural areas making quality education accessible to them and bridge the gap between the urban and rural schools/ colleges. The use of MALL therefore can be a game-changer in the educational

sector as it will usher in digital language teaching methodology, personalised learning and increased student engagement.

Use of MALL to Teach Various Language Skills :

Listening and Speaking:

MALL promotes innovative learning environment and authentic language learning experience. It assists learners comprehend target language spoken in a context. It also enhances the production of oral language. It fosters meaningful sentence construction in L_2 learners thereby enhancing accuracy and confidence among the learners.

Vodcast as instruction material apart from TV shows and commercials provides authentic representation of the language to be learnt. Video applications like Vodcast can be used both in-class and out-of-class. They facilitate learners to comprehend the spoken language thereby fostering listening and speaking. Additionally, they provide real-life like expressions for the learners to internalise. Video apps can aid students recognize regional accents and syntax too as they connect images with words.

Voice recording application like WhatsApp can be used to communicate with the teacher and/or record answers to the classroom activities. This can promote self-monitoring, self-correction and self-evaluation thereby enhancing learner-autonomy and independence. Voice recording feature in WhatsApp can be resourcefully used by a teacher to make learners record monologues and produce dialogues. Such activity can foster creativity, enhance confidence and reduce anxiety among the language learners.

A most useful listening tool is mobile music application. It offers listening inputs apart from being interesting as a large number of persons like listening to music. Furthermore, most of the music applications have subtitles that expose learners to the target language.

There are platforms like the Handheld English language Learning Organization (HELLO) which aid to manage English language learning and have user-friendly features.

Reading and Writing:

Reading activities can be provided to students either through a well-designed course installed on their cell phones or through text messages sent to them followed by an exercise to gauge their reading comprehension.

A handwriting app for tablets can be used to make students write about their personal experiences or compose a paragraph/ essay based on a theme. This can enhance the students' ability to organize written texts. Similarly, an instant messaging app like WhatsApp if used resourcefully in the target language, can positively impact students' language accuracy. For instance, WhatsApp can be used by the teacher to correct errors in writing immediately after an error is committed in a group setting by a learner. Such kind of error-correction is highly fruitful as all learners in the thread can learn from the corrections offered by the teacher . Apart from this, the messages/ texts/ posts used in the WhatsApp in the target language by the teacher, make learners reflect on the language that is used in the text and to negotiate meaning and comprehend the message/ post/text. The feedback offered to the post/text/message by the learners, makes them construct language actively too, thereby improving their writing skill.

A web-based collaborative reading annotation system can positively influence students' reading comprehension. Likewise, apps like HP Reveal (former Aurasma) which are free for iOS and Android devices can be used by a teacher in an innovative manner to offer learning material for an English class.

Social media sites like X (formerly called Twitter) and Instagram can be used by teachers to enable learners find voice in the target language and construct socially appropriate texts. Social networking app such as Tumblr can be used in a writing class profitably to make students engage in a dialogue with their classmates and also to enrich their vocabulary. The comment feature of Tumblr makes them express their views too. Furthermore, Social Networking Sites like these enable students to consume and produce content on a device of their choice.

Mobile Games too can be used resourcefully. For, instance, games such as Minecraft, can promote literacy development if a teacher encourages the learner to connect and interact with the real world in a real context.

Grammar :

Grammatical rules can be taught through a module on mobile followed by multiple choice questions or exercises such as 'fill-in-the- blanks' or 'true-false' etc.

Mobile phones can play a significant role in enhancing the accuracy of the students. For instance, mobile games can be useful to help learners conjugate verbs. Gamified language learning apps such as Duolingo can be useful in this regard. The recording feature of a mobile phone can be used to enable students to practise spoken grammar. Social media can be helpful in allowing students to witness authentic content in real-life situations in order to analyse grammar. For example, X (erstwhile Twitter) can be used by learners to identify grammatical errors in real life situations. The automated feedback feature of certain apps like Busuu, can enable learners to rectify their grammatical errors and improve the accuracy of their usage. Text messages revolving around a grammar unit taught in class can be helpful to make learners consolidate the particular grammar unit outside the classroom.

The web-based Grammar Clinic enhances metalinguistic awareness of the students apart from their self-editing skill. The grammar-based content on web can be interesting and playful and not too demanding making learning an engaging activity. As a result, it can also enhance student involvement.

Vocabulary :

MALL can be immensely beneficial in learning vocabulary as internet can provide pronunciation, image, translation into native language, synonyms, antonyms, sentence usage etc. of the word to be studied.

Learners having access to smartphones with features like authentic audio, sound effects, text that highlights itself as it is read can benefit from vocabulary exercises. Such exercises are particularly beneficial to visual, auditory and kinaesthetic learners. For better understanding of a visual learner a pictorial annotation can accompany a word on the learner's mobile phone.

A noteworthy language app that enriches the vocabulary of the students is 'Memrise'. The games like 'hangman' on mobile make vocabulary learning interesting. Vocabulary learning apps make learning self -regulated adding to learner motivation.

Mobile dictionaries add to students' repertoire of vocabulary. Though paper dictionaries have the same elements like the mobile dictionaries; mobile dictionaries are portable and can be carried in one's pocket to look up a word anywhere , any time. Similarly, online flashcard options offer more features than traditional paper based flashcards. However, the vocabulary learning feature on apps is not a substitute to a teacher entirely as the feedback and notification

is necessary to keep students motivated to use the vocabulary app frequently both in and outside the classroom. Learners can be sent tailor-made vocabulary exercises based on the activities conducted in the classroom. The learners are then asked to complete the exercises on their cell phones and post them to the teacher. The feedback offered by the teacher keeps the learner motivated.

Thornton and Houser (2005) e-mailed vocabulary-based micro-lessons to students thrice a day. In these lessons new words were used in multiple contexts for the learners to guess the meaning. The result was encouraging as the learners improved scores after tests.

Pronunciation:

The second generation of cell phones allow the users to access multimedia so that the learners can record their own voice. As a result the instructors/ teachers can make a better evaluation of the learners' weaknesses in pronunciation. In the absence of a teacher, the learners can record their voice, listen back to it and compare it with a desirable/ideal pronunciation provided, thereby neutralising the 'local colour' in their accent.

Some Examples of Apps and Sites for MALL:

Given below are a few learning interfaces and apps on mobile phones that can be used by English language teachers/learners both in the classroom setting as well as outside the class :

Anki (http://ankisrs.net/) :

Anki is a "flash card" development program for vocabulary acquisition. It is free of charge and uses open-source software. It is available for all devices and platforms.

Babbel http://www.babbel.com/ :

Babbel teaches the learner words and phrases in English apart from other languages. It uses exercises like listen and repeat, read and tap-to-match, fill-in-the-blanks and unscramble jumbled words etc. It is a paid app.

Beelinguapp https://www.beelinguapp.com/ :

Beelinguapp, which is available on Android and iOS, allows one to read a wide range of texts in two languages simultaneously. An L_1 speaker reads the text in English, allowing the learner

to listen to the correct pronunciation. The app is user-friendly and offers learners authentic texts to read in the target language. Moreover, it permits the learner to edit the speed of the audio, the size of the text, and conceal the L1 translation of the text. The app is free apart from a premium version which is paid.

BliuBliu https://bliubliu.com/ :

This language learning program teaches one primarily vocabulary through authentic materials. It is in the beta version and is therefore free. The learner can access the program through their website. The program gauges the level of the learner through a test to decide the difficulty level of the words to be offered to the learner. The programs defines all the words using Google Translate and provides pronunciation through Google Voice.

Busuu http://www.busuu.com/ :

Busuu teaches vocabulary, sentence-structure and conversational skills. The app can be used alone or one can access the community wherein one can practise the target language with other learners and L_1 speakers. Apart from app for smartphone and tablets, there is website version too. The app is free of charge apart from a paid premium version.

Drops https://languagedrops.com/ :

It allows users to practice vocabulary through games. It is particularly useful to learners with a short attention span because the daily practice sessions in the app are for five minutes only. For more practice the learners need to go for the paid version.

EAC Echo http://englishaccentcoach.com/ :

The present app focuses on pronunciation practice by teaching phonemes in American English. It makes use of samples from 30 speakers from North America. Echo lite version is free but is available on iOS only. There is full paid version too.

www.educatorstechnology.com :

This is a highly useful site for the learners and teachers of English as a second language. It has augmented reality games for elementary, intermediate and advanced learners on Android and iPad. It also has useful tools and applications for teachers.

HiNative https://hinative.com/ :

HiNative allows learners to do language exchange on smartphone with native speakers by asking questions and receiving answers. The best part is that it is absolutely free of charge.

InnovativeLanguage www.innovativelanguage.com/ :

It offers modules on communicative English as per the learning level of the learners from beginner to advanced. It is both free and paid.

Lingua.ly http://lingua.ly/ :

It makes learners read articles and learn vocabulary in context. Apart from vocabulary it covers reading, discourse, translation and pronunciation. The app tracks the progress of the learners through tests too. It is free on iPad, iPod, iPhone, Android, Mac/PC via web browser.

Mango / MLibrary (Mango Languages) :

The app focuses on pronunciation and uses recording and playback technologies to help students acquire native-like pronunciation. Apart from pronunciation it covers grammar and vocabulary.

www.podcastinenglish.com :

The website contains a large number of learning situations, dialogues, cartoons etc. on a variety of topics for different levels of learners. The role-plays and recorded situations are in native accent. The written forms of difficult words used in the dialogues are provided for elementary learners.

ReadLang:

It is a program that provides an online e-reader that makes use of Google Translate to translate words and phrases instantly when the learner clicks on them. The program also saves these clicked words in a database so that the learner can refer back to them later on. The mobile version of the program is available for iOS and Android.

Rosetta Stone Course:

Rosetta Stone is one of the most useful language learning apps. The app uses picture and word matching for the elementary learners. For the intermediate and advanced learner, there is speech recognition option that ensures that the learner is pronouncing the word correctly.

Study Stack https://www.studystack.com :

It is a flashcard generation tool which can be used for vocabulary learning. Instructors can design flashcards for the students, or students can make flashcards all by themselves. The free as well as paid versions are available on Android and iOS.

www.talkenglish.com :

The website contains dialogues recorded by native speakers to repeat, ranging from simple to complex according to the learner's level. The dialogues have transcript, they can be downloaded and have a quiz based on them with check-answer feature. As the dialogues are recorded by native speakers the learners get exposed to the native accent.

Tandem:

Tandem is a community language-learning app which pairs language speakers who wish to practise each other's language. Learners can speak with their partner through the app's texting service apart from making audio-calls, video-calls, sending audio messages and photo messages etc. The app is free on iOS and Android.

There are many other applications and web sites useful for MALL. However, due to space constraints only the most useful have been mentioned above.

Conclusion:

To conclude, it can be stated that mobile technology has penetrated all aspects of postmillennial life. Due to mushrooming of mobile phones, MALL has become one of the most useful tools to learn a second/foreign language. The advantages of mobile phones such as growing screen size, portability, ability to record sound and video are apparent which make them a highly useful tool in learning a language.

However, even though useful, mobile phones cannot replace a teacher who will have to step into the shoes of a facilitator when MALL is used under his/her supervision and guidance. A teacher can make language learning student-centric, interesting and effective by using cell

phones resourcefully. However it needs to be stressed that, MALL is one of the growing and understudied fields on which further research is necessary so as to increase its efficacy.

References:

1. https://en.wikipedia.org/wiki/Mobileassisted_language_learning#:~:text=Mobile%2Dassisted%20language%20learning%20(MALL,assisted%20language%20learning%20(CALL). (Accessed on 30 August 2024)
2. https://sites.middlebury.edu/mall/using-mall-to-teach-various-language-skills/ (Accessed on 30 August 2024)
3. https://sites.middlebury.edu/mall/apps/explicit-apps/ (accessed on 30 August 2024)
4. Colpaert, J. (2004) “From Courseware to Coursewear ?” *Computer Assisted Language Learning*, 17 (3-4), pp. 261-266.
5. Green, B.A., Collier, K.J. & Evans, N. (2001) "Teaching tomorrow's class today: English by telephone and computer from Hawaii to Tonga." In L.E. Henrichsen (Ed.), Distance-learning program (pp. 71–82). Alexandria, VA: Teachers of English to Speakers of Other Language, Inc.
6. Thornton, P and C. Houser (2005) “Using mobile phones in English education in Japan”. *Journal of Computer Assisted Learning*, 21 (3), pp.217-228.

NEP2020: Pragmatic up Skilling for Generating Employment for Youth in India

Dr. Kiran Rakibe
KPG College Igatpuri, Nashik (India)

Abstract

The major lacuna in the earlier educational system was that the curriculum lacked the practical approach that would help students in getting jobs. Hence, in order to generate employment for youth in India NEP- 2020 has made drastic changes in its structure as well as instructional materials and approach. In this paper it has been highlighted that while educating and up skilling children the skills of resilience must also be developed so that it will help them in remaining positive and relevant in the ever-evolving jobs and skills landscape and to train our students for to be entrepreneur sand skilled to generate employment.

Key Words: Skill Development, NEP, Up skilling, Employability

As per NEP: 2020 various domains of technical education will be imparted in regional languages. The fundamental principles of the policy are enhancing multidisciplinary and holistic approach in the Indian educational system. Another key feature is promoting multilingualism and the power of language in teaching and learning, life skills such as better communication, team work and resilience. The reason for giving education in the regional language could be to emphasize imparting knowledge rather than just information. If India wants to be globally superpower, then there is now way out but to strengthen linguistic competency of the students in English language, graded courses are being designed to accustom students to make them proficient in the four fold skills of English language. The present policy takes into account Early Childhood Care and Education (ECCE), which is aimed at promoting better overall learning. Organizations, policy makers and stakeholders have to design and provide adequate interventions for

development of soft/communication and life skills which have not been succinct in early stages of development leading to low level of language expression and comprehension.

Skill development is a significant driver to address poverty reduction by improving employability and inclusive growth. It facilitates a cycle of high productivity, increased employment opportunities, income growth, and overall development. For the last few years, the Government has laid the foundations for a sustainable skill development ecosystem; however, it is now time to further build and bank upon it by leveraging the NEP to reap the benefits of our unique demographic dividend.

It becomes crucial to align the skilling efforts with the NEP to further stimulate the skill development initiatives in the country. The on-going skilling initiatives would need to be turned around and tweaked accordingly to inculcate the approach and spirit of the NEP. This would ensure the formation of a strong human capital base ready to serve the nation targeting self-reliance and also engage with the world from a position of strength and valor.

Skill development means a process which enables trainees and the working age people to gain access to dexterity, knowledge and ability, career ethics and good working attitude by skill training, establishing skill standards, and other relating activities.

Borrowing from educational reforms happening world over, the NEP2020 recommends

> 'Vocational education will be integrated into all school and higher education institutions in a phased manner over the next decade.'

NEP2020's thrust is majorly on vocational and skill education of students to prepare employable youth. Courses, disciplines, streams, and subjects ***'will be reworked based on skills gap analysis and mapping of local opportunities.'*** Hopefully by 2024 the silos of science, humanities and commerce curriculums should be broken down and replaced with a flexible, multidisciplinary, competency-based curriculum of choice.

Introduction

The brink of a technological revolution or more popularly known as the 4th Industrial Revolution that is fundamentally changing the way we live, work, and interact with one another. These disruptions have started to alter the conventional methods of employment resulting in a reduced number of available job opportunities and increasing the urgency for skilling and re-skilling people globally. This has been further accentuated by the age of a severe pandemic that we are currently living in.

India's population is among the youngest in an aging world. Population projection at the National and State level up to 2041 shows that India has entered the next stage of demographic transition, with population growth set to slow sharply in the next two decades. However, the projected demographic dividend can easily turn into a demographic disaster if the fast-growing young population remains unskilled and under-utilized, thereby, undermining India's socio-economic growth prospects.

It has been estimated by A INICEF that almost 50% of the Indian youth are on the wrong track as far as education is concerned and that has resulted into unemployment. Another study estimates that merely 20% out of the five million students who graduate every year get employed in India. It would not come as a surprise if more such findings and forecasts are capturing the dismal state of employability prospects of Indian youth amid the rapidly changing global landscape. The underlying primary reason for poor employability is that, often there is a demand-supply gap between the skills acquired by the students and the skills required by the employer (agriculture, trade, industry, etc). Thus, the main concern for the policymakers is to address not only just the issue of provision of adequate employment opportunities for the youth but also increasing their employability as per the current and future trends at the workplace. Hence, as per NEP-2020 every graduate student needs to undergo either on job training or apprenticeship for 6 credits. To address the skills mismatch, the Government of India in the recent years has set up the Ministry of Skill Development & Entrepreneurship (MSDE) and various schemes under its purview such as the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Skill India, SANKALP, National Skill Development Mission, among others. Although

significant progress has been made to skill and re-skill India's growing young workforce, there remain concerns regarding the market relevance of candidates keeping in view the rapid technological advances and the digitization that is transforming our world.

The future labour market situation of young person will be highly influenced by their initial experiences, including how quickly and how well they can access the labour market, and the skills and competencies acquired through education and training (ILO, 2019). Skill development initiatives offering training, skilling, upskilling, and reskilling of millions of people may not reap the desired outcomes if the foundational and incremental education is highly tilted towards rote learning rather than applied learning. Thus, in all likelihood, it would become difficult to carry out effective skilling missions without the introduction of parallel policies to improve our education system in line with the changing dynamics of the 21st century.

India's National Education Policy was framed way back in 1986 and modified in 1992. Over the last three decades, significant changes have taken place in India's education system in almost every segment of the sector. Still, there remains many problems ranging from inadequate enrolment to quality issues to lack of equity and insufficient infrastructure. At this juncture, the National Education Policy (NEP) 2020 has attempted to diagnose the problems plaguing the sector and provide innovative solutions to the problems right from the pre-school level to higher education courses.

In this paper it has been highlighted that while you educate and up skill children, also develop in them skills of resilience that will help them remain positive and relevant in the ever-evolving jobs and skills landscape. to train our students for to be entrepreneurs and skilled to generate employment.

The policy adopts a learner-centric approach while focusing on experiential & lifelong learning, vocational education, and the transformation of higher education institutions. One of the most crucial policy overhauls in the NEP pertains to the dismantling of the rigid distinction between curricular, extra-curricular, and co-curricular subjects in school along with the integration of vocational education into mainstream education in a gradual

manner. This would provide the much-needed flexibility to the students to realize their interests and sharpen in-built skills while also acquiring new ones.

The proposed vocational skill exposure starting from the middle and secondary grades through internship opportunities with local industry, businesses, artists, craftsperson, and professionals, among others is also a welcome step to lay the foundation of early technical education and would accelerate the skilling efforts in the country. Hence, the NEP envisages a renewed focus to promote creativity and curiosity among young minds to make the curriculum of schools & colleges more skill-oriented, thereby, leading to a transformation of our youth into tangible global resources.

Skill development is a continually evolving process; it doesn't stop at one stage. To become an *Atmanirbhar Bharat* as envisioned by our Hon'ble Prime Minister and a true "knowledge-based economy", India needs to build innovative and advanced skills and go beyond automation, computers, and electronics. Better late than never, the announced NEP should provide a further impetus to Government's Skill India campaign and establish a strong workforce equipped with better skills including life skills, problem-solving skills, critical thinking, scientific vigor, etc to meet the challenges of the times ahead.

Skill development is a significant driver to address poverty reduction by improving employability and inclusive growth. It facilitates a cycle of high productivity, increased employment opportunities, income growth, and overall development. For the last few years, the Government has laid the foundations for a sustainable skill development ecosystem; however, it is now time to further build and bank upon it by leveraging the NEP to reap the benefits of our unique demographic dividend.

Going ahead, it becomes crucial to align the skilling efforts with the NEP to further stimulate the skill development initiatives in the country. The on-going skilling initiatives would need to be turned around and tweaked accordingly to inculcate the approach and spirit of the NEP. This would ensure the formation of a strong human capital base ready

to serve the nation targeting self-reliance and also engage with the world from a position of strength and valor.

Economic Survey, Government of India.

Skill Development for Generating Employability

Skill labs will also be set up and created in the schools in a **hub and spoke model** which will allow other schools to use the facility. 89. (Refer NEP 2020 Para 16.8) Dropouts from the formal system will be reintegrated by aligning their practical experience with the relevant level of the Framework.

Multilingualism and the power of language: NEP 2020 lays great emphasis on promoting multilingualism so that children know and learn about the rich and vast array of languages of their country. The second reason for promoting regional language is that students must get subject knowledge rather than mere information.

The new National Education Policy (NEP) **gives more freedom of choice for skill development to the students of vocational courses with its multidisciplinary approach and gives due weightage to all types of skills**, All India Council of Technical Education (AICTE) chairman Anil D.08-May-2022..

Skill development means a process which enables trainees and the working age people to gain access to dexterity, knowledge and ability, career ethics and good working attitude by skill training, establishing skill standards, and other relating activities.

The fourth Industrial Revolution (4IR) is here. Education system around the world are buzzing

> "Change is needed, change is happening, and more change is on the way. Is the governments' world over preparing their students for the realities of 4IR workplace? Will a multidisciplinary education recommended by NEP2020, that is an integration of academic and vocational streams with a focus on skill-building through

> Competency-based education prepare Indian youth for the new world of work?"

In one of the webinars on reforms proposed by NEP2020 in vocational education & skill building in Schools, Dr Biswajit Saha, Director Training & Skills, CBSE advised the School Managements and Principals to reach out to the local industries and businesses in neighbourhood and forge linkages with them to give their learners a feel of the present-day workplace. He quotes NEP2020 saying this should begin as early as class VI with ***'ten bagless days'*** of exposure to present-day workplaces such as industrial manufacturing units, banks, retails stores, service industries and local cottage industries. One may wonder what has necessitated the need for exposure to workplace as early as class VI. To understand this fully schools and parents, need to take stock of the current job market and compare it to what our children are studying in their classroom and see the grave mismatch! Also understand that NEP2020 has initiated the educational reforms to make Indian education system more suited to the 4IR workplace.

The problem with current education system is twofold – firstly, the typical choice of streams -science, commerce and humanities offered at senior secondary level makes many students vie for a very small genre of jobs leading to overcrowding and cut-throat competition in certain sectors. When we as school and parents push our children to make such stereotypical choices based on their marksheets, we are inadvertently setting them up for stress & anxiety due fear for failure and ultimately failure of many students. Secondly, the theoretical, bookish, knowledge-based curriculum gives students hardly any job skills to be able to enter the job market based on what they have studied in school and college. By implementing such kind of curricula at Higher Education we are simply preparing students for exam and not for job market. **Jack Ma**, the founder of Alibaba, the e-commerce giant warns

> "The knowledge-based approach of '200 years ago', would 'fail our kids", who would never be able to compete with machines."

According to Jack, like other independent skills soft skills like teamwork, values, thinking and time management must also be taught by paying special attention.

Curricular Challenges

It has been estimated that due to the 4th Industrial Revolution around 69% of the jobs in India, especially those which include very low skills, are likely to be demolished.

World Economic Forum's Skill Outlook shares the skills that are growing in use and the ones that are declining in use in the workplaces today.

As reported by The World Economic Forum's, ***The Future of Job Skills***,

> "Interestingly in this high-tech landscape with automation replacing low-skilled jobs, it's the demand for ***human skills*** that is out stripping the supply."

The modern era heavily depends on the atomization of work; therefore, major IT firms like Infosys and Wipro have shifted their routine jobs to atomization. Here, such firms have not sacked down their employees, rather they have started introducing the advanced projects like machine learning. They have also started organising some orientation cum training programs for their employees, so that they can cope up with modern skilled based technology, which require critical and creative thinking for problem solving. This is the reason why the New Education Policy strongly recommends the skill based curricula. The skills required at work place must be incorporated the curricular design so that students will be equipped with the combination of both the steam subjects for scientific research and innovation, humanities in order to understand the human behaviour and values and commerce for making sense of businesses and financial markets. Therefore, NEP rightly provides students knowledge from the varied streams by giving the opportunity in the selection of subjects by introducing Choice Based Pattern. Therefore, NEP-2020 not only brought out the changes in the educational structure but has also strongly suggested drastic changes as far as pedagogical ***restructuring*** is concerned. It has recommended enhancing literacy and numeracy at foundational and preparatory stages. Along with it the students must be given hands-on experience through experiential pedagogy.

Global Transformation of Education

Nobody can ignore the fact that the present educational system needs to be reformed so that the learners can be exposed to the skills required for their workplace and ultimately the students will be prepared for the jobs. Singapore has already taken a step towards it and by sweeping educational reforms in order to inspire its learners towards meta-cognition and self-development. It is the responsibility of teachers as well as parents to imbibe on the minds of their ward that education is not a competition but an opportunity to lead towards the betterment of life in every sense.

Ong Ye Kung, Singapore's Education Minister says, advising against any comparisons between student performance and encouraging each student to develop own learning. **South Korea** has replaced its traditional rigid curriculum that required learners to choose between science-track and arts-track, with ***integrated science and liberal arts education*** to promote flexibility and creativity on how students will address the real-life issues and challenges of the 21st century. The focus of classroom interactions is now on digital literacy, promotion of integrated curriculum, reinforcement of character/moral education, and personalized learning.

Finland has consistently carried out common-sense educational reforms that aim to create a happy, healthy and harmonious learning environment where learner's innate intelligence and personality will flourish. The children study 2-3 subjects daily therefore the learning is more in-depth, hands-on, less regimented, more relaxed, and therefore an enjoyable and engrossing experience. Finland has totally given up standardised tests that lead to rote learning and exam focus in classroom. The teachers assess students using ***individualised assessment*** designed by them specifically for each student. The National Matriculation Exam is totally voluntary and conducted by government at the end of class X to facilitate admission to Universities. Most learners opt for three-year vocational courses for training in job or trade at the end of schooling and they do not need to take this exam.

Re-Imagining Indian Education

Borrowing from educational reforms happening world over, the NEP2020 recommends

> 'Vocational education will be integrated into all school and higher education institutions in a phased manner over the next decade.'

NEP2020's thrust is exclusively on vocational and skill education of students to prepare employable youth. Courses, disciplines, streams, and subjects *'will be reworked based on skills gap analysis and mapping of local opportunities.'* Hopefully by 2024 the silos of science, humanities and commerce curriculums should be broken down and replaced with a flexible, multidisciplinary, competency-based curriculum of choice.

Strong vocational penetration has already begun in CBSE affiliated schools across India as almost one thirds of the total affiliated schools are now offering vocational courses with maximum private schools driving the demand for new vocational courses. This year despite COVID pandemic the response of private and international CBSE schools has been phenomenal with nearly 4500 CBSE affiliated schools introducing vocational education model from class VI onwards (http://cbseacademic.nic.in/skill-education.html). The vocational/skill courses, designed with Industry experts are offered in almost all sectors with a special push in IT applications and new technologies sector, BFI sector (Banking, Finance and Life Insurance) Financial Marketing Management, Fashion Design & Technology, Medical Diagnostics, Retail Services & Operations, Hotel Management & Catering Technology, Tourism & Travel etc.

All courses are a part of the **National Skill Qualification Framework** (NSQF) and has been incorporated in the new **National Curriculum Framework**. Also, under development is the new **National Higher Education Skills Framework** (NHESF) which will be aligned with above educational frameworks to give Indian learners uninterrupted vertical pathways of mobility from class I into higher education, as never before.

Implementing the NEP mandate, CBSE declared adoption of **Competency-based Education**. The competency-based curriculum focuses on real-world skills and competency development. Lessons are designed around competencies that are needed for a particular profession, instructional material has real-world case studies and work-place simulations for critical thinking and creative problem solving. In CBE learning happens in a carefully created work-place environment with an interactive and experiential pedagogy, and multiple opportunities of problem solving in a simulated work environment. So that by the time the courses finish students are workplace ready by acquiring both knowledge and domain related skills in their chosen fields.

Self-Reliance -The spirit of Entrepreneurship

The new world of work is powered by the creativity, entrepreneurship, and networking. These values must be engrained in the learner through the learning process and environment. For teachers to bring ignitions of entrepreneurship n creativity to classrooms, Schools will have to give teachers the autonomy to design lessons that give learners opportunities to research, explore, experiment, and innovate while balancing the curricular load. Schools may even tie-up with Industry to start incubators. All vocational courses must be delivered with an underlying focus on inculcating financial literacy and skills of personal financial management in the learners with aim to make our learners ***atmanirbhar***.

Conclusion

Schools, Technical Institutions Diploma and Degree Colleges, teachers, and parents must play a proactive and encouraging role while planning the career of children. Help them identify their potential and look for opportunities to build up these skills. Keeping them safe at the cost of their natural talent, interest and aptitude would deny them the opportunities of growing intellectually, emotionally, and socially. Let them explore their passions unhindered by supporting their dreams and aspirations. Be the wind beneath their wings! Brain research tells us that academic, professional, and personal success in life depends on socio-emotional neural networks built in the brain during childhood. Therefore, while you

educate and upskill children, also develop in them skills of resilience that will help them remain positive and relevant in the ever-evolving jobs and skills landscape.

References:

- https://www.researchgate.net/publication/345100384_An_Empirical_Study_on_NEP_2020_National_Education_Policy_with_Special_Reference_to_the_Future_of_Indian_Education_System_and_Its_effects_on_the_Stakeholders_JMEIT
- https://idronline.org/tag/nep-2020/?gclid=Cj0KCQjwxIOXBhCrARIsAL1QFCYb3s8lqetPmtw1jCrEVHYU9fR2Go5xVt1nzpQilpJ8nag16F__tx4aAlzhEALw_wcB
- https://english.cw.com.tw/article/article.action?id=1831
- https://timesofindia.indiatimes.com/blogs/edutrends-india/nep2020-education-for-employability/?source=app&frmapp=yes
- https://www.education.gov.in/shikshakparv/docs/background_note_Reimagining_Vocational_Education_Skill_building_revised.pdf

Intertextuality between Neel Mukherjee's *A life Apart* and Tagore's *Ghare- Baire*

Dr. Kiran Rakibe, Principal, Karmaveer Punjababa Govardhane Arts, Commerce and Science College, Igatpuri, Nasik (Maharashtra).

Mohini Savedkar, Research Scholar, K.T.H.M. College, Nasik.

Abstract:

Neel Mukherjee is a celebrated contemporary author whose first novel *A Life Apart* (initial title *Past Continuous*) has a protagonist Ritwik Ghosh who writes the story of Miss Gilby, a minor character in Rabindranath Tagore's novel *Ghare- Baire* (*The Home and the World*). *A Life Apart* thus, has a story within a story. Taking note of the fact, the present paper studies the element of intertextuality between Mukherjee's *A Life Apart* and Tagore's *The Home and the World*.

The paper is divided into two parts. The first half of the paper discusses the term 'intertextuality' while the latter half sheds light on the element of intertextuality between the novels *A Life Apart* and Ghare-Baire (*The Home and the World*). Tagore's Ghare-Baire was also adapted into a film by Satyajit Ray. However, the paper does not refer to the film and studies the intertextuality only between the English translation of Tagore's *Ghare-Baire* titled *The Home and the World* and Mukherjee's *A Life Apart*.

Key Words: Allusion, Dialogism, Intertextuality, Parody, Swadeshi Movement

Introduction - Intertextuality:

Intertextuality can be defined as "shaping of a text's meaning by another text, either through deliberate compositional strategies such as quotation, allusion, calque, translation, pastiche or parody, or by interconnections between similar or related works perceived by an audience or reader of the text."[1] Intertextuality can be deliberate or unintentional.

The term intertextuality was coined by Julia Kristeva. It is based on Saussure's concept of how signs derive their meaning from a structure of a text and Bakhtin's dialogism which emphasises on a continual dialogue between works of art. As an entry on intertextuality in Wikipedia states: "the meaning of a text does not reside in the text, but is produced by the reader in relation both to the text in question and the complex network of texts evoked by the reading process."[2] For instance, when one reads Tennyson's or James Joyce's *Ulysses* one decodes it in the light of Homer's *Odyssey*. Though Intertextuality is related to post-modernism, the concept is not new. In the Bible too, the passages in New Testament refer back to Old Testament. As Wikipedia states it: "Perhaps the earliest example of a non-anonymous author alluding to another is when Euripides, in his *Electra* (410s BC), spoofs (in lines 524-38) the recognition scene from Aeschylus's *The Libation Bearers*." [3]

Other noteworthy examples of intertextuality mentioned in Wikipedia include: "*East of Eden* (1952) by John Steinbeck which is a retelling of the account of *Genesis* apart from *Absalom, Absalom*! (1936) by William Faulkner that is a retelling of the Absalom story from Samuel. Similarly, *Earthly Powers* (1980) by Anthony Burgess is a retelling of Anatole France's *Le Miracle du grand saint Nicolas* during the 20th century whereas *The Dead Fathers Club* (2006) by Matt Haig is a retelling of Shakespeare's *Hamlet*.

Other instances of intertextuality include *A Thousand Acres* (1991) by Jane Smiley(a retelling of Shakespeare's *King Lear*); *Perelandra* (1943) by C. S. Lewis (a retelling of the account of Genesis, also leaning on Milton's *Paradise Lost*) ;*Wide Sargasso Sea* (1966) by Jean Rhys(a metatextual intervention on Charlotte Brontë's *Jane Eyre*, the story of the "mad woman in the attic"); *The Legend of Bagger Vance* (1996) by Steven Pressfield (a retelling of the Bhagavad Gita); *Bridget Jones's Diary* (1996) by Helen Fielding (a modern romantic comedy that replays and references Jane Austen's *Pride and Prejudice*);*Mourning Becomes Electra* (1931) by Eugene O'Neill (a retelling of Aeschylus' The Oresteia) and *Frankissstein* (2019) by Jeanette Winterson: A retelling of Mary Shelley's magnum opus *Frankenstein*." [4]

Intertextuality is a kind of 'recontextualization' and a transformation of one text-in-context to another which can be either explicit and direct or implicit and indirect. Intertextuality can be in the form of an allusion- a reference to another text in conversation, dialogue or metaphor. For instance, in the sentence "His nose grew like Pinocchio's" alludes to Carlo Collodi's *The Adventures of Pinocchio*

It needs to be noted that intertextuality should not be confused with plagiarism. Wikipedia illustrates the difference between intertextuality and Plagiarism. In intertextuality "aspects of existing texts are reused, often resulting in new meaning when placed in a different context. Intertextuality hinges on the creation of new ideas, while plagiarism attempts to pass off existing work as one's own".[5] For example, students writing their assignment if do not cite the sources, indulge in plagiarism.

Intertextuality, on the contrary, as postulated by Julia Kristeva is a continual exchange and relationship building between texts. "The term intertextuality was born within the paradigm of poststructuralism – a school of thought in which Kristeva is often included, along with Derrida, Foucault, Baudrillard. Originally intertextuality served as a literary device for clarifying the process of interpreting any text by seeing the combination of multiple other texts that underlie it. Later, the term acquired a much wider scope of meanings to embody a myriad of textual and other interrelations. To understand a text through the prism of intertextuality is to perceive it as a tapestry of many other texts, ideas and contexts, woven together. Intertextuality invites us to read and interpret texts through their multiple references to other texts."[6] Intertextuality is a process of texts talking both to the reader and to each other thereby colliding with, influencing and enriching each other. Thus, "In other words, no text is an island, nor it is a hermetic totality. Powered by multiple references to other ideas, works, interpretations and contexts, every text steps on the shoulders of other texts, connecting implicitly or explicitly to their associations and understandings… Text is not a unilinear entity but a heterogeneous combination of texts. Any text is at once literary and social, creative and cultural. They are culturally and institutionally fashioned."[7]

Intertextuality can be between or inside works of art, particularly literary works or in the form of movie allusions, songs, collages etc. In intertextuality texts echo each other. "Take the sentence "Follow the White Rabbit", for example. When this rings in the reader's mind it not only relies on itself as a sentence but also steps on a broader plane of meanings: associations and previous knowledge accrued by the interpreter of this same line through their previous encounters with the sentence and the relationships it has entered before, the most obvious one being "Follow the white rabbit" for Lewis Carroll's Alice in Wonderland. It in this way that

the reference becomes weighty, saying more than one thing and serving as a springboard for the reader's mind to explore broader and deeper associations." [8]

In this way, intertextuality can be explicit (e.g. movie prequels and sequels), implicit (parody, satire) or allusory (allusion through dialogue, action, plot, imagery, character names, etc.)

Tagore's *Ghare-Baire* (*Home and the World*):

Ghare Baire is a novel by Rabindranath Tagore published in 1916. The novel was translated into English with the title *Home and the World*, under the guidance of the Rabindranath Tagore himself by his nephew, Surendranath Tagore in 1919. The novel featured as one of the ten all-time greatest Asian novels, in a 2014 list by The Daily Telegraph.

The novel is set in the initial years of twentieth century India with the backdrop of National Independence Movement in general and Swadeshi Movement in particular. The chief characters in the novel include: Nikhilesh, Bimala, Sandip, Bara Rani and Amulya.

The story of novel unfolds through the perspectives of Nikhil, Bimala and Sandip. When the novel opens, Bimala is a devoted wife and is happy with her life. She has married Nikhil a gold-hearted, kind man who is educated and magnanimous. But, when the political activist Sandip starts making fiery speeches, she is infatuated by his words and is influenced by his political ideas. She thinks of him constantly. Sandip, encourages her to take interest in him. Bimala steals money from Nikhil to raise funds for Sandip's cause, money which he keeps for himself. Bimala is disillusioned with Sandip.

A Life Apart:

A Life Apart, by Neel Mukherjee was first published by Picador in India in 2008 under the title *Past Continuous*. It was later published in the UK with the title *A Life Apart* by Constable and Robinson in 2010. It bagged the Vodafone Crossword Book Award for English Fiction in 2008.

The novel tells two stories. The first is that of the protagonist Ritwik Ghosh; a story of a young man's escape from an embittered childhood of squalor and abuse in Calcutta to England where he slides into homosexuality and male prostitution.

The second story that comprises the novel is the one that Ritwik writes about Miss Gilby, the story of an Englishwoman in the old world of Bengal set in 1900s.

Intertextuality between Neel Mukherjee's *A Life Apart* and Tagore's *Ghare- Baire* (*The Home and the World*):

Miss Gilby is a minor character in Tagore's *The Home and the World*. In this novel, she appears cursorily as the English language tutor of Bimala, the wife of Nikhil. Her character is not much developed by Tagore and he just makes a passing reference to her.

On the contrary, in *A Life Apart*, Miss Gilby appears as a major character and the protagonist of the novel Ritwik Ghosh writes a story revolving around Miss Gilby. In the process he develops many imaginary details about her.

The characters which are common in both the novels are Miss Gilby, Nikhil, Bimala and Sandip. In *The Home and the World*, Nikhil and Sandip appear only with their first names but

in *A Life Apart,* Mukherjee gives surnames to them. Thus, Nikhil becomes Nikhilesh Roy Chowdhury while Sandip is given the surname Banerjea.

Amulya, who reveres Sandip, plays a chief role in *The Home and the World.* However, he does not appear at all in *A Life Apart*. Likewise, the brother of Miss Gilby, District Collector James Gilby appears in *A Life Apart* who does not appear in *The Home and the World.* The other characters which occur in *A Life Apart* but do not feature in *The Home and the World* are Sheikh Maqsood Ali (Miss Gilby's teacher of Bengali language) , Saira –begum (the wife of the Nawab of Motibagh whom Miss Gilby teaches English before she tutors Bimala), Mrs Violet Cameron (Miss Gilby's British friend from Calcutta) among others.

In *The Home and the World*, Sandip calls Bimala 'Queen Bee' repeatedly and Bimala believes that he views 'Shakti' in her. In the course of a conversation he tells Bimala: "'Today you have given me the message of my country. Such fire I have never beheld in any man. I shall be able to spread the fire of enthusiasm in my country by borrowing it from you. No, do not be ashamed. You are far above all modesty and diffidence. You are the Queen Bee of our hive, and we the workers shall rally around you. You shall be our centre, our inspiration."' [9] Thus, Sandip caresses Bimala's ego in *The Home and the World.* But, this caressing of her ego finds no place in *A Life Apart*.

The most important development in the plot of *The Home and the World* is the theft that Bimala commits in order to give money to Sandip, purportedly for financing the Swadeshi movement. This is a key element in the plot of *The Home and the World* as the theft makes Bimala repent. However, this episode does not appear in *A Life Apart*.

In *The Home and the World,* the characters of Sandip and Nikhil are fully developed. Sandip is deep-dyed as a negative person, right from the beginning in *The Home and the World*. For instance, Bimala is aware that "Sandip Babu used to fleece him (Nikhil) on the pretext of Swadeshi work." [10] She also states: "I had seen Sandip Babu's photograph before. There was something in his features which I did not quite like. Not that he was bad-looking,-far from it: he had a splendidly handsome face. Yet, I know not why, it seemed to me, in spite of all its brilliance, that too much of base alloy had gone into its making. The light in his eyes somehow did not shine true. That was why I did not like it when my husband unquestioningly gave in to all his demands. I could bear the waste of money; but it vexed me to think that he was imposing on my husband, taking advantage of friendship. His bearing was not that of an ascetic, nor even of a person of moderate means, but foppish all over." [11] The streak of negativity in Sandip is emphasized by Tagore repeatedly. For instance, Sandip considers Ravana as the hero of Ramayana. As he himself confesses: "That is exactly how Ravana, whom I look upon as the real hero of Ramayana, met with his doom. He kept Sita in his Asoka garden, awaiting her pleasure, instead of taking her straight into his harem." [12] In this way, Tagore portrays Sandip as a villain through his hero-worship of Ravana right from the beginning of the novel. However, Sandip is hypnotic and Bimla falls for his mesmerizing personality in the middle of the novel. In *A Life Apart* too Bimala is drawn to Sandip and his Swadeshi ideology but in Mukherjee's novel Sandip is not portrayed as a villain as he is in Tagore's novel.

In *The Home and the World,* Nikhil is projected as a foil to Sandip with his gentle persona. In *A Life Apart* too, he is delineated as a gentlemanly soul, and a loving, caring husband.

In *A Life Apart,* Nikhilesh Roy Chowdhury, the zamindar of Nawabgunj, first meets Maud Gilby at a tea party hosted by Maud's brother, district collector James Gilby in Ooty in June 1899. In the party, unlike other British, Miss Gilby freely mixes and interacts with the Indian and carries a positive impression of Nikhilesh. Three years after the tea party, Nikhilesh writes a letter to Maud Gilby and requests her to teach English to his wife Bimala to which Miss Gilby readily agrees. However, both in *The Home and the World* and *A Life Apart*, Bimala stops taking lessons from Miss Gilby when she (i.e. Bimala) comes under the sway of Swadeshi movement.

Mukherjee invents many details regarding Miss Gilby in *A Life Apart*. For instance, when Miss Gilby strays into the verandah leading to the andarmahal (the inner courtyard) to return Bimala's exercise book; the entire verandah is washed with water. Similarly, in the end of *A Life Apart,* Miss Gilby is attacked by Swadeshi activists. Such scenes are missing in *The Home and the World.*

Conclusion:

To conclude, it can be stated that Neel Mukherjee weaves many details around Miss Gilby and makes her an interesting character in his novel *A Life Apart*. Miss Gilby, who is a minor character in Tagore's *The Home and the World* is developed into a round, dynamic, flesh and blood character by Neel Mukherjee.

References:

1. https://en.wikipedia.org/wiki/Intertextuality (accessed on 24 January 2025)
2. ibid
3. ibid
4. ibid
5. ibid
6. https://wordlift.io/blog/en/entity/intertextuality/ (accessed on 25 January 2025)
7. ibid
8. ibid
9. Tagore, Rabindranath. *The Home and the World*. AITBS Publishers, 2016.p.48.
10. ibid p.24.
11. ibid, pp.27-28.
12. ibid, p.105.

Journal of East-West Thought
ISSN: *2168-2259 (online)*
(https://jetjournal.us/)
Volume 15, Issue 1 – 2025

Impact Factor: 7.665, UGC CARE I

HUMAN-NATURE INTERACTIONS IN THE FICTION OF RUSKIN BOND: AN ECO-CRITICAL PERSPECTIVE

Archana Himmatrao Patil, Researcher, Department of English, K.T.H.M. College, Nashik
Dr. Kiran H. Rakibe, Research Guide, Principal, K. P. G. College, Igatpuri, (Nashik)
(Savitribai Phule Pune University, Pune)

ABSTRACT

This research paper explores the dynamic and interdependent relationship between humans and the natural world in the fictional works of Ruskin Bond through the lens of eco-criticism. In an era increasingly defined by environmental degradation and ecological imbalance, Bond's literature provides a quiet but compelling voice that champions the sanctity of nature and the importance of coexistence. Set predominantly in the Himalayan region, his stories often depict lush forests, wild animals, and changing seasons—not merely as scenic backdrops, but as central elements that shape the lives and emotions of his characters. Using an eco-critical approach, the paper examines how selected stories such as *The Cherry Tree*, *The Leopard*, and *Panther's Moon* portray the interaction between human beings and their natural surroundings. These narratives highlight key environmental concerns including deforestation, human encroachment into wildlife habitats, loss of biodiversity, and the psychological as well as spiritual impact of nature on human life. Bond's writing style, characterized by simplicity and lyrical sensitivity, not only fosters an emotional connection with nature but also subtly advocates for environmental ethics. The paper argues that Bond's fiction transcends aesthetic appreciation of the natural world and enters the realm of ecological consciousness. His work encourages readers to reflect on their role within the larger ecosystem and promotes an ethos of respect, balance, and sustainability. Through his nuanced portrayal of human-nature relationships, Bond emerges as a significant literary voice contributing to the discourse on environmental responsibility and eco-literature in India.

Keywords: Eco-Criticism, Ruskin Bond, Human-Nature Relationship, Environmental Consciousness, Indian English Literature

INTRODUCTION

In recent years, the field of eco-criticism has emerged as an important literary approach that explores the complex relationship between literature and the environment. With rising global concerns such as climate change, deforestation, and loss of biodiversity, there is an increasing need to examine how literary works reflect and respond to ecological issues. Eco-criticism not only investigates the representation of nature in texts but also challenges anthropocentric worldviews, encouraging a more ecocentric and sustainable perspective. In Indian English literature, Ruskin Bond stands out as a writer whose works deeply engage with the natural world. Living in the foothills of the Himalayas for most of his life, Bond's stories are rich with the sights, sounds, and rhythms of nature. He does not portray nature merely as a backdrop, but as a living, breathing presence—an active participant in the human experience. His writing captures the beauty of forests, the majesty of mountains, and the silent wisdom of animals, while also hinting at the ecological threats posed by

Copyright © | JET Network, All Rights Reserved

Journal of East-West Thought
ISSN: *2168-2259 (online)*
(https://jetjournal.us/)
Volume 15, Issue 1 – 2025
Impact Factor: 7.665, UGC CARE I

modernization and human greed. This paper aims to explore human-nature interactions in Bond's selected works through an eco-critical lens. It will analyse how Bond's narratives promote environmental awareness, celebrate the interconnectedness of all life forms, and reflect a moral responsibility toward the natural world. Through stories such as *The Cherry Tree*, *The Leopard*, and *Panther's Moon*, the paper seeks to uncover the subtle but powerful environmental message embedded in Bond's simple yet profound storytelling.

SIGNIFICANCE OF THE STUDY

The study of human-nature interactions in the fiction of Ruskin Bond from an eco-critical perspective holds considerable significance in contemporary literary and environmental discourse. Ruskin Bond's works, deeply rooted in the natural landscapes of India's Himalayan region, provide a unique lens through which readers can explore the intricate and often fragile relationship between humans and the environment. This study illuminates how Bond's narratives not only celebrate the beauty and tranquility of nature but also critique the destructive tendencies of human activity, thereby raising awareness about ecological concerns.

By analyzing Bond's fiction through eco-criticism, the research bridges the gap between literature and environmental ethics, demonstrating how storytelling can influence attitudes toward conservation and sustainability. It highlights the role of literature as a medium for fostering empathy and respect for the natural world, which is crucial in the face of escalating environmental crises such as deforestation, habitat loss, and climate change.

Furthermore, the study contributes to the growing field of Indian eco-criticism by focusing on a prominent Indian author whose works are accessible to a broad audience. It emphasizes the cultural and spiritual connections with nature, encouraging readers to rethink their relationship with the environment. Ultimately, this research advocates for a harmonious coexistence between humans and nature, making it both timely and socially relevant.

ECO-CRITICISM: A BRIEF OVERVIEW

Eco-criticism emerged in the 1990s with the objective of bridging literature and ecology. It questions anthropocentrism—the idea that humans are central to existence—and promotes an ecocentric worldview. According to Cheryll Glotfelty, one of the pioneers of eco-criticism, it is "the study of the relationship between literature and the physical environment."

In the Indian context, eco-criticism is particularly relevant due to the rich biodiversity, deep-rooted spiritual connection with nature, and the increasing environmental challenges faced by the country. Writers like Ruskin Bond play a crucial role in sensitizing readers towards environmental issues through emotionally compelling and aesthetically rich narratives.

RUSKIN BOND AND NATURE: AN OVERVIEW

Ruskin Bond, one of India's most cherished English-language writers, has created a literary legacy rooted deeply in the natural world. Born in 1934 in Kasauli, Himachal Pradesh, and having spent most of his life in the hills of Mussoorie, Bond's intimate connection with the Himalayas and its surrounding flora and fauna is evident throughout his writing. His works reflect a life lived in close communion with nature, and this deep bond has become the foundation for his storytelling.

Copyright © | JET Network, All Rights Reserved

Journal of East-West Thought
ISSN: *2168-2259 (online)*
(*https://jetjournal.us/*)
Volume 15, Issue 1 – 2025

Impact Factor: 7.665, UGC CARE I

Unlike many modern writers who use nature as a mere backdrop, Bond allows nature to play an active and often central role in his narratives. The forests, rivers, mountains, and animals he describes are not passive elements—they possess character, emotion, and agency. His stories feature natural elements as integral parts of human experiences: trees grow alongside children (*The Cherry Tree*), wild animals face extinction due to human encroachment (*The Leopard*), and the weather mirrors the emotional states of his characters. In doing so, Bond gives the natural world a voice, a presence, and a moral dimension.

Bond's perspective on nature is deeply empathetic. He does not view the environment as something to be conquered or exploited but as a companion in life's journey. His writings exhibit a profound respect for the cycles of nature and a sorrowful awareness of its slow degradation. His recurring themes include deforestation, urbanization, and the alienation of modern individuals from the natural world. Through subtle observations, he critiques how human ambition disrupts ecological balance and displaces wildlife.

Bond's eco-consciousness is not presented through overt activism or political argument. Instead, he evokes a sense of wonder and belonging that draws readers into the natural world. His prose, marked by simplicity and lyrical beauty, fosters an emotional connection with the environment. For example, in his autobiographical work *Rain in the Mountains*, Bond reflects on the solace he finds in the forest, writing about the joy of watching birds, listening to the rain, or walking among trees. These everyday interactions with nature become meditative and philosophical acts that reconnect readers with their own lost intimacy with the earth.

Furthermore, Bond's portrayal of children and old people in harmony with nature highlights the purity and wisdom that come from being attuned to the environment. His young protagonists are often more connected to the natural world than adults, suggesting that ecological sensitivity can and should be nurtured from a young age.

In sum, Ruskin Bond's literature offers a gentle yet profound eco-critical insight. His works serve as quiet resistance to ecological neglect and serve as literary sanctuaries where nature is revered rather than ravaged. Through his stories, Bond calls for a renewed sense of harmony, compassion, and coexistence between humans and the environment. His writing not only enriches Indian English literature but also contributes meaningfully to the growing global discourse on literature and ecology.

HUMAN-NATURE INTERACTIONS IN SELECTED WORKS

1. "The Cherry Tree"

In this short story, a young boy named Rakesh plants a cherry seed in his backyard. The story follows the seed's transformation into a tree and reflects the boy's growing connection with it. This seemingly simple narrative highlights several eco-critical concerns:

- The importance of nurturing nature
- Patience and coexistence with natural rhythms
- The silent transformation nature undergoes even when humans ignore it

Bond shows how even a child can contribute positively to the environment and how a simple act of planting a tree can forge a deep emotional bond.

Copyright © | JET Network, All Rights Reserved

Journal of East-West Thought
ISSN: *2168-2259 (online)*
(*https://jetjournal.us/*)
Volume 15, Issue 1 – 2025
Impact Factor: 7.665, UGC CARE I

2. "The Leopard"

This poignant story features a man who encounters a leopard in the forest. Rather than portraying the animal as a threat, Bond presents it as a misunderstood and lonely creature pushed into human settlements due to deforestation. The story critiques human intrusion into wildlife habitats and calls for empathy towards all living beings.

Bond's non-anthropocentric view is evident as he writes, "The leopard did not look at me with fear or anger. There was a sadness in his eyes... as though he missed something he once had."

3. "Panther's Moon"

This story recounts the tale of a panther prowling a village, creating fear among the inhabitants. However, the narrative subtly explores how human encroachment forces wild animals into conflict with humans. While the villagers see the panther as a threat, the animal is merely trying to survive in a shrinking habitat.

Bond skilfully balances human fear with animal vulnerability, making a strong case for the protection of natural ecosystems.

THEMES AND ECO-CRITICAL CONCERNS

1. Anthropocentrism vs. Ecocentrism

Ruskin Bond challenges the human-centered view of the world by presenting an ecocentric perspective, where nature is not subordinate to humans but an equal partner. His stories emphasize the interconnectedness of all life forms, suggesting that human well-being is deeply linked to environmental health. Bond's narratives, such as *The Leopard*, give voice to animals and natural elements, encouraging readers to view them with empathy and respect. This shift from dominance to coexistence reflects a key eco-critical principle and urges a more responsible and humble human attitude toward nature.

2. Loss of Biodiversity and Habitat Destruction

Many of Bond's stories highlight the consequences of human encroachment and deforestation, which lead to habitat loss and threaten biodiversity. In *Panther's Moon*, a wild animal is forced into human territory, symbolizing the shrinking natural world. Bond illustrates how wildlife suffers due to human expansion, yet he avoids preaching. Instead, he evokes sympathy for displaced animals and gently critiques human actions. His fiction becomes a subtle protest against the destruction of forests and natural ecosystems, raising awareness of the urgent need for conservation and coexistence with other species.

3. Spiritual Connection with Nature

Bond portrays nature as more than a physical environment—it is a source of emotional healing, peace, and spiritual insight. Characters in his stories often find clarity, comfort, and companionship in natural surroundings. In *The Cherry Tree*, nurturing a plant symbolizes growth and connection, reinforcing the idea that nature nurtures us in return. This spiritual bond echoes traditional Indian philosophies that regard nature as sacred. Bond's work encourages readers to restore this lost reverence for the natural world, deepening their appreciation for its silent wisdom and inherent value.

Copyright © | JET Network, All Rights Reserved

Journal of East-West Thought
ISSN: *2168-2259 (online)*
(https://jetjournal.us/)
Volume 15, Issue 1 – 2025

Impact Factor: 7.665, UGC CARE I

4. Environmental Ethics and Moral Responsibility

Through everyday scenarios, Bond addresses the ethical responsibility humans have toward the environment. His stories emphasize that protecting nature is not just a duty but a moral obligation. Characters often face choices that reflect broader ecological consequences—whether it's caring for a tree, sparing an animal, or respecting the forest. Rather than offering grand solutions, Bond illustrates how small, conscious actions can make a difference. This theme aligns with eco-critical thought by emphasizing personal responsibility and promoting an ethic of care, respect, and accountability for the environment.

5. Alienation from Nature in Modern Society

Bond's works reflect concern over how modernization and urbanization have distanced humans from nature. He contrasts the serenity of hills and forests with the chaos of urban life, illustrating how this disconnection affects mental and emotional well-being. His stories often show characters rediscovering joy and simplicity through interactions with the natural world. Bond subtly critiques modern values that prioritize development over ecological harmony. This theme serves as a reminder that reconnection with nature is essential—not just for the planet's health, but for human happiness and spiritual fulfillment.

RUSKIN BOND'S LANGUAGE AND STYLE

Ruskin Bond's language and style are marked by simplicity, clarity, and lyrical beauty. His prose is direct and unpretentious, making his stories accessible to readers of all ages. Bond's use of vivid imagery and sensory details brings the natural world to life, allowing readers to see, hear, and feel the landscapes he describes. His sentences are often short and rhythmic, reflecting the calm and quiet of the hills he writes about. Bond's style evokes nostalgia, tenderness, and a deep sense of place. He skillfully blends personal reflection with narrative, creating an intimate tone that draws the reader into his world. His dialogues are natural and believable, capturing the innocence of childhood and the wisdom of old age. Through his subtle and understated writing, Bond conveys profound emotions and environmental concerns without moralizing, making his work both emotionally resonant and thematically rich. His style perfectly complements his eco-conscious themes.

RELEVANCE IN CONTEMPORARY TIMES

Ruskin Bond's writings remain highly relevant in today's world, especially as environmental concerns grow urgent. His sensitive portrayal of nature and human-nature relationships offers valuable insights at a time when climate change, deforestation, and biodiversity loss threaten global ecosystems. Bond's stories remind readers of the beauty and fragility of the natural world, encouraging respect and care rather than exploitation. In an era dominated by technology and urban living, his work calls for reconnecting with nature to restore mental peace and balance.

Moreover, Bond's gentle critique of modernization's impact on the environment resonates with contemporary eco-critical discourse. His depiction of habitat destruction and human encroachment highlights issues still prevalent today, such as wildlife displacement and environmental degradation. His emphasis on small, everyday acts of environmental responsibility inspires readers to consider their own role in conservation.

Copyright © | JET Network, All Rights Reserved

Journal of East-West Thought
ISSN: *2168-2259 (online)*
(https://jetjournal.us/)
Volume 15, Issue 1 – 2025

Impact Factor: 7.665, UGC CARE I

Beyond environmental lessons, Bond's celebration of simplicity, community, and spiritual connection with nature offers a counter-narrative to consumerism and rapid urbanization. His stories encourage sustainable living and mindfulness, values increasingly important in today's fast-paced world. Thus, Ruskin Bond's eco-conscious literature continues to educate, inspire, and remind us of our shared duty to protect the planet for future generations.

CONCLUSION

Ruskin Bond's fiction offers a profound eco-critical perspective that highlights the intricate relationship between humans and nature. Through his simple yet evocative storytelling, Bond brings to light vital themes such as respect for biodiversity, the spiritual bond with the environment, and the ethical responsibility humans bear toward the natural world. His works serve as gentle reminders of the consequences of habitat destruction and the alienation caused by modern lifestyles. By portraying nature as a living, sentient entity, Bond challenges anthropocentric attitudes and encourages an ecocentric worldview that values all forms of life. His stories not only raise awareness about environmental issues but also inspire readers to reconnect with nature through empathy, care, and sustainable practices. In contemporary times, marked by ecological crises, Bond's writings remain deeply relevant, offering both caution and hope. Ultimately, Ruskin Bond's literary contribution enriches eco-critical discourse and motivates a harmonious coexistence between humanity and the natural world.

REFERENCES

1. Bond, R. (1994). *The night train at Deoli and other stories*. Penguin Books India.
2. Bond, R. (1998). *Our trees still grow in Dehra*. Penguin India.
3. Buell, L. (1995). *The environmental imagination: Thoreau, nature writing, and the formation of American culture*. Harvard University Press.
4. Garrard, G. (2012). *Ecocriticism* (2nd ed.). Routledge.
5. Glotfelty, C., & Fromm, H. (Eds.). (1996). *The ecocriticism reader: Landmarks in literary ecology*. University of Georgia Press.
6. Kinkead-Weekes, M. (2005). The green voice in Ruskin Bond's writings. *Journal of Commonwealth Literature*, 40(2), 75–88.
7. Kumar, N. (2017). Nature and human relations in Ruskin Bond's short stories. *International Journal of English Language, Literature, and Humanities*, 5(4), 123–130.
8. Mohanty, S. (2015). Eco-criticism and Indian literature: An overview. *Research Journal of English Language and Literature*, 3(3), 38–44.
9. Naik, M. K. (2014). *A history of Indian English literature*. Sahitya Akademi.
10. Nayar, P. K. (2010). *Contemporary literary and cultural theory: From structuralism to ecocriticism* (2nd ed.). Pearson.
11. Rajan, A. (2011). *Nature and human nature in Indian English literature*. Atlantic Publishers.
12. Saleem, F. (2016). Human-nature relationship in Ruskin Bond's fiction: An eco-critical study. *International Journal of English and Literature*, 7(6), 89–96.

Copyright © | JET Network, All Rights Reserved

Journal of East-West Thought
ISSN: *2168-2259 (online)*
(https://jetjournal.us/)
Volume 15, Issue 1 – 2025

Impact Factor: 7.665, UGC CARE I

13. Sandil, R. (2018). Environmental consciousness in Ruskin Bond's short stories. *Journal of Environmental Studies*, 6(1), 45–52.
14. Sinha, A. (2019). The role of nature in Ruskin Bond's narratives. *Asian Journal of Literature and Culture*, 5(2), 14–22.
15. Thakur, S. (2013). Eco-criticism: A critical introduction. *Journal of Literary Studies*, 29(1), 59–72.

Copyright © | JET Network, All Rights Reserved

The Role of Educational Institutions in Sustainable Development in Rural Area

Mr.Navnath Bombale[1], Mrs.Archna Dnyaneshwar Tandale[2]
1 Asst. Prof. M.V.P. Arts, Commerce and Science College, Trimbakeshwar
Email: joynavnath@gmail.com
2. Asst. Prof. M.V.P. K.P.G.Arts, Commerce and Science College, Igatpuri
Email: Tandalearchana52@gmail.com

Abstract:

The Educational institutions in higher learning are shaping the minds of students with academic knowledge, professional skills and also social skills to contribute to the society. But, how much they are contributing to help the community needs to be studied. The Bahá'í Academy, Panchgani, is conducting educational programmes for promoting Education in Universal Human Values, for higher educational institutions. It is conducting subsequent service learning activities through its programme "Fostering Personal Development and Social Progress". Its primary goal is to foster the personal development of college and university students, as well as to build their moral capacities and empower them to contribute to social progress. The Academy courses have been designed over many years of research and experience to build the capacity of youth to become change makers — visionaries with practical feet and value-based approaches. This study presents a case study of community projects carried by the students of SMBT College of B. Pharmacy, Dhamangaon, Nashik, in collaboration with Bahá'í Academy, Panchgani in Pandhurli village from 2014 to 2021. They addressed various social issues. A survey was conducted in the village through questionnaire and interviews to identify the issues in the village and awareness programmes were conducted by the students to address those issues. This research was carried out to study the impact of those community projects and observed the changes which happened as a result of the community project carried out by the students in the Pandhurli village community.

Introduction: As per NEP, 2020 the curriculum should be holistic, multidisciplinary, flexible and innovative. The NEP states that all HEI curricula must include credit-based courses and community engagement and service projects. Universal human values, life skills, seva/service lessons, and participation in community service programmes will be considered essential components of a holistic education(NEP 2020). Accordingly universities and colleges are trying to adopt and design the curriculum in such a way so that students should develop their academic knowledge, professional skills and life skills/ social skills. Since the year 2004 the programme of the Bahá'í Academy,"Fostering personal development and social progress" has been adopted by the universities, colleges and institutions of higher learning. The programme of the Bahá'í Academy is focused on providing the students to develop their academic knowledge as well as they are able to practice moral behavior and contribute to the social progress by service learning activities. Service learning activity is the integral part of the programme because if student learn the theory then he should practice/ apply his knowledge for better learning. It helps to develop community while students are applying their knowledge for betterment of society at the same time students understand the concepts with clarity.

Service-learning in higher education provides opportunities for students to develop intellectually, socially, and spiritually. Service-learning is more than just extension services or outreach activities: it connects a community's knowledge and needs with course content and student action in the field for the purpose of learning. This study was carried out to evaluate the impact of service learning activities carried out by the students of SMBT college in the village Pandhurli over a period of 7 years from 2014- to 2021.

Review of literature: Because community service learning is not made compulsory, it can be a co-curricular activity or programme. It is something that students do outside of or in addition to their academic studies that plays an important role in other areas of development. Rest and Narvaez (1991) recognized community service as a means of promoting students' social and moral development. Community service learning programmes have been used as an interesting pedagogy for the past two decades. According to Jacoby (1996), it is the methodology and teaching technique that connects academic learning and community service so that each helps the other achieve educational goals. Community service learning is important in developing social skills by fostering ethical and responsible citizens.

In today's world, commercial agendas have influenced many of our educational institutions' goals setting, whereas in the past, one of the main objectives of public education institutions was to instill civic responsibility in students (Sears, 2003).

Traditionally, educational institutions have prepared students for the demands of the world by emphasizing critical thinking and social responsibility, as well as the importance of contributing to the community and participating in social activities. This idea supports John Dewey's (1937) stance, a higher education pioneer, that it is the responsibility of all societies to provide equal opportunity for educational advancement to all. He believed that all members of a society have a responsibility to be socially responsible and to engage in critical thinking in order to improve the overall quality of human interaction. It is believed that improving the overall quality of human interaction can be accomplished by instilling social skills that can be developed during childhood and nurtured by helping others. Voluntary assistance to others leads people for engagement in community service (Dewey, 1916).

Previous research indicates that learning through community service fosters greater accountability to fulfill social responsibilities (Kolenko et al. 1996) and provides students with an opportunity to grow into a civically engaged environment (Godfrey 1999). Such learning allows students to practice giving back to society as a whole while also supporting classroom learning through experiential activities, one of which is community service (McCarthy & Tucker 1999). It provides students with life skills that benefit the community and society as a whole by incorporating community service into the core curriculum. Furthermore, it assists teachers in integrating education, learning, and humanity (Andrews, 2007). Students become more active as a result of their involvement in community service programmes, and educational organizations become involved with the community and begin working on societal issues.

The domains of community service learning, community work, civic engagement, and voluntary or honorary work with society have recently become more popular and popular research study topics, and researchers and educators have begun to recognise the importance and psychosocial requirements of giving back to the community (Ferber 2007).

Sustainable rural development is critical to a country's cultural, social, and environmental viability. Because global poverty is largely rural, poverty eradication is critical. Poverty representation extends beyond the urban-rural divide, with sub-national and regional implications (UN, 2009). As a result, it is critical and valuable to organize, as needed, rural development initiatives that contribute to sustainable livelihoods through global, international, national, and local efforts. Rural development strategies should consider the remoteness and potential of rural areas and provide targeted differentiated approaches in the fields of health care, hygiene and cleanliness, medical facilities, education, transportation, socio-cultural issues such as caste discrimination, addictions, water management, availability of drinking water to villagers, availability of toilets, and so on.

Students must improve their abilities to comprehend and address these various issues. They must develop the skills, expertise, and knowledge required to address these issues.The goal of Service Learning Activities is to instil in students a sense of community and a desire to help others by implementing innovative methods for the socioeconomic and cultural development of rural villages.
Benefits of Service Learning Activities for Rural Community Partners Increases collaboration opportunities with HE institutions, Provides opportunities for participation in the teaching and learning process, fosters personal and professional development of students, and prepares them to be responsible citizens of tomorrow.

Community Service Implementation
Service Learning Activity is a method of involving students in service activities that meet community needs along with learning curriculum and/or content relevant to the service and reflecting on the service experience. A learning component that is balanced with the service aspect should be developed to maximize the benefits of community service. By learning and helping others at the same time, you can develop your culture and society, as well as learn about life and create character that will impact the world in the future.
Service is a component of the community service project in which students spend time assisting the general public in meeting their needs; reflection is simply a scheduled account of one's own thoughts and experiences. This can be accomplished by keeping daily journals. Students are professionally developed through community service projects.It initiates community development using students ' academic expertise and empower students to work with other students to provide solutions for issues and problems of the community.(P.G. Gurusamy Pandian,2020)

The following figure demonstrates the benefits of Service-Learning for a rural community as well as to the students:



Figure 1: Source- Bender, S. (2014)

The first phase of the project involves determining the project's requirements. Figure 2 illustrates this. Students visit nearby rural villages and conduct surveys, interviews, and interactions with village leaders, local self-government, and common peoples to identify the specific needs of the community. The identified problems may be related to poverty, unemployment, illiteracy, daily living problems, water and sanitation, irrigation, and farmer needs, as well as other social issues such as gender equality and addiction among youth, prevalent prejudices and caste discrimination, and so on.

The first phase of implementation involves developing an action plan based on the community's assessed needs. The project's next step is to integrate with academic expertise. It must be related to community needs, curriculum, and student interests. The second phase is the process of implementing community service projects. Based on the prepared proposal, students create a plan and conduct community action. The target group's and community agencies' feedback will be incorporated and used to create a structured plan for implementation. Based on the project's requirements, the students form partnerships with local institutions such as village panchayats, municipalities, anganwadis, self-help groups, rural schools, village leaders, and

care takers. Following implementation, students evaluate the project's impact and sustainability and prepare a presentation(Baha'i Academy, 2015).

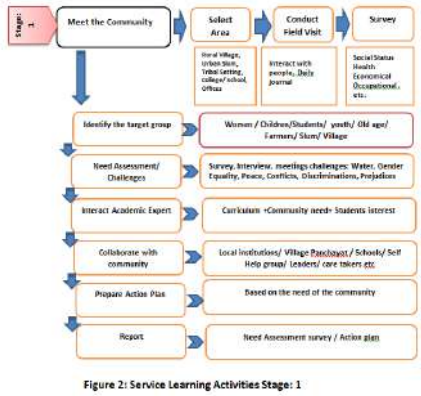


Figure 2: Source- GurusamyPandian&Ashifa (2020)

The present investigation tried to evaluate the role of community service projects carried out by the students of SMBT College in the village Pandhurli for the rural development.

Methodology:

This study addressed various prevailing issues/challenges for the sustainability of the village, which is basically for implementing community service projects by students of SMBT College. The purpose of carrying out this research was to explore the impact of community service learning activities carried out by the students. Thus, the research question to guide the study was: What are the impacts of service learning activities carried out by the students over a period from 2014 to 2021?

The study was carried out in Pandhurli village. Qualitative research method was applied for the present research study. The students carried out the service learning activities in the following four stages:

Four stages of the Service learning activities :.(Baha'i Academy, 2015)

1. Preparation stage: At this stage consultations are held at various levels. At the level of the study group, group members / co-learners consult to select a target community. Once this is done they arrange initial interactions and consultations with the community members to access and identify social needs and available resources of the community. Students co-relate them with the curriculum, find more facts and analyze the needs. Together with the community members an action plan is prepared. A partnership between the study group and the target community is necessary to ensure full participation of the stakeholders in the process for social action. Survey forms, government or media reports, or other sources of information can be used to identify the needs of the community and their available human and other resources. A sample "Need Assessment" format is available in this module. During this stage the study group/ co-learners will engage in critical thinking -- a skill needed to bring about change. Therefore asking critical questions becomes a necessity to understand the problems and needs more deeply. After assessing the needs, the study group/ co-learners can involve the community members in preparing an evening programme of show and talk, commonly known as the "Happy Hippo Show". Happy Hippo Show is an interactive theatre art form. It provides platform where presenters and the village people interact on specific issues to find solutions together. (www.bahaiacademy.org/bahaiacademy/ and http://acmerussia.ru/zipopo.html)

2. Implementation stage: The possibilities for action are enormous. The students' capabilities, enthusiasm and concern for others are continuously enhanced as they pursue their service learning activities. Besides working with the community members, students also learn working with the institutions. Throughout this stage the students must keep in mind the vision and aim of their plan. Students are encouraged to keep a daily reflective journal of happenings and the personal or social lessons they learn, whether small or big, or the questions they wish to learn about. These journals are of great benefit to them to monitor their progress and evaluate their activities. It will also help them in preparing their final project reports.

3. Evaluation stage: This is a stage when one looks backwards to prepare for the next move forward. The service learning activities generate a lot of experience and knowledge. Reflection enables the students and stakeholders to internalize those experiences and examine their connections with their own personal development and their impact on the community they served.

Evaluation or reflection is not simply a report sharing session. What makes reflection a transforming experience is when the actors compare their original assumptions and perceptions with the real experience they have had in their service learning activity. Questions are asked and investigations are encouraged so that a new level of understanding is achieved.

Another important aspect of the evaluation stage is when the study groups/ co-learners decide what changes they would like to bring about to improve some aspects of their service learning. Use of artistic presentations, songs, poetry, skits, etc. is encouraged during the reflection sessions.

4. Presentation: In this stage the study groups/ co-learners share with others what they did and achieved during the various stages of their service learning activity. They are encouraged to use different methods such as display/exhibition, artistic performance, celebration, presentation, wall bulletins, or articles for this purpose. This is a very important stage and it generates awareness among others and consolidates the students' own learning. The college may wish to arrange the demonstration Programme so that it can also acknowledge the services of the students and other stakeholders. It can prove to be the source of great joy and confidence building for the students and strengthen college ties with the community.

Participation:

Service learning activities were conducted by the B. pharmacy 2nd year students of SMBT College of Pharmacy, Dhamnagaon, Nashik. They carried out the activities over a period of span from 2014 to 2021.Every year about 60-65students from 2nd year B.Pharm. had undergone the training on "Education in Universal Human values" conducted by Baha'i Academy. They conducted service learning activities in Pandhurli village. This village was adopted by the college for community service. Every year different batches of the students continued service learning activity in the village. Around 300 students participated in this service learning activity through the span of 2014-2021.About 170 families participated in these projects and approximately700 family members benefited from the Service Learning Activities.

Issues Addressed by the students:

1. Environmental Cleanliness and hygiene-(2013-14)
   - i) Plastic waste management
   - ii) Management of household garbage- (wet and dry)
   - iii) Management of household wastewater

iv) To create awareness about household and public toilets
v) Awareness about generic medicine

The students carried out the survey in the village by interviewing the villagers about these aspects. They created awareness with the help of Happy Hippo Show, displaying of posters, consultations with the family members and members of Gram Panchayatas well as school children.

2. Caste discrimination-(2015-16)the students collected information about prevailing caste discrimination in the villagers. Then they created awareness about unity in diversity through Happy HippoShow and posters and visited the families and discussed with them about the importance of unity for development of the village as a whole.
3. Awareness about de-addiction-(2015-16)A survey was conducted to find out the extent of addiction
(Alcohol, tobacco,gutkha, ganja) among the village youth, and the students carried out Happy Hippo Show to create awareness about de-addiction and its importance for betterment of families.
4. Decision making process of Gramsabha-(2015-16) a survey was also conducted to find out whether the villagers are part of decision making process in Gramsabha.They visited households and convinced and explained the importance of active participation in the decision making process for the betterment of village and villagers.
5. Awareness about Generic Medicines- (2016-17, 2020-21) The students carried out a survey to find out the awareness about generic medicines among the villagers, and as Pharmacy students, they took the initiative to educate the villagers about the generic medicines. They contacted the village doctors and persuaded them to prescribe generic medicines as they are low cost medicines affordable by the tribal people of the village. About 60 students shared their helpline numbers with villagers and provided about 100 medical shops lists in Nasik city where generic medicines were made available.

Findings and discussions:

1. Environmental Cleanliness and hygiene-
   - Plastic waste management
   - Management of household garbage (wet and dry)
   - Management of household wastewater
   - To create awareness about household and public toilets

The result of the survey indicated that the problems pertaining to the above mentioned issues were very much severe in the year 2013-14,therewas un-cleanliness on the roads, garbage everywhere, dirty and open drainage, drainage water flowing on roads. When the students began their service learning activities along with the gram panchayatin the village, as can be seen from the figure3, the intensity of environmental issues dropped down to 72% in the year 2015-16 and with consistent activities carried out by the students every year, the environmental problems were found to be reduced to 5% in the year 2020-21.

Conclusion: The impact of service learning activities carried out by students was effective in reducing the environmental and hygiene issues in the village substantially, showing that consistent efforts, if carried out can result in positive changes.

Household toilets / Public toilets- In the beginning year 2013-14, 64.7% people responded that there were no toilets in the village and people were going in the open fields for defecation. But as the awareness activities

began, it reduced to 43% and in the year 2021 only 7% people responded that there are no public toilets, which indicated that with the awareness program taken by the students and the actions taken by the grampanchayat, the situation was greatly improved, as can be seen from fig. 4.

Conclusion: The impact of service learning activities carried out by students was quite effective in construction of household and public toilets, with the initiative of gram panchayat and individual households in the village. In the year 2020-21 there were mere 9% houses which did not have toilets as compared to the year 2013-14 when the activities were started, 64% of the houses did not have toilets.

2. Cast discrimination in the village

From the feedback received regarding caste discrimination in the village, it was observed that in the year 2013-14 when the service learning activities began, 18% of people said that there was caste discrimination observed among the villagers, whereas in the year 2015-16 it was 35%, and in the year 2020-21, only 9% people said they faced caste discrimination.

Conclusion: Even though the findings indicate that there was more percentage of people said there was caste discrimination in the year 2015-16 as compared to 2013-14, but the situation in 2020-21 was encouraging, where only 9% people responded that they faced caste discrimination in the village.

3. Awareness about de-addiction- From the data related to efforts taken for de-addiction to alcohol, tobacco, gutkha and ganja etc. It was observed that there was no remarkable change in addiction among the villagers. It more or less remained the same. In the year 2013-14 it was 60%, in 2015-16 it was 50% and in 2020-21 it was 56%.

Conclusion: The findings related to the study on de-addiction indicated that more efforts or different approaches need to be taken to address this issue.

4. Decision making process of Gramsabha

The data on this aspect shows that in the year 2013-14, there were 27% people responded they were not involved in the village decision making processofGramsabha, while in 2015-16 only 17% participants said they were involved in the decision making process. Whereas in the year 2020-21, 81% people responded that they were no longer associated in the decision making process

Conclusion: As can be seen from the observation, that in the year 2013-14, 2015-16 there were more people associated with the decision making process of the village, since there were many issues to be addressed, but in the year 2020-21 very less percentage of people were involved in the decision making process, as many of the issues have been resolved.

6.**Awareness about Generic Medicines**- Initially there was a lack of knowledge about generic medicines among the villagers in the year 2015-16, where almost none of the villagers had any idea about the generic medicines. The students then prepared Happy Hippo Show, posters and they visited house to house and explained the importance of generic medicines to create awareness among the villagers. And they were provided with the contacts where Generic medicines will be available. As a result in the year 2016-17,the percentage of people not knowing about generic medicines was 78% and in the year 2020-21 only 22% people were unaware about the generic medicines as can be seen from

Conclusion: From the findings it can be concluded that the consistent actions taken by the students to create awareness about generic medicines has shown a very remarkable improvement and the percentage of villagers who were aware about the generic medicines, increased to a greater extent and so in the year 2020-21 the percentage of people who were ignorant was only 22%. Further consistent action to address the issue may result in the whole population being aware about generic medicines, which would help them to purchase medicines at very low cost.

Overall Recommendations and Conclusion

A Service Learning Activity is based on community service and may incorporate service into academic outcomes or co-curricular activities. Community service activities are planned under the supervision of college administrations or adults who assist students in becoming socially responsible and who educate and train other members of the community who work in some way to develop the society and improve the environment and living conditions. According to the findings and results of the research study, community service learning Activity improved the conditions of garbage collection and disposal, drainage water, and plastic waste spread. People stopped throwing away household waste.

There were toilets constructed in each household with the inspiration of the students and the action taken by the Gram Panchayat. The villagers started segregating their household garbage and Ghanta gadi was stated for the collection and disposal of household waste. Few farmers started using the wet waste in their farms as manure/compost. The awareness about the generic medicines increased among the villagers. It was observed that through consistent Service Learning activities conducted by the students, with the initiatives taken by the Higher Education Institution, they were able to improve the conditions in the village. This study indicates that the role of educational institutions in rural community development, can contribute to address the various issues of the village and bring about improvement in the conditions. And hence the Higher Education Institutions can play a major role to address the various challenges through the Service Learning Activities for rural development.

References:

1. Andrews, C. P. (2007). Service learning: Applications and research in business. Journal of Education for Business, 83(1), 19–26.

2. AzminaAfzal, (2020). Impact of Community Service Learning on the Social Skills of Students, Journal of Education and Educational Development,7(1), 55-70, DOI: http://dx.doi.org/10.22555/joeed.v7i1.2988

3. Baha'i Academy, (2015). Students' Project Book, ServiceLearning Activities: Education in Action. ISBN 978-93-83937-01-1

4. Bender, S. (2014). Service-Learning Community Manual Retrieved April 9, 2020, from the World Wide Web, http://ccncce.org/wpcontent/uploads/2014/06/ServiceLearningCommunityManual.pdf

5. Dewey, J. (1937). Education and social change. In the later works of John Dewey. Vol. 11. Carbondale, Ill.: Southern Illinois University Press.

6. Dewey, J. (1916).Democracy and education: An introduction to the philosophy of education. Reprint. New York: The Free Press.

7. Ferber, J. (2007). Encouraging a culture of interest in others: American and Russian children connect'. Community Works Journal, summer issue.

8. Godfrey, P. C. (1999). Service-learning and management education: A call to action. Journal of Management Inquiry, 8(4), 363-378.
9. GurusamyPandian, P.G. &Ashifa, K.M.(2020), Community service implementation model for the Sustainability of rural villages, Journal of Information and Computational Science, Volume 10 Issue 6 –,ISSN: 1548-7741
10. https://sustainabledevelopment.un.org/topics/ruraldevelopment/decision
11. Jacoby, B., & Associates (1996).Service-learning in higher education. In B. Jacoby (Eds.), Service-learning in higher education: Concepts and practices (pp. 3-25). San-Francisco: Jossey-Bass.
12. Kolenko, T. A., Porter, G., Wheatley, W., & Colby, M. (1996). A critique of service learning projects in management education: Pedagogical foundations, barriers, and guidelines. Journal of Business Ethics, 15(1), 133-142.
13. McCarthy, Anne M., & Tucker, M. L. (1999). Student attitudes toward service-learning: Implications for implementation. Journal of Management Education, 23(5), 554– 573.
14. Rest, J. R., & Narvaez, D. (1991).The college experience and moral development. Handbook of moral behavior and development. Hillsdale, NJ: Erlbaum.
15. Sears, A. (2003). Retooling the mind factory: Education in a lean state. Toronto: University of Toronto Press.
16. UN. (2009). Decisions by Topic: Rural Development. Retrieved from www.un.org:

'RESEARCH JOURNEY' International E- Research Journal | E-ISSN : 2348-7143
Vol. 11, Issue-4 : Multidisciplinary Issue | Oct.-Dec. 2024
Impact Factor 6.625 (SJIF) | Peer Reviewed Journal

Dr. B.R. Ambedkar's Contribution for Configuring Indian Constitution

Mr. Manoj Shrikrushna Magar
Assistant Professor,
Department of Political Science,
MVP Samaj's K.P. G Art's, Commerce and Science College Igatpuri, Dist. Nashik

Abstract:

Dr. B.R. Ambedkar's role in the drafting of the Indian Constitution is of paramount significance in the history of modern India. As the Chairman of the Drafting Committee, he played a pivotal role in shaping the foundational document of the world's largest democracy. This research paper explores the multifaceted contributions of Dr. Ambedkar in the framing of the Indian Constitution, emphasizing his vision for a just and inclusive society. The paper also examines the challenges he faced during the drafting process and the enduring impact of his work on India's constitutional framework. Dr. B.R. Ambedkar played a significant role in the Indian Constitution, serving as the first Law Minister and Chairman of the Drafting Committee. His contributions to the document's writing, drafting, and structuring were significant, as he guided the committee towards a socialistic, idealistic vision. Granville Austin identifies Dr. B.R. Ambedkar's document as a social document addressing basic problems for mass amelioration. Dr. Ambedkar provided constitutional assurances for civil liberties, including freedom of religion, untouchability, and discrimination banning. He advocated for financial and social rights for women and won support for job reservations in Indian Civil Services and schools for planned castes and scheduled tribes.

Keywords: Individual Rights, Socio-economic equalities, Constitutional law, untouchability.

Introduction:

Dr. Bhimrao Ramji Ambedkar, widely regarded as the "Architect of the Indian Constitution" was a visionary leader, jurist, and social reformer who dedicated his life to the upliftment of marginalized communities in India. His leadership and intellectual prowess were instrumental in creating a constitution that not only laid the basis for India's democratic governance but also preserved principles of social justice, equality, and fundamental rights. India's struggle for independence from British colonial rule was accompanied by a simultaneous struggle for social justice and equality among its diverse population. The need for a constitution that would accommodate the objectives and rights of all citizens was evident. The Constituent Assembly of India, comprising representatives from various communities and regions, was tasked with drafting the Constitution. Dr. B. R. Ambedkar was elected as the Chairman of the Drafting Committee, a position of immense responsibility. India was under British colonial rule for nearly two centuries, from the mid-18th century until 1947. This period was marked by exploitation, discrimination, and the systematic suppression of Indian cultures and traditions. The social fabric of India was deeply affected by British policies, which often exacerbated existing social inequalities, particularly the caste system. Struggle for Indian independence gained momentum in the late 19th and early 20th centuries. Various nationalist movements and leaders, such as Mahatma Gandhi and Jawaharlal Nehru, advocated for self-rule and an end to colonial oppression. The caste system was a deeply ingrained social hierarchy that divided Indian society into rigidly stratified groups, with Dalits (Scheduled Castes) at the bottom, facing severe discrimination and untouchability.

Scanned with OKEN Scanner

Brief Background of Ambedkar:

Bhimrao Ramji Ambedkar was a member of the Mahar caste and was born an untouchable in Mhow, Madhya Pradesh, in 1891. He attended the London School of Economics and Columbia University, where he received his PhD and graduated as a barrister. He committed his life to improving the untouchable neighbourhood. He gathered untouchables, created groups like the Bahishkrit Hitkarni Sabha, the Independent Labour Party, and the All India Scheduled Caste Federation, and took part in Round Table Conferences to inspire supporters. Bhim never forgot what happened. He learned as he grew older that what Hindu culture referred to as "untouchability" was illogical as a result of such stupid taunts. The local barbers were reluctant to trim his hair because of their potential for contamination, so his sister had to do it at home. She would only be able to say that it has always been that way if he questioned her why they were considered "untouchables". This response was insufficient to satisfy Bhim. He was aware that just because something has always been a certain way doesn't imply it has to remain that way going forward. It could alter. With his mother gone and his father working far from the village where Bhim attended school at this tender age, he was fortunate. Finally, he embraced Buddhism in 1956 and encouraged his followers to do the same. He believed that being a Hindu would prevent the end of untouchability and the spiritual advancement of the untouchables.

Vision for Social Justice:

Dr. B.R. Ambedkar's profound commitment to social justice was evident in his relentless advocacy for the inclusion of provisions that safeguarded the rights and dignity of marginalized communities, including Scheduled Castes and Scheduled Tribes the Constitution's affirmative action policies, such as reservations in education and employment, were a direct result of his efforts. Ambedkar firmly believed that caste-based discrimination was a deep-rooted evil that had to be eradicated for India to progress as a just and equitable society. Ambedkar advocated for the annihilation of caste, arguing that social justice could not be achieved without dismantling the hierarchical caste system. Ambedkar championed the idea that every individual, regardless of their caste, should have equal rights and opportunities in all aspects of life, including education, employment, and social participation. Dr. Ambedkar believed in meritocracy, where a person's abilities and qualifications, rather than their caste, determined their opportunities. Dr. B. R. Ambedkar played a pivotal role in the inclusion of affirmative action measures in the Indian Constitution. He believed that reservations in educational institutions, government jobs, and legislatures were necessary to uplift historically marginalized groups and provide them with a level playing field to compete in society. For Ambedkar, social justice meant ensuring the social equality and dignity of all individuals. He worked towards abolishing the practice of untouchability and securing the rights of Dalits to access public spaces and resources without discrimination. Dr. B. R. Ambedkar recognized the importance of political representation for marginalized communities. Dr. B.R. Ambedkar advocated for reserved seats in legislative bodies to ensure that the voices of the oppressed were heard in the decision-making process.

Education was a key instrument in Dr. Ambedkar's vision for social justice. Dr.B.R. Ambedkar believed that education could empower individuals to break the shackles of caste-based discrimination and pursue their aspirations. Ambedkar himself was a highly educated individual and encouraged others from marginalized backgrounds to seek education as a means of empowerment. Dr. B. R. Ambedkar also emphasized land reforms as a means to alleviate the

Scanned with OKEN Scanner

economic disparities faced by marginalized communities. Dr. Ambedkar argued for the redistribution of land to the landless and the creation of opportunities for agricultural and economic self-sufficiency. Dr. B. R. Ambedkar was a proponent of gender equality as an integral part of social justice. Ambedkar advocated for women's rights and fought against gender-based discrimination, emphasizing the need for equal treatment and opportunities for women. Through his work in the drafting of the Indian Constitution, Ambedkar ensured that it included robust legal and constitutional safeguards for the protection of the rights of marginalized communities. These safeguards continue to play a crucial role in upholding social justice in India.

Dr. B.R. Ambedkar's vision for social justice was rooted in the principles of equality, liberty, and fraternity. His legacy continues to inspire social reform movements and policy initiatives aimed at creating a more just and inclusive society in India.

Dr. B.R. Ambedkar's Thought and Contributions:

Dr. B.R. Ambedkar emerged as a prominent leader and intellectual during this period of profound social and political change. His thoughts and contributions were deeply rooted in his experiences as a Dalit and his academic pursuits in law and economics. Here's how Ambedkar's ideas and actions shaped the formation of the Indian Constitution. Ambedkar dedicated his life to fighting against caste-based discrimination and the plight of Dalits. His early works, such as "Annihilation of Caste" (1936), challenged the orthodox Hindu caste system and called for its abolition. Dr. B.R. Ambedkar represented the Depressed Classes (Dalits) at the Round Table Conferences in London during the 1930's. Dr. B. R. Ambedkar demanded separate electorates for Dalits to ensure their political representation, a demand that was eventually accepted and reflected in the Communal Award of 1932.Ambedkar's appointment as the Chairman of the Drafting Committee of the Indian Constitution in 1947 marked a crucial turning point. His leadership was instrumental in shaping the constitutional framework of independent India. Dr. B. R. Ambedkar's commitment to social justice was evident in his efforts to include provisions in the Constitution that safeguarded the rights of Dalits and marginalized communities.

These provisions included reservations in educational institutions, government jobs, and legislatures to uplift historically oppressed groups. Dr. B.R. Ambedkar played a vital role in ensuring that the Constitution guaranteed fundamental rights and individual liberties to all citizens, irrespective of caste, religion, or gender. He believed in the principles of equality, liberty, and fraternity. The Constitution explicitly abolished untouchability and promoted social equality, reflecting Ambedkar's vision for a casteless society. Dr. B.R. Ambedkar also advocated for gender equality and the protection of women's rights. He was instrumental in including provisions in the Constitution that ensured equal treatment and opportunities for women. As the Chairman of the Drafting Committee, Ambedkar played a crucial role in shaping India's federal structure, ensuring a balance of power between the central and state governments. Dr. B. R. Ambedkar's contributions to the Indian Constitution were driven by his unwavering commitment to social justice, equality, and individual liberties. His vision, grounded in the struggle against caste discrimination and colonial oppression, left a lasting impact on the foundational document of independent India, and his ideas continue to shape the nation's commitment to justice and inclusion. Dr. B.R. Ambedkar was a strong proponent of fundamental rights and individual liberties. Dr. B.R. Ambedkar played a vital role in ensuring that the Constitution guaranteed these rights to all citizens, irrespective of caste, creed, or gender. His unwavering commitment to ending the practice of untouchability is reflected in the Constitution's abolition of untouchability

Scanned with OKEN Scanner

and the promotion of social equality. Dr. B. R. Ambedkar also advocated for gender equality, leading to the inclusion of provisions related to women's rights, including the right to equality and prohibition of discrimination on the grounds of gender. He played a key role in shaping India's federal structure, ensuring a balance of power between the central and state governments.

To Ensure Fundamental Rights:

The Fundamental Rights guaranteed to every person and the Directive Principles used by the government and legislature to govern the nation form the foundation of the Constitution. They are intended to protect citizens' fundamental rights so that they are not subject to the legislators' shifting ideologies. The chapter on fundamental rights highlights the development of a casteless, classless, and homogenous society while upholding the dignity of man as a human being. The constitution of India was largely influenced by Dr. Ambedkar's contributions. No one devoted more time and effort to create the Constitution than Dr. Ambedkar, who left a lasting and unsurpassable mark on the history of the independent Indian country. As long as the Indian Constitution exists, Dr. Babasaheb Ambedkar's name will live on in awe. Every oppressed person will always remember him in their hearts (Ranjithkumar, 2011). To Adopted Democratic System No one devoted more time and effort to create the Constitution than Dr. Ambedkar, who left a lasting and unsurpassable mark on the history of the independent Indian country. As long as the Indian Constitution exists, Dr. Babasaheb Ambedkar's name will live on in awe. Every oppressed person will always remember him in their hearts.

State Socialism:

In the draught Constitution, Dr. Ambedkar promoted his "state socialism" economic theory. He advocated collectivised farming under state control, along with a modified version of state socialism in the industrial sector. However, he was unable to include his plan for state socialism as a part of the Constitution due to significant resistance in the Constitution Assembly.

Challenges Faced:

Opposition and Controversies Ambedkar faced resistance and criticism from various quarters, particularly regarding reservations and minority rights. However, he remained steadfast in his commitment to the principles of justice and equality. Balancing the aspirations of a diverse population and ensuring that the Constitution catered to the needs of different communities was a formidable challenge that Ambedkar navigated with skill and dedication. Dr. B. R. Ambedkar's contributions to the Indian Constitution have left an indelible mark on the nation's legal and political landscape. His vision for social justice and equality continues to shape India's constitutional framework. Beyond the constitutional sphere, Dr. B.R. Ambedkar's work has had a profound impact on Indian society. His advocacy for social reform and the empowerment of marginalized communities remains a driving force in contemporary India.

Conclusion:

Dr. B. R. Ambedkar unrelenting dedication to social justice, equality, and individual liberty is demonstrated by Ambedkar's contributions to the creation of the Indian Constitution. His foresight, tenacity, and intellectual prowess were crucial in establishing India's democratic and inclusive administration. Generations of Indians have been motivated to fight toward a more just and equitable society by Dr. Ambedkar's legacy. Our fight is for independence, not merely for material advancement and political influence, but also for the recovery of human personality,

Scanned by CamScanner

Scanned with OKEN Scanner

which was stifled and damaged by the Hindu social system and is still being suppressed and maimed today. The speaker of these lines is a reformer, democratic leader, and master orator, as these sentences themselves suggest. Many great people throughout history have dedicated their lives to the cause of liberation and the elevation of the weak victims of the system in their own nations. None other than Dr. B.R. Ambedkar, a champion of human rights, is the one who said the words above. He had a multifaceted personality. In addition to being a brilliant thinker and philosopher, he was also a passionate reformer, a real revolutionary, and a prolific writer. He was praised as an "organic thinker" by German philosopher Antonio Gramsci in the 1940s. The fundamental values of liberty, equality, and brotherhood formed the basis of Ambedkar's life philosophy. According to him, a great man must function as the scourge and scavenger of society and be driven by the dynamics of a societal mission. These characteristics define an illustrious person as a great man and form his title-deeds to respect and adoration. He did, in fact, meet every requirement for becoming a great man. His claim to this dignity is based on the societal goals he worked for and the manner in which he did it. His storey is one of remarkable triumphs and tribulations.

References:

1. Acharya, S. S. (2022). Persistent Inequalities in Health-Contextualising the Neglect of Dr. B.R. Ambedkar"s Contribution. In Mapping Identity-Induced Marginalisation in India: Inclusion and Access in the Land of Unequal Opportunities (pp. 341-362). Singapore: Springer Nature Singapore.
2. Ambedkar, B. R. (1990). Dr. Babasaheb Ambedkar: Writings and Speeches, Vol. 7. Government of Maharashtra, Bombay, 243.
3. Ambirajan, S. (1999). Ambedkar's contributions to Indian Economics. Economic and Political Weekly, 3280-3285
4. Begari, J. (2010). Jyotirao Phule: A Revolutionary Social Reformer. The Indian Journal of Political Science, 399-412. 8. Laxman, M. (2019). Contribution of Ambedkar in India's Federal Finance System. Contemporary Voice of Dalit, 11(1), 8-16.
5. Mishra, S. N. (Ed.). (2010). Socio-Economic and Political Vision of Dr. BR Ambedkar. Concept Publishing Company.
6. Rathore, A. S. (2021). BR Ambedkar: the quest for justice. Oxford University Press India.
7. Sharan, R. (2016). Dr. BR Ambedkar role in making of the Indian constitution. International Journal of Advanced Research in Management and Social Sciences, 5(12), 154-164.
8. Srinivasa, D. (2019). Contribution of Dr. Br Ambedkar for Indian Society: An Overview. New Horizons of Dalit Culture and Literature, 94.

Scanned with OKEN Scanner

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Women Empowerment In The Indian Scenario: Opportunities, Challenges, And The Role Of Government Policies

Mr. Manoj Shrikrishna Magar
Assistant Professor
Department of Political Science
MVP Samaj's
K P G Arts, Commerce & Science College, Igatpuri, Dist. Nashik 422403

Abstract

Women empowerment in India is a multifaceted process involving the enhancement of women's access to education, economic opportunities, political participation, and healthcare, ultimately enabling them to contribute meaningfully to society. This article explores the current state of women empowerment in India, focusing on opportunities in various fields such as education, economic participation, and healthcare. It also examines the significant challenges faced by both working and household women, including the dual burden of professional and domestic responsibilities, workplace discrimination, and societal and cultural barriers. The role of government policies in promoting women empowerment is analyzed, with a focus on initiatives like Beti Bachao Beti Padhao, Pradhan Mantri Mudra Yojana, and the reservation of seats for women in local governance. Despite the progress made, persistent challenges such as gender inequality, health-related issues, and economic dependence underscore the need for continued efforts to create an enabling environment for women. The article concludes by emphasizing the importance of addressing socio-cultural norms and strengthening policy implementation to achieve true women empowerment in India.

Keywords: Women empowerment, India, Gender equality, Education, Economic participation, Political representation, Healthcare, Government policies, Social barriers, Women's rights

Introduction

Women empowerment in India has been a focal point of discussions and initiatives for several decades. The country, with its diverse cultural, social, and economic landscape, presents a unique scenario where traditional gender roles coexist with rapid modernization and globalization. Women empowerment, in the Indian context, refers to the process of enhancing women's access to education, economic opportunities, political participation, and healthcare, thereby enabling them to make informed decisions and contribute meaningfully to society.

Scanned with OKEN Scanner

This article delves into the current state of women empowerment in India, focusing on opportunities in various fields, the challenges faced by working and household women, and the critical role of government policies. By examining these aspects, we can better understand the progress made and the obstacles that still need to be addressed.

Opportunities in Various Fields

Education

Education is the cornerstone of women's empowerment. In recent years, there has been a significant increase in the enrollment of girls in schools and higher education institutions across India. The Right to Education Act, of 2009, and initiatives like *Beti Bachao Beti Padhao* have contributed to this positive trend. According to the National Statistical Office (NSO) report, the female literacy rate in India has risen to 70.3% in 2021 from 64.6% in 2011.

However, challenges remain, especially in rural areas, where the dropout rates for girls are still high due to socio-economic factors, early marriages, and lack of proper infrastructure. The availability of scholarships and reservation policies for women in higher education institutions has also opened up opportunities for women to pursue higher education and professional courses.

Economic Participation

Women's economic participation is crucial for the overall development of the country. In urban areas, women are increasingly taking up roles in various sectors such as IT, finance, healthcare, and entrepreneurship. The growth of the digital economy has created new avenues for women to engage in e-commerce, freelancing, and remote work, thus enabling them to balance work and household responsibilities.

The government has also introduced several schemes to encourage women entrepreneurs, such as the Pradhan Mantri Mudra Yojana, which provides financial assistance to women to start their businesses. Additionally, self-help groups (SHGs) have played a vital role in empowering rural women by providing them with microfinance and skill development opportunities.

Despite these advancements, women's participation in the workforce remains lower than that of men, with the female labor force participation rate hovering around 20.3% in 2020-21, according to the Periodic Labour Force Survey (PLFS). Factors such as the gender pay gap, workplace discrimination, and the burden of unpaid care work continue to hinder women's economic empowerment.

Political Participation

Political participation is another critical aspect of women empowerment. India has seen an increase in the number of women holding positions of power in government and politics. The reservation of seats for women

Scanned with OKEN Scanner

in local governance bodies (Panchayati Raj institutions) has been a significant step in this direction. As of 2021, women accounted for 46% of the total elected representatives in these bodies, according to the Ministry of Panchayati Raj.

However, at the national and state levels, women's representation remains low. In the 2019 general elections, women constituted only 14.3% of the Members of Parliament (MPs) in the Lok Sabha, reflecting the need for more proactive measures to ensure gender parity in political representation.

Healthcare

Access to healthcare is a fundamental right, and significant strides have been made in improving women's health in India. Initiatives like the National Rural Health Mission (NRHM) and the *Janani Suraksha Yojana* (JSY) have contributed to reducing maternal mortality rates and increasing institutional deliveries.

The government's focus on maternal and child health, along with programs like the *Pradhan Mantri Matru Vandana Yojana* (PMMVY), which provides financial assistance to pregnant and lactating women, has further enhanced women's access to healthcare. However, issues such as malnutrition, anaemia, and lack of access to reproductive health services still pose challenges, particularly in rural and marginalized communities.

Social and Cultural Opportunities

The rise of social media and digital platforms has provided women with a voice and a platform to express themselves, advocate for their rights, and challenge societal norms. Movements like #MeToo have gained momentum in India, bringing attention to issues of sexual harassment and gender-based violence. The increasing visibility of women in media, arts, and sports has also contributed to changing societal perceptions and encouraging young girls to pursue their passions.

Challenges Before Working and Household Women

Balancing Work and Household Responsibilities

One of the most significant challenges faced by working women in India is the dual burden of professional and household responsibilities. The traditional gender roles in Indian society often expect women to manage household chores, childcare, and eldercare, even if they are working full-time. This expectation not only adds to their workload but also limits their opportunities for career advancement.

The lack of affordable and accessible childcare facilities further exacerbates this issue, forcing many women to either leave their jobs or opt for part-time work, which is often low-paying and lacks job security. The COVID-19 pandemic has highlighted this challenge, as many women were forced to leave the workforce due to increased caregiving responsibilities.

Scanned with OKEN Scanner

Workplace Discrimination and Harassment

Despite laws like the Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013, workplace harassment remains a pervasive issue. Women often face discrimination in the form of unequal pay, lack of promotions, and biased hiring practices. The glass ceiling effect, where women struggle to rise to leadership positions, is still prevalent in many sectors.

Moreover, the informal sector, which employs a significant number of women in India, often lacks formal mechanisms to address issues of harassment and discrimination, leaving women vulnerable to exploitation.

Societal and Cultural Barriers

Deep-rooted patriarchal norms continue to pose challenges to women's empowerment in India. The preference for male children, dowry practices, and restrictions on women's mobility and decision-making power are still prevalent in many parts of the country. These cultural barriers not only limit women's opportunities but also perpetuate gender inequality.

For instance, early marriages, particularly in rural areas, often curtail a girl's education and force her into household responsibilities at a young age. Gender-based violence, including domestic violence, honor killings, and female infanticide, continues to be a significant concern, despite the existence of laws to protect women.

Health-Related Challenges

While access to healthcare has improved, women in India still face numerous health-related challenges. Maternal health, in particular, remains a critical issue, with many women lacking access to quality prenatal and postnatal care. The high prevalence of anemia among women, particularly in rural areas, is another concern that affects their overall well-being and productivity.

Reproductive health services, including access to contraception and safe abortion services, are often limited, especially in rural and marginalized communities. The stigma associated with discussing reproductive health issues also prevents many women from seeking the care they need.

Economic Dependence

Economic dependence on male family members is a significant barrier to women empowerment. Many women, particularly in rural areas, are not engaged in any form of paid work and are entirely dependent on their husbands or fathers for financial support. This dependence often limits their decision-making power and makes them vulnerable to abuse and exploitation.

Scanned with OKEN Scanner

The lack of access to financial resources, credit, and property rights further exacerbates this issue. Women often face challenges in starting their own businesses or investing in education and skills development due to these economic constraints.

The Role of Government Policies in Women Empowerment

The Indian government has implemented numerous policies and schemes aimed at empowering women and addressing the challenges they face. These initiatives span various sectors, including education, healthcare, economic participation, and political representation.

Educational Initiatives

Government policies like the *Sarva Shiksha Abhiyan* (SSA) and the *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA) have focused on increasing enrollment and reducing dropout rates among girls. The *Beti Bachao Beti Padhao* (BBBP) scheme, launched in 2015, aims to address the declining child sex ratio and promote the education and empowerment of girls.

Scholarships and reservation policies in higher education institutions have also been instrumental in encouraging women to pursue professional courses and enter male-dominated fields. However, the implementation of these policies needs to be more robust, particularly in rural areas, where girls still face numerous barriers to education.

Economic Empowerment Programs

The government has introduced several schemes to promote women's economic participation. *The Pradhan Mantri Mudra Yojana* (PMMY) provides collateral-free loans to women entrepreneurs, enabling them to start and expand their businesses. The Stand-Up India scheme, launched in 2016, aims to facilitate bank loans between ₹10 lakh and ₹1 crore to at least one woman borrower per bank branch.

Self-help groups (SHGs) have also been a critical component of the government's strategy to empower rural women. These groups provide women with access to microfinance, training, and markets, enabling them to engage in income-generating activities and improve their livelihoods.

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is another important initiative that guarantees 100 days of paid work to rural households, with a focus on including women in the workforce. However, there is a need for better implementation and monitoring to ensure that women benefit fully from these programs.

Scanned with OKEN Scanner

Political Empowerment Policies

The 73rd and 74th Constitutional Amendments, which mandated the reservation of one-third of seats for women in Panchayati Raj institutions, have been a significant step towards political empowerment. This reservation has enabled millions of women to participate in local governance and decision-making processes.

However, the Women's Reservation Bill, which seeks to reserve 33% of seats for women in the Lok Sabha and state legislative assemblies, has been pending for over two decades. The passage of this bill would be a landmark achievement in ensuring gender parity in political representation at higher levels of government.

Healthcare Initiatives

The National Health Mission (NHM), which includes the National Rural Health Mission (NRHM) and the National Urban Health Mission (NUHM), has been instrumental in improving women's access to healthcare services. The Janani Suraksha Yojana (JSY) and the Pradhan Mantri Matru Vandana Yojana (PMMVY) are key programs that focus on maternal and child health.

The Ayushman Bharat - *Pradhan Mantri Jan Arogya Yojana* (PM-JAY), launched in 2018, provides health insurance coverage to economically disadvantaged families, with a special focus on women. This initiative aims to reduce out-of-pocket healthcare expenses and improve access to quality healthcare services.

Despite these efforts, there is a need for more comprehensive policies that address the specific health needs of women, including reproductive health, mental health, and nutrition. The implementation of these policies must also be strengthened to ensure that women in rural and marginalized communities can access the services they need.

Legal Reforms and Protection

The Indian government has enacted several laws to protect women from violence and discrimination. The Protection of Women from Domestic Violence Act, 2005, the Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013, and the Dowry Prohibition Act, 1961, are some of the key legislations aimed at safeguarding women's rights.

In recent years, the government has also introduced stricter penalties for crimes against women, such as the Criminal Law (Amendment) Act, 2013, which introduced harsher punishments for sexual offenses. However, the effectiveness of these laws depends on their proper implementation and the sensitization of law enforcement agencies.

Scanned with OKEN Scanner

Conclusion

Women empowerment in India has made significant strides in recent years, with increased opportunities in education, economic participation, political representation, and healthcare. However, challenges such as balancing work and household responsibilities, workplace discrimination, societal and cultural barriers, health-related issues, and economic dependence continue to impede progress.

The Indian government has played a crucial role in promoting women empowerment through various policies and schemes. While these initiatives have had a positive impact, there is a need for more robust implementation, monitoring, and evaluation to ensure that the benefits reach all women, particularly those in rural and marginalized communities.

To achieve true women empowerment, it is essential to address the underlying socio-cultural norms that perpetuate gender inequality and to create an enabling environment where women can thrive and contribute fully to society. This requires a collective effort from the government, civil society, and individuals to challenge and change the status quo and to build a more equitable and inclusive society for all.

Reference:

- Beti Bachao Beti Padhao Scheme. "Beti Bachao Beti Padhao Scheme Guidelines." Ministry of Women and Child Development, Government of India, 2015. www.wcd.nic.in/bbbp-scheme.
- National Health Mission. "Janani Suraksha Yojana." Ministry of Health and Family Welfare, Government of India, www.nhm.gov.in/janani-suraksha-yojana.html.
- National Statistical Office (NSO). "Women and Men in India 2021." Ministry of Statistics and Programme Implementation, Government of India, 2021.
- Periodic Labour Force Survey (PLFS). "Annual Report 2020-21." Ministry of Statistics and Programme Implementation, Government of India, 2021.
- Pradhan Mantri Mudra Yojana. "Scheme Details." Ministry of Finance, Government of India, www.mudra.org.in.
- Pradhan Mantri Matru Vandana Yojana. "Scheme Details." Ministry of Women and Child Development, Government of India, www.wcd.nic.in/schemes/pradhan-mantri-matru-vandana-yojana.
- Stand-Up India Scheme. "Scheme Guidelines." Ministry of Finance, Government of India, www.standupmitra.in.
- "The Protection of Women from Domestic Violence Act, 2005." Ministry of Law and Justice, Government of India.
- "The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013." Ministry of Law and Justice, Government of India.

Scanned with OKEN Scanner

'RESEARCH JOURNEY' International E- Research Journal
Vol. 12, Issue 1 : Multidisciplinary Issue
Impact Factor : 6.625 (SJIF) Peer Reviewed Journal
E-ISSN : 2348-7143
Jan.-March 2025

उत्कट अभिव्यक्तीचे दर्शन घडविणारा कवितासंग्रह : 'मौन झाले बासरी'

सहा. प्राध्यापक योगेश उगले
के. पी. जी. महाविद्यालय, इगतपुरी

प्रास्ताविक :

कविता म्हणजे जाणिवेतील अनुभवांचे शब्दरूप. कविता म्हणजे नेणिवेतील अनुभूतींचे लयबद्ध प्रकटन. कविता म्हणजे अमूर्ताला साकारण्याची निरागस धडपड. कविता म्हणजे वेदनेला वाट करून देण्याची सुरेख तगमग. अभिव्यक्तीच्या असंख्य शक्यता धारण करणाऱ्या अशा अनेक वाटांनी कविता चालत येतात. कवयित्री सुप्रिया पुरोहित यांची कविता अशा सर्व शक्यतांना बाळगणारी नितांतसुंदर अभिव्यक्ती आहे. आशयघटकांच्या वैविध्यापासून ते आशयघनतेपर्यंत जाणारा तिचा प्रवास रसज्ञ आस्वादकाला सुखावणारा, त्याच्याठायी अनुभवांच्या नव्या संगती निर्माण करणारा आहे. या कवितेत निसर्ग आहे, बाईचं जगणं आहे, संसारापलीकडचं जग बघणं आहे, स्त्री जाणिवेतून अभिव्यक्त होणं आहे, स्वप्नांना शब्दांतून साकारणं आहे, तसेच एक प्रकारचा सात्त्विक विद्रोहसुद्धा आहे. या कविता आत्मीयतेने वाचणाऱ्या रसिकाच्या अवलोकनाला कवयित्रीच्या निष्पाप मनःपूर्वकतेचा स्पर्श झाल्यावाचून राहणार नाही. नादमाधुर्य, शब्दसौंदर्य आणि प्रतिमाप्राचुर्य या गुणांनी 'मौन झाले बासरी' हा कवितासंग्रह नखशिखांत सजलेला आहे. त्यामुळे या कवितांच्या आस्वादातून वाट्याला येणाऱ्या यथार्थ भारावलेपणाचा अधिकारी वाचक होतो. बघता बघता तो या शांतरसात विरघळून जातो. आणि त्याच्या मनामध्ये मौनाच्या बासरीचे सुमधूर सूर दरवळू लागतात. अर्थप्रचितीच्या नव्या प्रदेशात त्याचा प्रवेश होतो. शब्दांच्या त्याच त्या परंपरागत अर्थांच्या पलीकडे जाणाऱ्या नव्या अर्थवाटा त्याला खुणावू लागतात. सुप्रिया पुरोहित यांचा 'मौन झाले बासरी' हा कवितासंग्रह रसिकांच्या संवेदनप्रकृतीला अलगद स्पर्श करून एका निरामय भावोत्कटतेचा प्रत्यय देतो.

१) स्त्री जाणिवांचे प्रकटीकरण :

'मौन झाले बासरी' या कवितासंग्रहातील कवितांमधून स्त्री प्रतिमांचा आगळा आविष्कार बघायला मिळतो. अभिव्यक्तीच्या अनवट आणि सौम्य तऱ्हा या कवितांमधून बघायला मिळतात. रोजच्या जगण्यातील अनुभव कवयित्रीच्या चिंतन – मंथनाच्या संस्कारांनी शोभिवंत होऊन प्रकटतात. त्यामुळे या कविता माणसाच्या जाणीवेला स्पर्श करताना स्वभावतः त्याला चिंतनप्रवृत्त करतात. आस्वादाचा नवा पैस त्याच्यासमोर साकार करतात. त्या रसिकाला चिंतनाच्या वाटेवरचा सहप्रवासी करून घेतात. स्त्रीच्या भावविश्वाचं दर्शन घडवणाऱ्या, तिच्या दुःखाला अक्षरत्व देणाऱ्या कविता असंख्य कवींनी लिहिल्या. पण कवयित्री सुप्रिया पुरोहित यांच्या कवितेतली स्त्री अतिशय वेगळ्या पद्धतीने आविष्कृत होते. तिच्या आविष्कृत होण्याच्या तऱ्हेत आक्रमकपणा नाही, अवडंबर नाही की ओढूनताणून केलेलं उदात्तीकरण नाही. जे आपल्या आतून ओथंबून येतंय ते जसं आहे तसं थेट मुळातून सांगता येणं, ही फार कठीण गोष्ट आहे. 'मौन झाले बासरी' या कवितासंग्रहातील कविता अशा थेटपणे वाचकाशी संवाद साधण्याचं सामर्थ्य बाळगून आहेत, ही कौतुकाची गोष्ट आहे. 'अश्रूंच्या उंबरठ्यावर, मी हसले केविलवाणी'[१] यासारख्या अनेक ओळी या सामर्थ्याची प्रतीती वाचकाला देतात. आपल्या अश्रूंना वाट करून देतानाही ओठांवर केविलवाणं का होईना, पण हसूच सजवण्याचा निर्धार करणारी स्त्री या ओळींतून साकार होते. 'काळजातले किलबिल गाणे अंतरात विरघळून गेले/ खेद मनातिल अबोल होऊन सान पाखरू झुरू लागले'[२] किंवा 'कधी वाटते या उन्हाच्या लकेरी रुजवतात हृदयातल्या वेदना'[३] अशा अनेक ओळींतून स्त्रीच्या वेदनांचे चिंतनशील प्रकटीकरण झाल्याचे दिसून

येते. आपल्या भवतालात घडणाऱ्या संक्रमणाला मानवी मन टिपत असते. त्या बदलांनी वेळोवेळी संस्कारित होत असते. त्या संस्कारांचा, अनुभवांचा सशक्त आविष्कार शाब्द साहित्यातून झालेला पहावयास मिळतो. 'सामाजिक संक्रमणाचे भाषा हे उत्तम उदाहरण आहे, आणि अर्थ हा तिचा गाभा आहे.'[४] या कवितासंग्रहातून प्रकटणारी स्त्री या संक्रमणाचेच एक शब्दरूप आहे, असे म्हटल्यास वावगे ठरू नये. तिच्या अर्थाविष्काराची तऱ्हा साधी, तरीही प्रत्ययकारक आहे. साधेपणातही भावोत्कटतेचा अनुभव धारण करणे, हा तिचा प्रतिभाधर्म आहे. या अनुभवाच्या धारणेतूनच 'अत्तर चाफा शिंपित येतो, ऊन हळदुले माखुन देही/ अन स्वप्नांच्या वाटेवरती, चैतन्याची मिळते ग्वाही'[५] अशा नादानुकारी ओळी जन्माला येतात.

२) जीवनबोध :

कुतूहल हा माणसाच्या जाणिवांना सतत जागृत ठेवणारा घटक आहे. शोध घेणे, हा माणसाचा सहजधर्म आहे. कुतूहलातून, शोध घेण्याच्या धडपडीतूनच प्रश्न जन्माला येतात. माणसाला जीवनाबद्दल जितके आकर्षण आहे, त्याहून निशितच जास्त त्याला जीवनाबद्दल कुतूहल असेल. या कुतूहलातून त्याचा स्वत:चा शोध घेण्याचा प्रवास सुरु होतो. हा प्रवास हळूहळू व्यापक होत होत समग्र जीवनाचा शोध घेण्यापर्यंत जाऊन पोहचतो. या शोधातूनच त्याला बोधाचे काही तेजस्वी कण गवसतात. त्याला झालेला जीवनाचा बोध हा त्याच्यापुरता स्वयंपूर्ण, स्वयंभू असतो. आपल्या जाणीवेला झालेल्या या बोधाची मांडणी करण्याच्या माणसाच्या या धडपडीतूनच कवितेसारख्या कलेचा आविष्कार आहे. कवितेची अनुभवव्यवस्था ही त्या त्या कवीच्या जीवनविषयक बोधातून निर्माण झालेली असते. 'मौन झाले बासरी' या कवितासंग्रहातील अशा जीवनबोधाला आविष्कृत करणाऱ्या शब्दबंधांचे अवलोकन करणे, ही निरतिशय आनंददायी प्रक्रिया आहे. 'मोहाच्या वाटेवरती, पाऊल रोज अडखळते/ क्षणभंगुर माहित असुनी, मन तिथेच का घुटमळते?'[६] या ओळीतून मानवी अस्तित्वाला अंतर्बाह्य व्यापून असलेल्या मोहाचा वेध घेण्याचा कवयित्रीने प्रयत्न केलाय. जीवनवाटेवर चालताना मोहाची ठेच लागून पाऊल अडखळणे, ही गोष्ट प्रत्येकानेच आपल्या आयुष्यात कैकवेळा अनुभवलेली असते. मोहासोबत येणारं क्षणभंगुरत्व माहीत असूनही त्याला बळी पडणं, हा मानवी स्वभाव कवयित्रीने नेमकेपणाने टिपलाय. या नेमकेपणाचा प्रत्यय देणाऱ्या असंख्य ओळी संपूर्ण कवितासंग्रहभर विखुरल्या असल्याचे दिसून येईल. अशा प्रकारे जीवनाचे बोधकण टिपताना, त्या बोधाचे कवितारुपात पुनर्निर्माण करताना कवयित्री आपल्या मूळ प्रतिभाधर्मापासून ढळत नाही. निर्माणक निरागसता – creative innocence हा कवयित्रीचा प्रतिभाधर्म आहे. 'Innocence, like the moon, illuminates our work when it is at its most creative, pure, and unspoiled by the world's distractions.'[७] ज्या निरागस आत्मीयतेने तिच्या जीवनशोधाची वाट जाते, त्याच वाटेने तिचा जीवनबोध आकार घेण्याचा प्रयत्न करतो. त्यामुळे ही कविता अनुभवाची अस्सल प्रतीती आस्वादकाच्या मनात निर्माण करण्यास समर्थ आहे. अनुकरणाचे सर्व अडसर टाळून ती आपल्या निर्मितीतून नाविन्याचा ध्यास प्रकट करते. कोणतीही अस्सल नवनिर्मिती ही व्यवस्थेचे अनुकरण-अनुसरण करून होऊ शकत नाही.[८]

३) अनुभूतींचे लयबद्ध प्रकटन :

लयबद्धता हा जीवनाचा स्थायीभाव आहे. विश्वातील प्रत्येक गोष्टीला तिची तिची स्वतंत्र अशी नैसर्गिक लय असते. ही लय बिघडते तेव्हा त्या व्यवस्थेचा तोल डळमळीत होतो. या डळमळीत अवस्थेतून आपल्या मूळ अवस्थेत परत जाण्याची व्यवस्थाही प्राकृतिकपणे कार्य करत असते. डळमळीत झालेल्या लयीतून एक नवी लय निर्माण

होण्याच्या, नवा तोल धारण करण्याच्या शक्यताही असतात. कुठल्याही लयबद्ध निर्मितीमागे ही निर्मितीव्यवस्था काम करत असते. लय बिघडणे, त्या बिघडलेल्या लयीतून नव्या लयीची संगती निर्माण होणे, अशा अवस्थांतरातून निर्मितीव्यापार घडत असल्याचे दिसून येईल. 'Poetry is the rhythmic creation of beauty, and its rhythm is the natural echo of the mind's heartbeat, its emotional pulse.'[९] 'मौन झाले बासरी' हा कवितासंग्रह अशा लयशोधाचा सुरम्य प्रवास आहे. यातील कविता आपल्या अंगभूत लयीचे आविष्करण करून सहजपणे आस्वादकाच्या ठायी पुन:प्रत्ययाचा भाव रुजवण्यात यशस्वी होतात. या आविष्करणात सहजपणा आहे. जिवंतपणा आहे. निर्मितीच्या आवेगातून येणाऱ्या अवखळपणासोबतच यातून प्रचितीस येतो तो लयबंधांचा अनिवार खळाळ. 'Creativity and its impulses, हे जमिनीतून उसळणाऱ्या जिवंत झऱ्यासारखे असतात.'[१०] अनुभूतींचे लयबद्ध प्रकटन, हा या कवितेचा स्वभावधर्म आहे. या कविता वेगवेगळ्या छंदांत, वृत्तांमध्ये बांधलेल्या असून त्या त्या वृत्ताला असलेल्या लयस्वभावानुरूप त्यांनी आशय आणि अनुभव धारण केल्याचे दिसून येईल. सुमंदारमाला वृत्तलयीतली अनिवार आवेगी कविता असो किंवा भूपतिवैभव, विधाता यासारख्या वृत्तलयींतून ऐसपैस आशय तोलून धरणारी संयत, भारदस्त अनुभवाचे वहन करणारी कविता असो, सर्व प्रकारच्या कविता या कवितासंग्रहात वाचायला मिळतात. या कविता गुणगुणता येतात, गाता येतात. अर्थबोधाचे, आशयाविष्काराचे कोणत्याही प्रकारचे अगम्य ताण निर्माण न करता, ही कविता थेट वाचकाशी संवादी होते. हे संवादी होणंसुद्धा अत्यंत लयमधुर आहे. शब्द, लय आणि अर्थ असे एकत्वाने ज्या कवितेतून प्रकट होतात, ती कविता आस्वादकाला आपलीशी वाटते. कविता वाचणाऱ्याला अशा थेट आपलेपणाचा अनुभव देणं, हे यशस्वी कवितेचं द्योतक आहे. या कवितासंग्रहातून शब्द, लय आणि अर्थाचा तोल सांभाळत एका संपूर्ण नवीन अनुभवाला साकार करण्याची यशस्वी धडपड कवयित्रीने केलेली असल्याचे दिसून येईल.

४) कलात्मकता आणि कलानुभव :

'कलेला कलाकाराचा स्वाद असतो. आस्वादकाच्या जिव्हेवर तो सार्थ होतो.'[११] कलात्मकता ही मोठी दुर्मिळ चीज आहे. कलावंताचा जीवनानुभव जितका सघन, तितकी कलाकृतीही अनुभवाने ओतप्रोत भरलेली असते. कलावंताच्या संवेदनप्रकृतीची प्रत जितकी अस्सल, तितकीच कलाकृतीची संवेद्यताही आरपार भिडणारी असते. या सशक्त जीवनानुभवातून, अस्सल संवेदनांतूनच बावनकशी कलात्मकता जन्माला येते. त्या कलात्मकतेचे अनुभवगम्य रूप म्हणजे अभिव्यक्ती. कलावंताच्या कलात्मक अवकाशातच आस्वादकाचा कलानुभव आकाराला येत असतो. त्या अनुभवाचे मूल्य त्या त्या कलाकृतीच्या कलात्मकतेवर अवलंबून असते. इथे आस्वादकाचा जीवनानुभवही काम करत असतो. त्यामुळे कुठलाही कलानुभव ही कलावंत आणि अनुभवधारक या दोघांच्या जीवनविषयक अनुभवांची सार्थ देवाणघेवाण असते. 'मौन झाले बासरी' या कवितासंग्रहातील कविता कलात्मकतेची स्वतंत्र वाट निर्माण करणाऱ्या, त्या वाटेने रसिकांचे अलगद बोट धरून कलानुभवाच्या गन्तव्यापर्यंत नेणाऱ्या आहेत. कलात्मकतेची उंची गाठताना अनुभवाची सुगमता कुठेही कमी न होऊ देणं, हे त्यांचे वैशिष्ट्य आहे. या अनुभवातही काहीएक विचार आहे. त्या विचारामागे कवयित्रीचं जीवनचिंतन आहे. कलात्मकतेच्या वेलींवर लगडून आलेली चिंतनाची ही फुले कवितेच्या सौंदर्यात भर टाकतात. 'सौंदर्य हे एक जीवनमूल्यच आहे'[१२] अशा कविता वाचकांना आपल्याशा वाटतात. आपल्या आत्मनिष्ठ अनुभवाला निर्भेळपणे आस्वादकाच्या हृदयात रुजवता येणं, हे यशस्वी कवितेचं लक्षण आहे. अशा कविता आत्मबोधाकडून विश्वबोधाकडे थेट चालत जातात. त्या कवितेचं आत्मीयतेनं बोट धरून चालणाऱ्या

रसिकालाही त्या विश्वबोधाच्या गाभाऱ्यात नेऊन उभं करतात. त्याला स्वत:हून श्रेष्ठ अशा अनुभवाचा धनी करतात. स्वत:ला ओलांडून जायला भाग पाडतात. नव्या बोधाला सामोरं जाण्यासाठी त्याला प्रवृत्त करतात. त्याच्याठायी जीवनऊर्जेला विशुद्ध जाग आणण्याचं काम या कविता करतात.

५) सौंदर्यस्थळे :

कोणत्याही कलाकृतीचे प्रमुख आकर्षण म्हणजे तिला असलेले सौंदर्यमूल्य. मानवी मन हे सौंदर्याचे भोक्ते आहे. कवितेच्या बाबतीत लय, शब्द, अलंकार यासारख्या घटकांच्या सहाय्याने सौंदर्य आविष्कृत होत असते. मानवी श्रुतीसंवेदनेला लयीचे आकर्षण आहे. सौंदर्यमूलक प्रतिमांची अनुभूती देणाऱ्या शब्दांचे आकर्षण आहे. शब्दचमत्कृती तसेच अलंकारांच्या माध्यमातून प्रत्ययाला येणाऱ्या अभिनव रसाचे आकर्षण आहे. अशा घटकांमुळे कवितेला सौंदर्यमूल्य प्राप्त होत असते. 'स्पर्श, रूप, रस, गंध, नाद या मूलमंत्रणेच्या बरोबरीने कवितांमधील शब्द जेव्हा निर्मितीक्षम होतात, तेव्हा त्यांना एक वेगळी किरमिजी मायस झळाळी प्राप्त होते.'[१३] आशयाचे केंद्र ढळू न देता कलाकृतीला सौंदर्याचे कोंदण बहाल करणे, हे यशस्वी कलावंताचे लक्षण आहे. 'मौन झाले बासरी' या संग्रहातील कवितांमध्ये जागोजागी झालेला असा सौंदर्याविष्कार हा त्याच्या आकर्षणात भर घालणारा ठरतो. या कवितांमधून प्रकट होणारा अनुभव हा आत्म्याचा आवाज आहे. 'Art and poetry are one of the few ways we can make sense of the mysteries of the human soul.'[१४] या अनुभवाला सौंदर्यमूल्यांचा साज आहे. तो कवितेच्या आकर्षकतेत भर घालणारा आहे. 'प्रीतपिसारा' या कवितेतील 'प्राजक्ताचा सडा केशरी, तुझी आठवण या ओठांवर/ किती कोरली नाजुक नक्षी, ठसे उमटले शुभ्र तनूवर'[१५] या ओळी किंवा 'अव्यक्त' कवितेतील 'तुझा श्वास दे ना तुझे गीत दे ना तुझे सूर दे ना मला एकदा/ तुझा स्पर्श वेडा हवासा हवासा उरी माळते मी तुला कैकदा'[१६] यासारख्या ओळी कवयित्रीच्या आर्त अनुभवाचे सुंदर दर्शन घडवतात. सौंदर्याविष्काराचा हा ओघ संपूर्ण संग्रहभर कधी संथ, अलवार, तर कधी आशयसुसंगत उत्कटपणे प्रवाहत राहतो. या प्रवासात हरवून जाणाऱ्या आस्वादकाला अनेक सौंदर्यस्थळे अनुभूतीला येतात. सौंदर्यबोधाच्या असंख्य शक्यता धारण करणाऱ्या या कवितेचा सहजगम्यता हा आत्मा आहे. त्या सहजसुंदर आशयाचे लयबद्ध प्रकटीकरण होत असतानाच रसिकाच्या सौंदर्यदृष्टीला आवाहन करण्याच्या असंख्य शक्यता कवितेसोबतच जन्म घेतात. रसात्मकता आणि रसिकता यांना जोडण्याचे, एकत्र गुंफण्याचे कार्य ही कविता करते. त्यामुळे कवितेची आस्वादप्रक्रिया अधिकाधिक सुलभ तसेच रम्य होते.

समारोप :

कवयित्री सुप्रिया पुरोहित यांचा 'मौन झाले बासरी' हा कवितासंग्रह समकालीन मराठी कवितेत आपल्या आंतरिक सौम्य सुरात मौनाचे नवे गुंजन करीत आहे. लयवेल्हाळ अशा या कवितेत प्रतिमा-प्रतिकांची, आशय-अभिव्यक्तीची, शब्द-अलंकारांची अभिनव आविष्काररूपे अवलोकावयास मिळतात. त्यांच्या रसपूर्ण प्रत्ययाचा आस्वादानुभव रसिकाला हृदयसंवादतन्मयीभवन अवस्थेपर्यंत घेऊन जाणारा ठरतो. कविता रूपबंधाच्या मर्यादेत आविष्कृत होणारी ही कविता अंतरंगातील अमर्यादाच्या ओढीने झळाळून उठलेली आहे. लयीचे, अर्थाचे, आशयाचे देखणे शिल्प तिच्यातून साकार होताना दिसते. तिच्या वेल्हाळपणात नैसर्गिक शहाणपण आहे. तिच्या प्रवाहात ओढ लावणारी सुमधुर खळखळ आहे. आत्मीयतेने आस्वाद घ्यायला जाणाऱ्या रसिकाला ही कविता दरवेळी अर्थबोधाचा नवा अनुभव देत राहील.

संदर्भसूची :

१. सुप्रिया पुरोहित, मौन झाले बासरी, अष्टगंध प्रकाशन, पृ. ४५
२. सुप्रिया पुरोहित, मौन झाले बासरी, अष्टगंध प्रकाशन, पृ. ४९
३. सुप्रिया पुरोहित, मौन झाले बासरी, अष्टगंध प्रकाशन, पृ. ५४
४. प्रभाकर पाध्ये, सौंदर्यानुभव, मौज प्रकाशन, पृ. ३५
५. सुप्रिया पुरोहित, मौन झाले बासरी, अष्टगंध प्रकाशन, पृ. ४२
६. सुप्रिया पुरोहित, मौन झाले बासरी, अष्टगंध प्रकाशन, पृ. ८६
७. Virginia Woolf, A Room of One's Own, Harcourt Brace & Company, Page No. 71
८. म. सु. पाटील, कवितेचा रूपशोध, शब्दालय प्रकाशन, पृ. ८८
९. W. H. Auden, The Dyer's Hand, Vintage Classics, Page No. 45
१०.ग्रेस, कावळे उडाले स्वामी, पॉप्युलर प्रकाशन, पृ. १९१
११.रेनर मारिया रिल्के, रिल्केची दहा पत्रे (अनुवाद: अनिल कुसुरकर), ग्रंथाली प्रकाशन, पृ. २
१२.कुसुमावती देशपांडे, पासंग, पृ. ९७
१३.अशोक बागवे, मौन झाले बासरी (प्रस्तावनेतून), अष्टगंध प्रकाशन
१४.John Keats, Letters of John Keats, Dover Publications, 57
१५.सुप्रिया पुरोहित, मौन झाले बासरी, अष्टगंध प्रकाशन, पृ. २८
१६.सुप्रिया पुरोहित, मौन झाले बासरी, अष्टगंध प्रकाशन, पृ. ५४

विकासासाठी आवश्यक बाब आहे.

प्रामाणिक, निस्वार्थ, निष्ककलंक राज्यकर्ता किंवा एखादा पक्ष देशात लोककल्याणकारी राज्य निर्माण करु शकतो.

संदर्भ ग्रंथ :—

१) राजयोगिनी देवी अहिल्याबाई होळकर — पुरुषोत्तम महादेव वैद्य, इंदौर १९४५

२) पुण्यश्लोक अहिल्याबाई होळकर — मा. श्री. दिक्षित — इनामदार बंधू प्रकाशन पुणे

३) कर्मयोगिनी— सौ विजया जहागिरदार— चेतना प्रकाशन अमळनेर, १९९१

४) अष्टावधानी — प्रभाकर पानट — मनोरमा प्रकाशन जानेवारी १९९४

५) ज्ञात—अज्ञात अहिल्याबाई — विजया खडपेकर — राजहंस प्रकाशन २००७

६) लोकराज्य — अहिल्याबाई होळकर विशेषांक — महाराष्ट्र शासन — १९९५

७) पुण्यश्लोक लोकमाता अहिल्याबाई होळकर — हरीभाऊ कोळेकर २०१३

८) देवी अहिल्याबाई होळकर वास्तव दर्शन — प्रा.म.ना.लोही — २००१

९) अहिल्याबाई होळकर — गौरवगाथा लोकमातेची — महाराष्ट्र राज्य साहित्य आणि संस्कृती मंडळ, मुंबई—खंड आठ— २०१४

❑❑❑

18

वेदनेचे खंडकाव्य : भूक छळते तेव्हा . . .

प्रा. डॉ. व्ही. बी. राठोड
केपीजी कला, वाणिज्य व विज्ञान महाविद्यालय,
इगतपुरी, ता. इगतपुरी, जि. नाशिक

।।१।।

मराठी साहित्याचा इतिहास अभ्यासता असे लक्षात येते की, काळानुरूप मराठी साहित्य विविध विचारसरणीने समृध्द झालेले आहे. साठोत्तरी काळात जसे ग्रामीण, दलित, स्त्रीवादी, आदिवासी, प्रादेशिक साहित्यांनी जसे मराठी साहित्याच्या वैभवात भर घातली त्याप्रमाणे अलिकडे बंजारा साहित्यिकही मोठ्य प्रमाणात प्रमाणात लेखन करीत मराठी साहित्य समृध्द करीत आहे. बंजारा साहित्यिक आपले साहित्य देवनागरी लिपीतून मांडत आहे. कारण बंजारा बोली ही प्रमाण भाषा नसून इंडो युरोपीयन कुळातील एक भाषा आहे. बंजारा बोली भाषेच्या संदर्भात अनेक मत मतातरे आहेत. बंजारा बोलीतून, देवनागरी लिपीच्या माध्यमातून 'बंजारा साहित्य' प्रकटत आहे. तसेच काही बंजारा साहित्यिक प्रमाणमराठी भाषेतून आपल्या संवेदना व्यक्त करीत आहे. अलिकडे बंजारा साहित्यिकांची संमेलने आखिल भारतीय स्तरावर होत असून बंजारा घ साहित्यिकांना आपल्या भावना व संवेदना व्यक्त करण्यासाठी व्यासपीठ उपलब्ध होतांना दिसत आहे. बंजारा साहित्यामध्ये आधी संकलित झालेले वा केलेले लोकसाहित्य म्हणजे 'बंजारा साहित्य' असा सर्वसामान्य समज होता. पण अशा साहित्याचे संकलन करून विश्लेषण करून अन्वयार्थ मांडणे व पिढीजात जपली जाणारी अमुल्य ठेव जपणे. त्याचा प्रचार, प्रसार व संवर्धन करणे महत्वाचेच आहे. अलिकडे अनेक साहित्यिक प्रमाण मराठी साहित्याप्रमाणे सर्व साहित्य प्रकारातून लेखन करून म्हणजे काव्य, कथा, कादंबरी, नाटक, चरित्र, आत्मचरित्र, प्रवासवर्णन, ललित लेख, निबंध अशा सर्वच प्रकारातून मोठ्य प्रमाणात लेखन करून बंजारा साहित्याचा स्वतंत्र वाङ् मयीन प्रवाह निर्माण केला आहे.

।।२।।

मराठी साहित्यातील 'काव्य' या प्रकाराचा विचार करता असे लक्षात येते की मराठी साहित्याची घनिर्मितीच मुळात काव्यातून झाली. मराठीतील आद्य ग्रंथ 'विवेकसिंधू' काव्यमय पध्दतीनेच लिहिला गेला. मध्ययुगीन कालखंडातील सर्व रचनाच काव्यातून झाली. अपवाद महानुभावीय गदय साहित्य शिवकाळातील व पेशवेकाळातील बखरी आहेत. पाश्चात्यांशी संपर्क आल्यानंतर काव्याची व्याप्ती कमी होवून एक साहित्य प्रकार म्हणून पाहिले. तसेच काव्यातून फक्त आध्यात्म विषयच हाताळता येतो ही समजूत मोडकळीस निघून काव्याकडे सर्व प्रकारच्या मानवी संवेदना अभिव्यक्त करण्याचं माध्यमं म्हणून पाहण्यात आले. काव्यामध्ये विविध घविषय हाताळल्यामुळे काव्यात अंर्तबाह्य बदल घडवून आणला तो केशवसुतांनी. म्हणून केशवसुतांना आधुनिक कवितेचे जनकत्व बहाल करण्यात आले. त्यांच्यानंतर काव्यातून फक्त अभिजातवाद आभिव्यक्त न होता सौंदर्यवादी, वास्तववादी जाणिवेतूनही काव्य लिहिले जावू लागले. त्यातून निसर्गवादी, प्रेमविषयक, राष्ट्रीय कविता, सामाजिक प्रश्न व समस्या रेखाटणाऱ्या कविता असे अनेक विषय हाताळले जावू लागले. बालकवी, गोविंदाग्रज, व रविकिरण मंडळातील माधव ज्युलियन व त्यांच्या सह कवींनी मराठी कविता घडविण्यात मोलाची भूमिका बजावली. स्वातंत्र्यपूर्व कालखंडात कविताल नवसंवेदना देऊन नवकाव्य निर्माण करण्याचे काम बा.सी.मर्ढेकर यांनी केले. स्वातंत्र्यानंतर वसंत बापट, मंगेश पाडगावकर, विंदा करंदीकर यांनी कवितेमध्ये अभिनव प्रयोग करून मराठी नवकवितेला उंचीवर नेण्याचे काम केले. साठोत्तरी कालखंडात ग्रामीण, दलित संवेदनांनी ग्रामीण व दलित काव्य, स्त्रीवादी जाणीवेतून स्त्रीवादी काव्य, आदीवासी काव्य संपन्न होवू लागले. यांच्यापासून प्रेरणा घेवून अलिकडे भटक्या घविमुक्त समाजातील काही कवींनी आपल्या संवेदना अभिव्यक्त करायला सुरवात केली. मात्र यासाठी एकविसाव्या शतकाची वाट पहावी लागली.

।।४।।

बंजारा साहित्यात विशेषत: 'काव्य' या वाङ्मय प्रकारात मोठ्या प्रमाणात लेखन झालेले दिसते. यात कवींबरोबर कवयित्रींनी काव्य केलेले आहे. हा अभ्यास करीत असताना जे काव्यसंग्रह मला मिळाले. त्यात आत्माराम कनिराम राठोड यांचा 'आत्माराम कनिराम राठोड यांच्या कविता', जवाहर राठोड यांचा 'डोंगराचे ढोल', रावजी राठोड यांचा 'मलाण', मोहन नाईक यांचा 'केसूला', मांगीलाल राठोड यांचा 'निळतळीचे पळसबन', उत्तम राठोड यांचा 'व्यासपीठ', राजाराम जाधव यांचा 'वादळवारा', प्रेमदास राठोड यांचे तीन काव्यसंग्रह प्रसिध्द आहेत त्यात 'गराशा','रानवा' व 'बंब', रामकुमार चव्हाण यांचा 'काटेरी पुष्प', राजाराम राठोड यांचा 'आर्त' किशन पवार यांचा 'रानपाखरं', प्रमिला राठोड यांचा 'नवे अंकुर' शशिकला चव्हाण यांचा 'बंधमुक्ता', हरिष्चंद्र राठोड यांचा 'उध्वस्त' नथ्थू चव्हाण यांचा 'लेंगीनायक' डॉ. रमेश जाधव यांचा 'गोरकविता',रतन आडे यांचा 'आथारी' तसेच अरुंधती नाईक यांचा 'घुंगुरवाळा' पंजाब चव्हाण, डॉ. रुक्मिणी पवार,प्रमिला जाधव,ललिता राठोड अशीअनेक नावे बंजारा कवींच्या पंक्तीमध्ये घेता येतात. याच कवींच्या पंक्तीत आवर्जून घेण्यासारखे एक नाव आहे नवकवी संदीप राठोड याचं.संदीप राठोड यांचा पहिलाचं काव्यसंग्रह नावारुपास आला आहे तो म्हणजे 'भूक छळते तेव्हा ...'

।।५।।

कवी संदीप लहू राठोड संस्थापक अध्यक्ष—'ज्ञानांकुर' शिक्षण संस्था, निघोज. सातारा येथे संपन्न झालेल्या 'पंढरी' काव्य संमेलनाचे अध्यक्ष, पारनेर येथे संपन्न झालेल्या 'साधना' युवा काव्य संमेलनाचे अध्यक्ष, माय मराठी दिवाळी अंकाचे सह संपादक. अनेक संमेलनात सहभाग — त्यात राष्ट्रीय बंधुता साहित्य संमेलन, स्वाभिमानी शिक्षक संघटना कवी संमेलन, पारनेर कवी संमेलन, विद्रोही साहित्य संमेलन, विद्यार्थी आणि शिक्षक साहित्य संमेलन, 'सत्यमेव जयते' कल्चरल कट्यावर मुलाखत, विविध दैनिके, साप्ताहिके, मासिके, दिवाळी अंकामध्ये कविता, समीक्षणे प्रसिद्ध.'कविता आपल्या भेटीला' या कार्यक्रमातून विविध महाविद्यालयात कविता सादरीकरण. याबद्दल त्यांना विविध पुरस्काराने सन्मानितही करण्यात आले आहे. त्यात राष्ट्रीय बंधुता साहित्य परिषद, पुणे यांच्या द्वारा दिला जाणारा 'डॉ. बाबासाहेब आंबेडकर ग्रंथ मित्र' पुरस्कार —२०२१, काव्यपुष्प साहित्य मंच, मुंबई यांच्या द्वारा दिला जाणारा 'काव्यपुष्प साहित्य भूषण' पुरस्कार — २०२१, २२ व्या राष्ट्रीय बंधुता साहित्य संमेलन पुणे मध्ये 'लोकशाहीर अण्णा भाऊ साठे साहित्य' पुरस्कार — २०२१, अष्टपैलू संस्कृती कला अकादमी मुंबई द्वारा 'अष्टपैलू काव्यलेखन गौरव' पुरस्कार —२०२१, विद्रोही साहित्य संमेलन

पुणे यांच्याकडून 'नाठाळाच्या माथी हाणू काठी' तसेच नववे विद्यार्थी आणि शिक्षक संमेलन मंचर येथे 'बंधुता गुणवंत शिक्षक' पुरस्कार —२०२२ मिळाला.

युवा नवकवी संदीप लहू राठोड यांचा पहिला काव्यसंग्रह 'भूख छळते तेव्हा . . .' पारनेर साहित्य साधना मंचने घञ्ऑक्टोबर ह्यञ्ह्यह्य रोजी प्रकाशित केला. या काव्यसंग्रहात एकूण ७२ कविता असूनयातील बहुतांशी कविता ह्या वर्तमानपत्र, साप्ताहिक, मासिक, दिवाळी अंकातून अगोदरच स्वतंत्रपणे प्रकाशित झालेल्या आहेत. या सर्व कविता एकत्रितपणे प्रकाशित करताना अक्षर जुळणीचे काम संजय पठाडे, मुद्रितशोधनाचे काम श्री. विजय लोंढे यांनी केले. सर्व कवितांचे मुद्रण सोनाली प्रिंटर्सने केले असून कवितासंग्रहाच्या मुखपृष्ठाचे कामसुंदर व कवितासंग्रहामध्ये आशयाच्या अनुशंगाने ठिकठिकाणी रेखाचित्रे रेखाटून कवितासंग्रहाच्या सजावटीचे श्री. शीतलकुमार गोरे यांनी केलेले काम वाखाळण्याजोगे आहे. सदर कवितासंग्रह अनंत संकटाशी सामना करून अपार कष्ट करून जीवनात सुखाची पेरणी करणारे वडील स्व. लहू तुकाराम राठोड व आई श्रीमती पारूताई लहू राठोड यांना कवी संदीप राठोड यांनी आदरपूर्वक अर्पण केला आहे. जेष्ठ समाजसेवक अण्णा हजारे यांनी कवी संदीप राठोड यांच्या 'भूख छळते तेव्हा . . .' या काव्यसंग्रहास दिलेला शुभ संदेश पहिल्याच पानावर छापलेला असून या काव्यसंग्रहास पुण्यातील जेष्ठ साहित्यिक मा. श्री. नयनचंद्र सरस्वते यांनी 'व्यक्तीकडून समष्टीकडे नेणारे व समष्टीकडून व्यक्तीकडे नेणारे हे वेदनेचे खंडकाव्य' अशा शब्दातप्रास्ताविक दिलेले असून रसिकांच्या काळजाचा ठाव घेण्यात सदर काव्यसंग्रह निश्चितच यशस्वी होईल असा विश्वास व्यक्त केला आहे. कवी आपले आयुष्य जगत असतांना जे जे भोगले ते ते अनुभव, भावना कोणतीही अतिशयोक्ती न करता आंतरिक सल या कवितासंग्रहाच्या माध्यमातून वास्तववादी पध्दतीने मांडण्याचा प्रयत्न केला आहे.

।।६।।

'भूख छळते तेव्हा . . .' मधील सामाजिक जाणीवा : 'बंजारा' हा समाज मुळातच इंग्रज येण्याच्या आधी व्यापारी म्हणून सुपरीचित होता. भारतातील सर्व राजेरजवाडे यांना युध्द सामुग्रीसह अनेक गरजा भागविण्याचे काम करायचा. त्यामुळे सर्व भारतभर भ्रंमती करण्याचा त्यांच्याकडे परवानाच होता. त्यांना कोणीही अडवत नव्हते. लाखोच्या संख्येत बैलांचा लवाजमा यांच्याकडे वाहतूक करण्यासाठी असायचा. इतिहासात याचे पुरावे आहेत. मात्र इंग्रजांनी भारतातील विरोध करणाऱ्या राजे रजवाडे यांना नामोहरम करायचे असेल, वर्षानुवर्ष राज्य करायचे असेल तर रसद पुरविणारे यांचा बंदोबस्त आधी केला पाहिजे या कुटील हेतूने सर्व बंजारा जमातीच्या लोकांना सापडतील तेथे गुन्हेगार म्हणून घोषीत करून तारेच्या कुंपणात डांबले. त्यामुळे संपूर्ण भारतात बहुतांशी ठिकाणी बंजारा समाजाची वस्ती (तांडा) डोंगरदऱ्यावर, नापिक जमिनीवर जास्त आढळते. काळानुसार व परिस्थितीनुसार उपजीविकेसाठी जे काम मिळेल ते स्वीकारले. आजही अनेक तांड्यतील बंजारा समाजातील लोक शेती, पशुपालन यांच्या बरोबर उपजीविकेसाठी साखर कारखान्यावर ऊस तोड कामागार म्हणून काम करतांना घदिसतात. ऊस तोड काम कमी दर्जाचे किंवा वाईट आहे असे नाही. पण ऊस तोड कामगारांच्या पिढीं पिढी हे काम करीत आहे. यांच्या कष्टाचे चीज का होत नाही. यांची आर्थिक साखरकारखान्यावर परिस्थिती का सुधारत नाही ? हा प्रश्न सर्वांनाच पडतो. कवी संदीप राठोडचे आई आणि वडील पोटाची खळगी भरण्यासाठी ऊस तोड करण्यासाठी जातात.

तांड्यातील माणूस इतर समाजातील वर्गरचना मानत नाही. कारण तांड्याची स्वंतत्र अशी समाजरचना आहे. स्वत:ला श्रेष्ठ समजला जाणारा या वर्गातही श्रेष्ठ कनिष्ठ अशी रचना आहे. पण ती स्वत:ची आहे. बाहेरच्या समाजाला ती समजत सुध्दा नाही. रोटी बेटी व्यवहाराचा असो वा विधीकर्म असो त्यात फरक जाणवतो. अलिकडे तर वेगळीच वर्गरचना समाजात जाणवते ती बंजारा समाजातही आहे. श्रीमंत व्यक्तीला आदर मान सन्मान जास्त घमिळतो. तर गरीबाची फारच हलाकिची परिस्थिती जाणवते. जिवंत राहण्यासाठी केविलवाणी धडपड चालू असते. जीव चिमटीत पकडून, स्वास रोखून रखरखत्या उन्हात म्हणजे खडतर परिस्थितीतही मार्ग काढण्यासाठीची धडपड त्यांच्या पहिल्याच कवितेतून व्यक्त झाली आहे. उदरनिर्वाहाच साधन नसल्यावर किंवा साधनच हिसकावून घेतल्यावर भाकरीसाठी जी वणवण करावी लागते, भटकावे लागते जेव्हा. . .

अतृप्त राहिलेल्या आत्म्यांनाद्य जगावं की मरावं ।
हेच कळत नाही । भूक छळते तेव्हा . . .।।

अंगावर काटा येणारा भयानक असे एकविसाच्या शतकातील वास्तववादी चित्रण

संवेदनशील मानवास चिंतन करायला प्रवृत्त मात्र करते.

'भूख छळते तेव्हा . . .' मधील बापाचे चित्रण : वेदनांच्या कुळात जन्माला आलेला कवी संदीप राठोड यांचे वडील लहू तुकाराम राठोड ऊसतोड कामगार. कष्ट पाचवीलाच पुजलेलं. बीड जिल्ह्यातील पौळाचीवाडा नावाच्या तांड्यत जन्माला आलेला हा कवी. लहानपणापासूनच ऊस तोड कामगाराचा मुलगा असल्याकारणाने त्यांना मुकादमाकडून उचल घेतलेल्या पैशावर कपडालत्ता, खाणपिणं, दुखणंखुपणं सर्व भागवावं लागायचं. हातात कोयता घेऊन पोटाची खळगी भरण्यासाठी कवीचे वडील लहू तुकाराम राठोड व आई पारूबाई लहू राठोड छाती फुटेस्तोवर काबाडकष्ट करायचे. ऊस तोडतांना पाचटाने कापलेल्या देहातून भळभळणारे रक्त ठसठसणाऱ्या वेदनांची होळी करून चार सहा महिने ऊस तोड करायचे व नंतर पावसाळ्यात कोरडवाहू जमीन करायचे त्यात मध्ये मध्ये दुष्काळ पडायचा. लेकराबाळांच्या ताटातला घास मातीत जाताना पाहणारा आशावादी बाप सरतेशेवटी रिकामे हात पाहून आतल्याआत तीळतीळ तुटायचा. आतड्यंना पडणारा पीळ घालवण्यासाठी भुकेचा प्रश्न सोडविण्यासाठी पाठीला पोट चिकटलेला बाप काळजावर दगड ठेवून खाली मान घालून भाकरीच्या शोधात बायको पोरांना घेऊन अनवाणी भटकत राहिला. आपल्या वाट्यला आलेले जीवन आपल्या मुलांच्या वाट्यला येवू नये म्हणून अनवाणी पायाने भूक तळहातावर ठेवून फिरत राहिला. शेवटी वडिलांना शेतमजुरीचे काम मिळालेते निघोज गावात आणि भटकंतीला पूर्णविराम मिळाला.

कवी बापाचे वर्णन करतांना म्हणतो की बाप शब्दातून कळणार नाही कारण हा विषयच इतका खोल आहे की, बाप लौकिक घराचा अनमोल रत्न आहे. बापाचा महिमा कितीही वर्णन केले तरी कमीच आहे कारण बाप आहे अमृताची खाण । बाप आभाळाची माया। बाप खडक पाषाण... । कवीचा बाप हा इमानाचा पक्का आहे. कष्टाचा पुजारी आहे. त्याला कष्टातच भगवंत दिसतो. त्याची वाणी म्हणजे कवीला साखरेच्या पाकासारखी गोड वाटते कवीने वडीलांनी दिलेला संदेश आपल्यालाही अप्रत्यक्ष देत म्हणतो की, गिधाडांनी तुच्छतेने । तुला कितीही पाहू दे । काळजात पोरा तुझ्या । नेकी जीवंत राहू दे ... । नवा सूर्य या ६ कवितेतील कवीचे शब्द काळजावर कोरून ठेवावे असे आहे. कवी बापाचे वर्णन करतांना म्हणतो की, आयुष्यात पडलेले । बाप खड्डे बुजवितो । रोज एक नवा सूर्य। काळजात रूजवितो ..बापाला जगाचा अन्नदाता संबोधित कवीन बापाच्या माध्यमातून सर्व शेतक—यांच्या व्यथाच जणू मांडल्या आहेत. सदाकदा बापामागे । दु:ख सारे गोंडा घोळे । चंद्रमौळी झोपडीत । रोज आरामात लोळे ...। थकलेला बाप माझा । भूख भागितो पाण्याने । जग खाऊन पोसते । त्याच्या कष्टाच्या दाण्याने... ।

कवीच्या कवीतेतील बाप हा ग्रामीण भागातील द्रारिर्द्याचा शाप मिळालेला शेतकरी, शेतमजूर आहे. कवीचा बाप हा बंजारा समाजाचा प्रातिनिधिक रूप आहे. उपजीविकेसाठी भंटकंती करणाऱ्या मजुराचा प्रातिनिधिक रूप आहे, ऊस तोड कामगारांच्या प्रतिमा बापामधून कवी जिवंतपणे आपल्यासमोर उभा करतो. आपल्या वाट्यला आलेल्या वेदना, दु:ख, कष्ट आपल्या मुलाच्या वाटेला येवू नये म्हणून रांत्रदिवस झिझणारा आशावादी आहे.

घामाचा भाव कोसळल्यावर
काळजाचे वाढायचे ठोके
बाप बसायचा चिंतातूर
घालून गुडघ्यात डोके

या शेतकरी बापावर लिहिलेल्या कवितेच्या ओळी वाचकांना चिंतन करायला प्रवृत्त करतात.

'भूख छळते तेव्हा . . .' मधील आईचेचित्रण : कवी संदीवची आई पारूबाई लहू राठोडभारतीय संस्कृतीतील स्त्रीचे प्रातिनिधिक रूप. बापाच्या खांद्याला खांदा लावून सर्व सुख दु:खात बापाबरोबर राबणारी, ऊस तोड करणारी, शेतमजूर म्हणून काम करणारी तसेच मुल बाळं व पतीला सांभाळून संसार करणारी. कवी म्हणतात 'ढेकळात राबणारी माय ।कमरेत पुरती मोडली । तसूभर तिने तरिही। जिगर नाही सोडली. ।। शेती मातीवर अपार प्रेम करणारी माझी आई ही मुलांच्या वाटेला हाल अपेष्टा येवू नये म्हणून आयुष्यभर वेदनेचा कोंडमारा सोसून सकारात्मक व आशावादी कायम ठेवणारी कवी आई आहे. उभी वादळात माय या कवितेत कवीने आईची व्यथा मांडली आहे.ग्रामीण भागातील आई आपल्या लहान बाळाला घरी ठेवून रानावनात काबाड कष्ट करायला जाते कारण आपल्या घरातील संध्याकाळची चूल पेटली पाहिजे, बाळाला दोन घास। मिळाले पाहिजे काट्यकुट्यची पर्वा न करता वेदना डोळ्यात साठवून बाळाला नाईलाजाने घरी सोडून जाते तेव्हा ती स्वत: स्वत:शीच हितगुज करते आणि समजूत काढते की,

तुझ्या सुखासाठी बाळा। केले कणखर पाय।
लाखो झेलून संकटे। ऊभी वादळात माय।।

आईचे कष्ट कवीला कळायचे प्रश्नही पडायचे की कष्ट करतांना माय सर्व भान विसरून जाते आणि वाघिणीचे बळ तिच्या त्या शरीरात कुठून संचारायचे. आईला कष्टाची सवयच अशी झाली की हे दु:ख,कष्ट तिला आपलसं वाटायला लागलं. आईने माझ्यासाठी उन्हातान्हात देह झिजवला कधी विश्रांती घेतली नाही याची कवीला जाणीव आहे. तेव्हा कवी म्हणतो —

काळजात संस्काराचे। लक्ष दिवे पेटविले।
तिच्या पोटी जन्म झाला । भाग्य माझे उजळले।।
माय पाचटाचे घाव । रोज टाकते धुवून । देते सुखाने ढेकर । कोर भाकर खाऊन ...तुझ्या सुखासाठी बाळा ।केले कणखर पाय। लाखो झेलून संकटे। उभी वादळात माय ...माय राबली राबली रान जीवाचे करून गाडा हाकला घराचा मोल मजुरी करून कष्ट करतांना माय भान विसरून जाई वाघिणीचे बळ जणू अंगी संचारून येई ... तिच्या आसंवाचे मोल काळ्या मातीला कळाले ओल्या मातीतून मोती तिच्या ओंजळीत आले...

'भूख छळते तेव्हा . . .' मधील वेदना :

'भूख छळते तेव्हा . . .' या काव्यसंग्रहामधील व्यथा, वेदना, दु:ख, कष्ट प्रत्येक कवितेत दिसते म्हणूनच यांच्या काव्यसंग्रहाला वेदनेचे खंडकाव्य असेच म्हणावेशे वाटते. . 'वेदनेची होळी' या कवितेत कवी म्हणतात —

बाप तोडायचा ऊस । माय बांधायची मोळी ।
काळजात खोल वेदनेची । रोज पेटायची होळी ।।
छातीत निघायची कळ । दिवसभर तोडून ऊस ।
रात्रभर छळायची वेदना । अदलून बदलून कूस ।।पृ. ३२

अंत:करणाला स्पर्शून जाणारे, काळजाला भिडणारे शब्द व या शब्दातून व्यक्त केलेली खंत —छातीत निघायची कळ। दिवसभर तोडून ऊस । रात्रभर छळायची वेदना । अदलून बदलून कूस । सुखाशी काडीमोड करून बापाने भाकरीचे ऋण फेडण्यासाठी वेदनेशी जणू बापाने जुळवूनच घेतले आहे असे सारखे वाटते. आपल्या समाजव्यवस्थेत असा एक वर्ग आहे की, त्याच्या नशिबात खूपच जास्त कष्ट वाढून ठेवले आहे. सुखासमाधानाच्या कोणत्याही साधनसामग्रीशी ह त्याचा काहीही संबंध नाही. कवीला सात्यत्याने प्रश्न पडतो की भूतकाळाशी नाते तोडून आणि वर्तमानकाळाला संपूर्ण विसरून जगणे जगले जात आहे तिथे भविष्य कसे उज्वल होणार. हा प्रश्न अधोरेखित करीत कवी म्हणतात की, पोरं सोरं माय बापाचे । वाटून कष्ट घेती । पुस्तकाआधी लेकरांच्या । येतो कोयता हाती ... । अशा वास्तवतेचं वर्णन कवी करतांना दिसतो. अशा परिस्थितीतून बाहेर काढण्यासाठी कुणीही प्रयत्न करतांना दिसत नाही. अशांसाठी जणू काही सर्व वाटा बंद झाल्या आहेत की काय असे वाटते. दूर्बल घटकांचे अधिकाधिक शोषण करण्याकडे धनिक वर्गाचे लक्ष लागलेले असतांना ही शोषण व्यवस्था बंद करण्याकडे कवीचा कल दिसतो. अवस्था बघूनतिची एकही ऊर फाटला नाही. दानशूर कुणीही तिला कर्ण भेटला नाही... वेदना मांडतांना कवी व्याकुळ होवून हतबलता मांडत राहतात. या काव्यसंग्रहात ऊस तोड कामगाराचे दु:ख, वेदना मांडलेल्या आहेत.

वेदनेतून साकारते ते अस्सल असते असे म्हणतात त्याप्रमाणे कवीच्या प्रत्येक ओळीत वेदना भरलेली दिसते. त्यामुळे कवी संदीप राठोड यांची कवीता ही अस्सल वास्तववादी जाणवते. कुठेही कृत्रिमपणा जाणवत नाही. या काव्यसंग्रहात कवी ज्या समाजात जन्माला आला त्या समाजाची भूकेसाठीची वणवण प्रातिनिधिक स्वरूपात व्यक्त करण्यात कवी यशस्वी झाले आहे 'कष्टाची फुले' या कवितेत कवी म्हणतात — मोळ्या वाहता वाहता । अंगभर घाम फुटे।काटा टोचता पायाला। काळजात कळ उठे

'भूख छळते तेव्हा . . .' मधील ग्रामीणत्व :एकविसाव्या शतकात माहिती आणि तंत्रज्ञानाच्या या काळात ग्रामीण भागातील प्रश्न घविचार करायला लावणारे आहे. साठोत्तरी काळातील प्रश्न हे ग्रामीण साहित्याच्या माध्यमातून समोर आले त्याचे कारण ग्रामीण भागात शिक्षण पोहचले आणि आपल्या व्यथा वेदना ग्रामीण भागातील शेती मातीविषयीचे प्रश्न, समस्या ग्रामीण भागातील तरूण स्वत: व्यक्त करू लागला. पण ते प्रश्न, त्या समस्या आणि आज जिथे माहितीचा स्फोट झाला आहे. जग हे एक खेडं वाटू लागले आहे, तंत्रज्ञानात वेगाने बदल घडत आहे, जगातील परिवर्तन खूप वेगाने होत असतांना मात्र असे काही वर्ग आहे की ज्यांच्या अजूनही मुलभूत गरजाही पूर्ण झालेल्या नाहीत. खूप कष्ट, मेहनत करून जिद्दीने जगाच्या बरोबर धावण्याची त्याची कसरत पाहून आश्चर्य वाटते. या सर्व गोष्टींचे चित्रण अलिकडच्या साहित्यात होतांना दिसत आहे. या काव्यसंग्रहात ग्रामीणत्व म्हणून ज्याला म्हणता येईल असे अनेक प्रश्न आपल्या

कवितातून कवी संदीप राठोड यांनी मांडले आहे. त्यात ऊस तोडीला जातांना, कष्टाचा हंगाम, कष्टाची फुले, कोयता, कष्टकरी, प्रश्न, दास,दुष्काळाच्या झळा,बळी, काळी माय, दोन घासांचे दारिद्र्य, रिकामी झोळी, अस्मानी संकट, जीवंत आहे,साकडे, दुष्काळ, होरपळ, घर सोडतांना, गुन्हा, स्मशान, भाकर या सर्व कविता या ग्रामीण विषयावरच लिहिलेल्या असून शेती, माती, शेतमजूर, त्यांच्या समस्या, शेतकऱ्याचं संपूर्ण आजुबाजूचा समाज, निसर्ग याचं वर्णन या काव्यसंग्रहाचा आत्माच आहे.

'भूख छळते तेव्हा . . .' मधील चित्रमयता :

आशयाला अनुरूप संदीप राठोड यांच्या स्वरचित काव्यसंग्रहाला मुखपृष्ठ तयार करण्याचे काम शेवगावचे शीतलकुमार गोरे यांनी केले आहे. मुखपृष्ठावरून या काव्यसंग्रहाच्या आतील आशयाची कल्पना येते. भाकरीचे चित्र आणि ते मिळविण्यासाठी आतुर असलेले अनेक हात खूप काही सांगून जातात. तसेच या काव्यसंग्रहाच्या सुरवातीपासून तर शेवटपर्यंत ठिकठिकाणी आशयाला अनुरूप रेखाचित्रेही रेखाटली आहे. सुरवातीलाच कवी आई आणि वडिलांना हे काव्यसंग्रह अर्पणत्रिकेच्या रूपात वाहतात त्यावेळी कवीच्या आई वडिलांचे रेखाचित्र खूपच सुंदर रेखाटले आहे. या काव्यसंग्रहात एकूण २९ रेखाचित्रे रेखाटलेली असून त्यात ऊस तोड करतांना कामगाराचे चित्र, त्यांच्या निवाराचे ठिकाण झोपडीचे चित्र, उपजीविकेसाठी भटकंती करणाऱ्या समाजाचे चित्र, गावाकडील घरांचे चित्र, बाप आणि मुलाचे चित्र, बैलगाडीचे चित्र, शेतात काम करणाऱ्या शेतमजुराचे चित्र, विहिरीचे चित्र असे अनेक रेखाचित्र कवी संदीप राठोड यांच्या कविता रसिकांच्या हृदयापर्यंत पोहचवायला अधिकच हातभार लावतात.

भाषाशैली : कवी संदीप राठोड यांच्या भूक छळते तेव्हा ... या काव्यसंग्रहातील भाषा ही साधी सरळ असून कुठेही कृत्रिमता वा संस्कृतप्रचुरता वा काहितरी बडेजावपणाचा आव आणणारी नाही. वास्तववादाचा प्रत्यय प्रत्येक शब्दागणिक आपल्याला येतो. कवी हा ऊसतोड कामगाराचा मुलगा असून ऊस तोडणी कामगाराचे जीवन स्वत: अनुभवले आहे. त्यामुळे बहुतांशी कवितांमधून ऊसतोड कामगाराच्या समस्या, त्यांच्या वेदना त्या कामाशी निगडित शब्दातून कवीने व्यक्त केले आहे. हे शब्द या ओळी ज्यांनी स्वत: अनुभवले असेल तरच त्यांच्या लेखनातून हे साकारू शकते याचा प्रत्यय येतो. चार ओळींचे चरण असलेली बहुतुंशी मुक्तछंदात लिहिलेली असून यमक साधलेला दिसतो त्यामुळे वाचतांना लयबध्दतेची, गेयतेची जाणीव येते. या काव्यसंग्रहातील काही शब्द नमुना म्हणून देण्याचा प्रयत्न केला आहे. जेणेकरून आपणास या काव्यसंग्रहातील भाषेचे आकलन होईल व आशयाचा आस्वाद घेता येईल. ग्रामीण भागात राहिलेल्यांना याची प्रचिती येईल, आशयाचे आकलनही होईल मात्र शहरी भागातील राहणाऱ्यांना मात्र याचे कितपत आकलन होईल यात शंकाच आहे. कारण काही शब्द फक्त त्या व्यवसायाशीच निगडित आहे.

भेळा– ऊस तोड झाल्यानंतर ऊसाच्या वरच्या हिरव्यागार वैरणाची मोळी बांधली जाते तिला भेळा म्हणतात. ऊसतोड कामगार ऊस तोड केल्यानंतर यातील काही भाग आपल्या बैलांना खाऊ घालण्यासाठी नेतात.

कोपी – ऊस तोडणी करण्याच्या ठिकाणी रात्री आराम करण्यासाठी ऊस तोड कामगार जी झोपडी उभारतात त्यास कोपी म्हणतात.

तोड – ऊस कापण्याचे काम किंवा ऊस कापणी करून त्यांची मोळी बांधून कारखान्यापर्यंत ऊस नेण्याचे काम.

साळणे – ऊस तोडल्यानंतर पाचट सोलून ऊस बाजूला व पाचट बाजूला करणे या कृतीला साळणे म्हणतात.

फड – ऊस तोडीचे ठिकाण, ऊसाचा मळा

पाचट – ऊसावरील वाळलेली साल

कोयता – ऊस कामगारांच्या जवळ ऊस तोडणीसाठी असलेला अवजार, हत्यार

तालेवार – पैशाने श्रीमंत, गर्वीष्ठ

छदाम – एकही पैसा वा रूपये नसणे.

शब्दबंध: या काव्यसंग्रहातील काही शब्द वा शब्दबंध पाहिले तर कवी योग्य शब्दात आपल्या भावना प्रभावीपणे मांडतात याची प्रचिती येते उदाहरणार्थ धस्कटभरल्या पायातून, फडकरीण, हुचकी खातांना, इळ्यावाणी वाकलेली, अंगअंग रक्ताळते, ऊस साळतांना, फडाफडात मायेने, कष्टाची फुले ,धावते कष्ट, फुटका मणी, भेळा बांधणे, वाढा जोडून, कोपीत पडून, तरणाबांड ऊस, श्वासांची माळ, फाटलेला काळीज, वांझोटे ढग, अवसानघातकी पाऊस, वेदनेशी करार, आंतड्यंचे लचके, बळीराजाचा बळी, परजिवींचा भार, आसवांची माळ, घासांचे दारिद्र्य आदी.

'भूख छळते तेव्हा . . .' या काव्यसंग्रहाविषयी अभिप्राय :

कवी चंद्रकांत वानखेडे : घामाच्या धारेत भिजून जन्माला आलेली कविता ... कोयत्याचा प्रत्येक घाव वर्मी लागल्या नंतर तात्काच्या थेंबात न्हाऊन आलेली

कविता... जे जे भोगले... ते ते मांडले या न्यायाने व्यक्त होणारी कविता प्रतिभेचे लेणे लेऊन आली आहे. म्हणून ती जितकी अस्सल आहे तितकीच देखणी आहे. फक्त एकट्य ऊस तोडणी कुटुंबाची ही वेदना नसून भूक छळणाऱ्या अवघ्या मानव जातीच्या वेदनेचा टाहो आहे. वखवखलेली भूक शमविण्यासाठी जीवाचं रान करून राब राब राबणाऱ्या प्रत्येक माणसाच्या दु:ख ही कविता आहे . . .

कि.बा. तथा अण्णा हजारे : ऊसतोड कामगार आणि मिळेल ते काम करून उपजीविका करणाऱ्या मजुरांच्या जगण्याचा संघर्ष या तरुण कवीने आपल्या कवितेतून प्रभावीपणे मांडला आहे. दिन दुबळ्यांचे दु:ख त्यांची वेदना जेव्हा कवितेतून व्यक्त होते तेव्हा ती कविता जिवंत आणि ताकदीची वाटते... पोटासाठी भटकंती करावी लागणाऱ्या वंचित समाजाची वेदना या कवितेतून प्रतिबिंबित झाली आहे... अनेक कवितातून स्त्रामाचे मोल सांगण्याचा प्रयत्नही केला आहे.

डॉ. नयनचंद्र सरस्वते : तहान भूक विसरून काम करणे ... असे आपण नेहमीच म्हणत असतो, कामाप्रती असणारी निष्ठा त्यातून अधोरेखित होत असते. पण भूक भागविण्यासाठी स्वत:चे अस्तित्व, स्वत्व इतकंच काय माणूस असणे सुद्धा विसरून काम करावे लागते तेव्हा काय करावे.. ? तेव्हा होणारी जगण्याची परवड शब्दात मांडणे फार कठीण होऊन बसते. भूक ... भूक ... फक्त भूक ... आणि ती भूक भागविण्यासाठी जगण्याचा चाललेला अविरत संघर्ष हे वास्तव सगळ्याच व्यवस्थांवर प्रश्न चिन्ह निर्माण करणारे असते. अन्न, वस्त्र आणि निवारा या माणसाच्या मुलभूत गरजा असतात. या गरजा भागविण्यासाठी जीवाचा आकांत करावा लागतो. आपले नांदते घरदार, गावशीव सोडून देशोधडीला लागावे लागते आणि इतके करूनही हि भूक छळत राहते तेव्हा संवेदनशील मनाने फोडलेला टाहो म्हणजे कवी संदीप राठोड यांचा कविता संग्रह 'भूक छळते तेंव्हा...' होय.

कवी संदीप राठोड : ... अतिशय कष्टमय जीवन व हलाखिच्या परिस्थितीत आयुष्य जगतांना आई वडिलांची ऊब जीवनाला आकार देत गेली. अनेक आव्हानांचा सामना करीत, कधी पोटाला चिमटे घेत तर कधी वेदनेतून प्रेरणा घेत मजबूत व कार्यक्षम बनत गेलो. अन् तेव्हा कोठे भाकरीच्या शोधात भटकणाऱ्या समाजाच्या असंख्य वेदनांनी रक्तबंबाळ झालेले शब्द कुरतडलेल्या काळजातून आपसूकच पाझरू लागले. आयुष्यभर सोसलेल दु:ख अंत:करणातील व्यथा संवेदनशील मनाची कवाडे उघडून काळजाला ओलेचिंब करत एकेक शब्द कागदावर जन्म घेऊ लागले त्यातून संदीप राठोडचा कवी म्हणून उदय झाला.

'भूख छळते तेव्हा . . .' या काव्यसंग्रहाचे विशेष व वेगळेपण :

१. ऊसतोड कामगारांच्या जीवनातील कष्ट, वेदना वास्तववादी दृष्टीकोनातून व्यक्त केल्या आहेत.

२. बंजारा समाजाचे प्रातिनिक स्वरूपात जीवन जगण्यासाठी करावी लागणारी भटकंती कवितेच्या माध्यमातून रेखांकित केली आहे.

३. स्वातंत्र्याच्या इतक्या दिवसानंतरही अन्न, वस्त्र, निवारा आणि शिक्षण यासाठी करावा लागणारा संघर्ष कवितेतून समाजासमोर मांडला आहे.

४. या काव्यसंग्रहातून ग्रामीण भागातील शेतकरी व कष्टकरी मजुरांच्या जीवनातील कष्ट, वेदना, दु:ख अभिव्यक्त केलेला आहे.

५. या काव्यसंग्रहातील आशय पाहिल्यास कवितेतून कविने जणू आपले जीवनचित्र रेखाटल्या आहेत याची जाणीव होते.

६. या संग्रहातील कवितेतून आई व माती यांचे ऋण कविने अंत:करणापासून व्यक्त केले आहे.

७. या काव्यसंग्रहातील वाचकांचे लक्ष वेधणाऱ्या कविता या बापावर असून बापाचेचित्रण अंत्यत कसदार शब्दात व्यक्त केले आहे.

८. कवितेतील भाषा ही साधी, सोपी, सरळ असून कुठेही कृत्रिमतेचा आव नाही. तसेच लयप्रधान, नादप्रधान शब्दरचना असून यमक साधण्यात कवीला चांगलेच यश लाभलेल दिसते.

९. बहुतांशी कविता मुक्तछंदात असून आशय व्यक्त करण्यासाठी चार चार ओळीचे चरण कविने घेतलेले आहे.

१०. वेदनेतून साकारल्यामुळे सर्वच कवीता ह्या अस्सल आहेत, वास्तववादी आहेत.

संदर्भ :

१. राठोड संदिप (२०२२), भूक छळते तेव्हा... पारनेर साहित्य साधना मंच, राणेगणसिध्दी, अहमदनगर

२. कुलकर्णी अरविंद वामन (१९९७) भारतीय साहित्य विचार, प्रतिमा प्रकाशन, पुणे, (द्वि. आ.)

३. जाधव (डॉ.) रमेश,विमुक्त रंग, गोरवाणी प्रकाशन, औरंगाबाद

४. देसाई,लिमये (१९९५) आधुनिक मराठी वाङ् मय दर्शन, फडके आणि कंपनी प्रकाशन, कोल्हापूर

'RESEARCH JOURNEY' International E- Research Journal
Vol. 12, Issue 1 : Multidisciplinary Issue
Impact Factor : 6.625 (SJIF) Peer Reviewed Journal
E-ISSN : 2348-7143
Jan.-March 2025

बंजारा बोली : भाषिक भेद (समाज भाषा वैज्ञानिक दृष्टीकोनातून अभ्यास)

डॉ. व्ही. बी. राठोड
केपीजी कला, वाणिज्य व विज्ञान महाविद्यालय, इगतपुरी
ता. इगतपुरी, जि. नाशिक - ४२२ ४०३
Email –rathodvishnubhaurao@gmail.com, Mob. No. : 8208637189, 9175690489

❒ प्रास्ताविक:

औपचारिक संज्ञापन व्यवहारातील भाषाप्रयोगाला भाषा असे म्हणतात. अनौपचारिक व्यवहार हा बोली मधून होत असतो. कालांतराने काही भाषा ह्या औपचारिक वा अनौपचारिकरित्या संज्ञापन व्यवहारातून बाद झालेल्या असतात. परतुं त्या भाषातील लिखित स्वरुप समकालीनांचा अभ्यासविषय असतो. त्यामुळे ज्या भाषेचे लिखित अस्तित्वस्वरुप कायम आहे. पण मौखिक प्रयोग संपुष्टात आले आहेत अशा भाषा / बोलीला **अभिजात भाषा / बोली म्हणतात.**[१] काही बोली संभाषणात नसतात पण व्यक्तींच्या बौध्दिक जीवनात अशा भाषांना स्थान असते. बंजारा बोली भाषेचा समाजभाषा वैज्ञानिक दृष्टिकोनातून अभ्यास करताना असे लक्षात येते की, बंजारा बोली भाषेतील भाषिकभेद अनेक कारणांमुळे झालेला पहावयास मिळतो. त्यात लिंगभेद, प्रादेशिकता, व्यावसायिकता, वय, धर्म, जात, अर्थ अशा अनेक कारणांचा समावेश होतो. भाषाविज्ञानात भाषा ही बोलली जाणारी असे मान्य केलेले असले तरी समाजभाषाविज्ञानात भाषा (Language) आणि बोली (Dialect) यांच्यात भेद केला जातो. हा भेद समाजभाषावैाानिक काही विशेषाच्या आधारे स्पष्ट करताना दिसतात. हे विशेष कोष्टकाच्या आधारे अधिक सुस्पष्ट होते.

बंजारा बोली भाषा : स्वरुप भेद

अ.न.	भाषा विशेष	अभिजात भाषा	प्रमाण भाषा	बोली	कृत्रिम भाषा
१.	ऐतिहासिक	√	√	√	×
२.	प्रामाण्य	√	√	×	√
३.	स्वायत्तता	√	√	×	√
४.	जिवंतपणा	×	√	√	×

(**संदर्भ**: सामाजिक भाषाविज्ञान - डॉ. रमेश वरखेडे,शब्दालय प्रकाशन, श्रीरामपूर, व्दि.आ.२००१)

काळानुरुप व्यक्ती, समाज, धर्म, संस्कृती, साहित्य परिवर्तन होत असते. परिवर्तन झाले नाही तर त्याची प्रगती संपते वा त्याचे अस्तित्वच संपते. भाषेच्या बाबतीतही असेच म्हणता येईल. काही भाषा कालांतराने मागे पडू लागतात. संज्ञापनव्यवहारातून बादही ठरतात. मात्र अभिजात भाषा म्हणून त्यांचा वारसा शिल्लक राहतो. अशा भाषा कुणाच्याच मातृभाषा नसतात. काही बोलींना विशेष प्रतिष्ठा प्राप्त झाली की त्यांना प्रमाण भाषेचे स्वरुप प्राप्त होते. भाषाविशेषाच्या आधारे बंजारा बोलीचा विचार खालीलप्रमाणे करता येतो.

१. ऐतिहासिकता (Historicity):

प्रत्येक भाषेला एक परंपरा असते. बंजारा बोली भाषेलाही एक परंपरा आहे, इतिहास आहे. कोणतीही बोली भाषा ही अचानक कोट्यावधी लोकसंख्या असलेल्या समाजाची संज्ञापनाची भाषा होऊ शकत नाही. बंजारा बोली भाषा ही संपूर्ण भारतातील बंजारा समाजाची संज्ञापनाची भाषा आहे. प्रत्येक राज्यागणिक, प्रदेशागणिक भेद पहावयास मिळत असले तरी या भाषेचा शोध घेत घेत काही अभ्यासक ऐतिहासिक भाषाअभ्यास पध्दतीच्या आधारे बंजारा ही

आर्य भारतीय भाषाकुळातील एक भाषा असल्याचे सिध्द केले आहे. त्यात ग्रीयर्सन यांनी बंजारा बोली ही आर्य भारतीय भाषाकुळातील एक शाखा असल्याचे सिध्द केले आहे. तसेच राजस्थानच्या भाषिक इतिहासातही बंजारा बोली ही राजस्थानी भाषेची एक बोली म्हणून सिध्द झालेले आहे. बंजारा बोलीची राजस्थानी, गुजराती, मारवाडी, हिंदी, मराठी या भाषांशी सांगड घालतांना अभ्यासक दिसतात. या सर्व भाषा ह्या आर्य भारतीय भाषाकुळातील भाषा आहेत. याचा अर्थ बंजारा बोली भाषा ही सुध्दा आर्य भारतीय भाषाकुळातील एक शाखा असून तिची मूळ जनक भाषा म्हणून संस्कृत भाषेकडे पहावे लागते. कारण आर्यभारतीय भाषाकुळातील मूळ जनक भाषा ही वैदिक संस्कृत आहे. गोर बंजारा ही प्राचीन क्षत्रिय गोरवंशीय जमात असून याचा इतिहास लिहिला गेलेला नाही. काही अभ्यासकांनी पुराव्याच्या आधारावर केलेल्या नोंदीवरुन बंजारा समाजाची ऐतिहासिकता थोडक्यात अशी सांगता येईल. आर्य हे भारतात अफगणिस्तान मार्गे उत्तरेकडून आले. याविषयीचा होर्न्ले या भाषावैज्ञानिकाने **आंतर बहिर्वर्तुळ** सिध्दांत मांडला. या सिध्दांतावरुन आर्य हे भारतात आले. गोर ही अशीच एक आर्याची एक टोळी होती. कित्येक वर्षे डोंगररागांत वस्ती केलेली असल्यामुळे अफगणिस्तानातील डोंगरांना **"गोर पहाडी '** असे आजही म्हटले जाते. इ.स.पूर्व या डोंगरात गोर वंशाचे राज्य होते. काबूल, कंदाहार, बलुचिस्तान मार्गे ते मध्यभारतात आले. भारतात गोरवंश हे क्षत्रिय वंश मानला गेला आहे. भारतात येण्यापूर्वी गोरगणांचे राज्य हे अफगणिस्तानात असावे. असा निष्कर्ष काढण्यामागचा उद्देश आजही काबूलच्या पूर्वेला गोर नदी, गोर घाटी, गोर गाव आणि गोर नावाचं एक स्वतंत्र प्रांतही आहे. [२] गझनवी ने विश्वकीर्ती की पीयासा से गोर सेना पर चढाई की।. गोरस्थान को गुर्जीस्थान भी कहा जाता है ।. [३] मुळ भारतीय वंशापैकी गौर वंश ही एक जमात आहे. याचे संदर्भ आपल्याला सिंधू संस्कृतीचे अभ्यास करतांना सापडतात. प्र.रा.देशमुख यांनी 'सिंधू संस्कृति ७ ग्वेद व हिंदू संस्कृती' या ग्रंथातून या विषयीचे विवेचन केलेले आहे. बंगाल त्रिपुरा या प्रातांत पाचव्या शतकात गोरवंशाचा राजा होता. याचा संदर्भ लोकसाहित्यातून मिळतो. राजा हरिश्चंद्र व गोपीचंद राजा यांच्याविषयीचे गायन, कथाकथन बंजारा समाजात आजही होत आहे. हुबळी गॅजेटियरमध्ये पश्चिम बंगाल मध्ये गोपीचंद राजाचा वंशज शशांक नावाचा राजा राज्य करीत असल्याचा उल्लेख आहे. शशांक ऊर्फ सोमा हे नाव बंजारा समाजात आजही पारंपरिक नाव आहे. जे चंद्रवंशी क्षत्रिय गोत्राशी संबधित आहे. शशांक यांनी इ.स.६०८ ते इ.स. ६३८ पर्यंत म्हणजे ३२ वर्ष राज्य केल्याचा उल्लेख चिनी प्रवासी युआन ह्युन त्संग च्या प्रवासवर्णनात सापडतो. " प्राचीन बखरोमें उल्लेख है कि बंगाल के प्राचीन राजा गोर थे।.अजमेर के गोर प्रसिध्द थे।. अजमेर पर चव्हाणो कि सत्ता आने के पहले गोरवंशोकी सत्ता थी ।. चव्हाणो ने उन्हे पदभ्रष्ट करके जीत लिया । बाद में गोर सेनापती ने मध्य प्रांत मे छोटासा राज्य स्थापित किया ।. यह राज्य सातसों वर्ष चला ।. इ.स.१९०९ में सिंधीयाने गोर को हराकर उनका राज्य जिता ।. राधिकादास यह अंतिम गोर राजा था ।." [४] पंडित गौरीशंकर ओझा यांनी राजपुतातील इतिहास शोधून काढला. गोरवंशाचा शिलालेखही पंडित गौरीशंकर ओझा यांनी शोधून काढला. हा शिलालेख माद्य शुक्ल ४९१ ते इ.स.५४१ या काळातील आहे. यामध्ये सुरवातीला देवीचे वर्णन आणि गोर क्षत्रिय वंशाचा उल्लेख आहे. गोरवंशाचा दुसरा शिलालेख पंडित गौरीशंकर ओझा यांनी शोधून काढला. उदयपूरच्या पूर्व दिशेला मंदसौर येथे हा शिलालेख आहे. यात महाराणा रायमलच्या काळात **गोर** हे **सामंत** होते असा अर्थ निघतो.

गोरवंशातील काहींनी काळानुसार लदेणी व्यवसायाकडे वळवून घेतले. शहाजनाच्या काळात सैन्यांना रसद पुरविण्याचे काम बंजारा करीत असत. असरफ खान सोबत जंगी भंगी राठोड व भगवान वडतिया दक्षिण भारतात आले. जंगी भंगी जवळ तर एक लाख ऐंशी हजार बैल होते. त्यांची वाहतूक शक्ती बघता त्यांना ताम्रपट देण्यात आला होता. ***" रंजन का पानी, छप्पर का घास । दिन में तीन खुन माफ । जहाँ असरफखाँनके घोडे । वहाँ जंगी भंगी के बैल खडे ।"***[५] शिवाजी महाराजांनी सुरत लुटीच्या वेळी बंजारा बैलांचा तांडा सोबत ठेवलेला होता. (संदर्भ - दैनिक सकाळ १५/०८/१९९९)उत्तर भारतात मोघल शासकांनी बंजारा समाजातील अनेकांना जहागिरदारी दिलेली होती. इंदौरच्या कृपाराम गोरला बावन गावाची जहागिरदारी दिलेली होती. पहाडगंज रासनिया भागात हजारो एकर जमीन ही लखीशाह गोर बंजाराकडे होती. शीख धर्माचे नववे गुरु तेग बहादूर यांच्या बलिदानाच्या वेळी तेगबहादूरचे

शीर आणि धड शत्रूच्या हाती लागू न देता लखीशाह बंजाराने गुरुला अग्नी दिला. तेव्हापासून शीख आणि बंजारा यात आत्मियतेचे संबंध निर्माण झाले. अनेक बंजारांनी शीख धर्माची दीक्षा घेतली. रेल्वे आल्यामुळे बंजारा समाजातील लदेणीचा व्यवसाय बंद पडला. त्यामुळे अनेक तांडे उद्ध्वस्त झाले. संत आणि साधूच्या माध्यमातून बंजारा समाजांनी इंग्रजाविरुध्द बंड पुकारले.भारतातील सर्वच तात्कलीन राजे रजवाड्यांना धनधान्यापासून हत्यारापर्यंत सर्व प्रकारची रसद बंजारा व्यावसायिक पुरवित असत. तात्कालीन राजेरजवाड्यांवर अंकुश ठेवावयाचे असेल तर सर्वप्रथम रसद बंद केली पाहिजे. हा कावा ठेवून इ.स. १८७१ साली इंग्रजांनी १९८ जातींना गुन्हेगार ठरवून त्यांना तारेच्या कुंपणात आहे त्या ठिकाणी बंदिस्त केले. भारत स्वतंत्र झाल्यानंतर डॉ. बाबासाहेब आंबेडकरांच्या सांगण्यावरुन पंतप्रधान पंडित जवाहरलाल नेहरु यांनी इ.स. १८७१ चा कायदा रद्द करुन यांना इ.स.१९५२ मध्ये मुक्त करण्यात आले. म्हणून आजही बंजारा समाज **विमुक्त** म्हणून ओळखला जातो. विमुक्त झालेला बंजारा समाज आहे त्या प्रदेशात स्थायिक झाला. तेथील परिस्थितीचा, हवामानाचा, स्थानिक भाषांचा, संस्कृतीचा अशा अनेक गोष्टींचा प्रभाव बंजारा समाजावर झाला त्यातून भाषाही प्रभावित झाली. कारण भाषा हा समाजाचा अविभाज्य घटक असते. महाराष्ट्रातील बंजाराने मराठी ही राज्यभाषा स्वीकारली. व्यवहाराची, शासन व्यवहाराची भाषा मराठी आणि तांड्यातील बंजारा समाजाची निजभाषा ही बंजारा बोली (लभाणी) हीच राहिली.

२. प्रामाण्य (Standardization) :

" "भाषिक प्रामाण्यामुळे प्रमाणभाषा आपल्या संपूर्ण भाषिक क्षेत्रात शब्दसंग्रह आणि व्याकरणाच्या दृष्टीने एकरुपता राखून असते. त्यामुळे ती सर्व ठिकाणच्या लोकांना समजते. एकाच भाषेत समाविष्ट असणाऱ्या बोलींच्या तुलनेने प्रमाणित रुपांना प्रतिष्ठा असते. म्हणून शिष्टमान्यता किंवा प्रामाण्य हे प्रमाण भाषेचे महत्वाचे वैशिष्ट्ये मानले जाते.' ' [6]·महाराष्ट्रातील बंजारा हा बंजारा (लभाणी) बोलीस आपली मातृभाषा मानत असला तरी ती त्यांची निजभाषा असून महाराष्ट्राची राज्यभाषा मराठी ही महाराष्ट्रातील सर्व भाषकांची मातृभाषा आहे. या सूत्राने पाहिल्यास महाराष्ट्रातील बंजारा समाजाची मातृभाषा ही मराठी आहे. या भाषेतूनच तो इतर समाजाशी व्यवहार करतो. तसेच शिक्षणाची आणि शासन व्यवहाराची भाषा म्हणूनही त्याने मराठी भाषेला स्वीकृत केलेले आहे. बंजारा बोलीतून आज साहित्य लिहिले जात असले तर मराठी भाषेत साहित्य बाराव्या शतकापासून लिहिले जात आहे. मराठी भाषेला विकसित होत जाणारी व्यवस्था असल्याने साहित्याचा एक मोठा इतिहास तिला लाभला आहे. त्यामुळे प्रमाण मराठी भाषेचा यादवकालीन, बहामनीकालीन, शिवकालीन, पेशवेकालीन व आंग्लकालीन असा अवस्थांतराचा इतिहाक्रम साहित्यावरुन अभ्यासता येतो. मात्र बंजारा बोलीत असा साहित्यानुगामी इतिहास नसल्यामुळे अवस्थांतराचा इतिहासक्रम सिध्द करता येत नाही. यासाठी ऐतिहासिक भाषाअभ्यास पध्दतीचा आधार घेऊन जन्यजनक सिध्दांताच्या आधारे बंजारा बोलीचा इतिहास सांगता येऊ शकतो.

३. स्वायत्तता (Autonomy) :

आपल्या अस्तित्वासाठी प्रमाण भाषा अन्य कोणत्याही भाषेवर अवलंबून राहत नाही. बोलींना मात्र प्रमाणभाषेवर अवलंबून रहावे लागते. बंजारा बोलीच्या बाबतीतही असेच म्हणावे लागते कारण बंजारा बोली भाषेत आज साहित्यनिर्मिती होत असली तरी लिपी म्हणून देवनागरी लिपीचा वापर करावा लागत आहे. तसेच इतर समाजापर्यंत पोहोचण्यासाठी मराठीचा आधार घ्यावा लागतो. काही साहित्यिक मराठी व बंजारा या दोन्ही भाषांचे संमिश्रण करुन साहित्य लेखन करीत आहेत. बंजारा बोली बोलणारा भाषिक मोठ्या संख्येने असला तरी मात्र त्याला त्या त्या राज्याची भाषा प्रमाण म्हणून स्वीकारावी लागली आहे. महाराष्ट्रातील बंजारा भाषकांनीही मराठी भाषा प्रमाण म्हणून स्वीकारलेली आहे. आज बंजारा बोलीची रचना, व्याकरण, अर्थविचार, विभक्ती विचार, अलंकारविचार अशा अनेक गोष्टी प्रमाण मराठीला समोर ठेवून केल्या जातात. शिवाय साहित्यरचना देखील मराठी साहित्यप्रकार समोर ठेवून लिहिले जात आहे. कारण प्रत्येक साहित्यप्रकाराची लेखनाची विशिष्ट अशी पध्दत आहे. कांदबरी हा प्रकार निवेदनपध्दतीने लिहिला जातो. नाटक हा संवादाच्या माध्यमातून मांडला जातो. यासाठी प्रमाण म्हणून मराठी साहित्य

समोर ठेवून लिहिले जात आहे. मराठी भाषेला मात्र याची गरज नाही. कारण त्यामध्ये मोठ्या प्रमाणात साहित्यलेखन झालेले आहे. म्हणजे स्वायत्ततेच्या दृष्टिकोनातून विचार करता बंजारा बोली ही मराठी या प्रमाणभाषेवर अवलंबून आहे.

४. जिवंतपणा (Vitality) :

""प्रमाणभाषा ही विकसनशील असते. त्यामुळे बोलणे आणि लिहिणे या दोन्ही बाबतीत जिवंतपणा असणे हे तिचे वैशिष्टये असते. संस्कृत लॅटीन भाषांमध्ये असा जिवंतपणा नाही. एका अर्थाने त्या मृत भाषा आहेत. कोणतीही प्रमाणभाषा ही मृत नसते. स्थिर व विकारशून्य भाषा असे तिचे स्वरुप नसते. निरनिराळया काळात विशिष्ट भाषिक प्रयोग प्रमाण मानला जातो. त्यामुळे आधीचा प्रमाण भाषिक प्रयोग कालांतराने अशुध्द मानला जातो. ''[७] बंजारा बोली भाषा ही सुध्दा विकसनशील अशी भाषा आहे. यात आज बोलणे, व्यवहार करणे या गोष्टी वर्षानुवर्षापासून घडत असल्या तरी या भाषेतून शासन व्यवहार वा साहित्यव्यवहार होत नव्हता. काळाच्या ओघामध्ये अनेक भाषा नष्ट होत आहेत. मात्र बंजारा बोली भाषेतून मोठ्या प्रमाणात साहित्याच्या सगळ्या प्रकारातून लेखन होत आहे. उदा. "काव्य' या वाङ्मय प्रकारात बंजारा साहित्यिकांनी मोठया प्रमाणात लेखन केलेले आहे. आत्माराम कनिराम राठोड यांचा "आत्माराम कनिराम राठोड यांच्या कविता', जवाहर राठोड यांचा "डोंगराचा ढोल', रावजी राठोड यांचा "मलाण', मोहन नाईक यांचा "केसूला', मांगीलाल राठोड यांचा "निळतळीचे पळसबन', उत्तम राठोड यांचा "व्यासपीठ', राजाराम जाधव यांचा "वादळवारा', प्रेमदास राठोड यांचे तीन काव्यसंग्रह प्रकाशित आहेत. त्यात "गराशा', "रानवा', "बंब', रामकुमार चव्हाण यांचा "काटेरी पुष्प', राजाराम राठोड यांचा "आर्त' किशन पवार यांचा "रानपाखरं', प्रमिला राठोड यांचा "नवे अंकुर', शशिकला चव्हाण यांचा "बंधमुक्ता', हरिश्चंद्र राठोड यांचा "उध्वस्त', नथ्थू चव्हाण यांचा "लेंगीनायक' , डॉ. रमेश जाधव यांचा "गोरकविता', अरुधंती नाईक यांचा "घुंगरवाळा', पंजाब चव्हाण, डॉ. रुक्मिणी पवार, प्रमिला जाधव, ललिता राठोड अशा अनेक बंजारा कवींचे काव्यसंग्रह प्रकाशित झालेले आहेत. बंजारा साहित्यिकांनी कादंबरी या प्रकारातही लेखन केलेले आहेत. त्यात रावजी राठोड यांची "गोठण', हरिश्चंद्र राठोड यांची "संघर्ष', राजाराम जाधव यांची "चंद्रकला' आदी. बंजारा साहित्यिकांनी कथा या प्रकारातही लेखन केलेले आहे. त्यात आत्माराम कनिराम राठोड यांचे "धरतीचे धनी', "नसाबनीती', आणि "हामार गोरुन बालबच्यार साकी' आदी कथासंग्रह प्रकाशित आहेत. शरद राठोड यांचा "सापळा', राजाराम जाधव यांचा "वाळवंटातील संधीप्रकाश', प्रदीप राठोड यांचा "साखळदंड', हरिश्चंद्र राठोड यांचा उद्ध्वस्त, आदी. उत्तम राठोड या एकमेव बंजारा समाजातील नाटककाराने नाट्यलेखन केलेले आहे. त्यांचे "नवे पर्व' आणि "तुझा गोधंळ मांडियेला'. उत्तम राठोड यांनी "गोंधळ' सारख्या लोककलाप्रकाराचा उत्तम वापर आपल्या नाट्यलेखनासाठी केलेला आहे. चरित्र या प्रकारातही लेखन झालेले आहेत. त्यात भाई प्रेमसिंग जाधव यांनी"नायकडा वसंत', रामराव महाराज यांनी "सेवाभायाचे चरित्र' रेखाटलेले आहे. आत्मकथनामध्ये पंजाब चव्हाण यांचा "याडी', शिवाजी राठोड यांचा "टाबरो', बळीराम पाटील यांचा "आलेख समाज प्रगतीचा', आत्माराम कनिराम राठोड यांचा "तांडा', रावजी राठोड यांचा "तांडेल', प्राचार्य मधुकर पवार यांचा "एका तांड्याची यशोगाथा' आदी आत्मकथने प्रकाशित आहेत. तसेच ललित गदय प्रकारात मोठया प्रमाणात लेखन झालेले आहे. बंजारा बोली भाषेचे हे जिवंतपणाचे लक्षण आहे. भाषेचा जिवंतपणा प्रत्यक्ष व्यवहार पातळीवर, संदेशनव्यवहार पातळीवर होत असतो.

डॉ. अशोक केळकर प्रमाण भाषेचे माहात्म्य सांगतांना की, "" समाजदृष्टया पाहिले तर प्रमाणबोली ही जोडण्याबरोबर तोडण्याचेही काम करते. भाषिक समाजातील सर्वांना ती जशी एकत्र आणते, निष्ठा आणि अभिमान हया भावबंधनात गुरफटवते, तशीच ती त्यांना शेजारच्या भाषिक समाजापासून अलग काढते. संस्कृतीदृष्ट्या पाहिले

तर प्रमाणबोली कालदृष्ट्या दूर असलेल्या पिढ्यांना जोडून परंपरा टिकवायला मदत करते. मागच्या पिढीचा आशय नंतर जन्मलेल्या, तुटलेल्या पिढीपर्यंत नेमकेपणाने पोहचवते, पण याचबरोबर प्रमाण बोली विचार, तंत्रविद्या, आणि भावनाभिव्यक्ती ह्या बाबतीत जाण उत्पन्न करते. आणि प्रयोगशीलता, परिवर्तनशीलता ह्या गुणांना मदत करते. कोणत्याही बोलीला एक आंतरिक नियमन, स्वभाव असतो. प्रमाण बोलीलाही तो असतो, पण त्याला जाणिवेची, नियोजनक्षमतेची एक किनार लाभलेली असते. ''[४].

❒ **प्रमाण भाषा व बंजारा बोली भाषा :**

भाषेचा सामाजिक अंगाने अभ्यास करताना समाजातील भाषेचे रुप लक्षात घ्यावे लागते कारण समाज हा बहुरंगी आणि बहुढंगी स्वरुपाचा असतो. म्हणजे विविधतेने नटलेला असतो. ही विविधता जात, प्रदेश, धर्म, व्यवसाय, लिंग आदी घटकांमुळे निर्माण होते. याशिवाय अर्थकारण आणि राजकारण यांच्यामुळेही भाषेचेरुप हे बदलत असते. बंजारा बोली भाषेचेही यामुळे स्वरुप बदललेले पहावयास मिळते. बंजारा बोली भाषेचा प्रमाण मराठी भाषेशी काही मुदयांच्या आधारे फरक दाखविण्याचा प्रयत्न केलेला आहे तो पुढिलप्रमाणे-

➢ **औपचारिक व अनौपचारिक**: समाजात औपचारिक भाषा आणि अनौपचारिक भाषा असाही भेद जाणवतो. महाराष्ट्रातल्या सर्वच स्तरातल्या लोकांना समजेल अशी, संपर्क साधता येईल अशी समाजव्यवहार आणि शासनव्यवहार चालविता येईल अशी एक भाषा निश्चित केली आहे ती म्हणजे प्रमाण मराठी. महाराष्ट्रातील सर्व भाषकांना समजेल अशी सर्वांनी स्वीकारलेली भाषा मराठी ही प्रमाणभाषा म्हणून ओळखली जाते. ही प्रमाणभाषा साहित्य, कायदा, शास्त्र अशा क्षेत्रात वापरली जाते. म्हणूनच ती समाजातील कोणत्याही गटाला कळते. जेव्हा समाजातील काही घटक प्रमाणभाषेपेक्षा वेगळी आणि सार्वजनिक क्षेत्राशिवाय इतर ठिकाणी जी भाषा अनौपचारिक पध्दतीने बोलतात त्या भाषेला **बोलीभाषा** असे म्हणतात. महाराष्ट्रातील बंजारा समाज हा मराठी या प्रमाण भाषेचा फक्त शिक्षण, शासनव्यवहार आणि इतर समाजाशी जेव्हा व्यवहार करतो तेव्हाच मराठीचा वापर करतो एरव्ही तो बंजारा बोलीतून संज्ञापन करताना दिसतो. खाजगी पत्रव्यवहार असो वा सामाजिक व्यवहार (पंचायत) बंजारा समाजाचे लोक बंजारा बोलीतून प्राध्यान्याने बंजारा (लभाणी) बोलीचा वापर करतात.

➢ **भू-प्रदेश** : प्रमाणभाषा मराठी आणि बंजारा बोली भाषा यांच्यात हा जो फरक आहे, तो मूलभूत स्वरुपाचा आहे. याचे कारण प्रमाण भाषा मराठी संपूर्ण महाराष्ट्रातील प्रदेशात पसरलेली आहे. मोठा भू- भाग मराठीने व्यापलेला आहे. महाराष्ट्रातील शासन व्यवहारात, प्रसारमाध्यमात किंबहुना साहित्यादी क्षेत्रात मराठीचाच उपयोग केला जातो. महाराष्ट्राचा विचार केला तर प्रमाणभाषा मराठीच्या तुलनेने बंजारा बोली भाषेचा भू - प्रदेश हा मर्यादित स्वरुपाचा आहे. विदर्भातील बंजारा बोली, खानदेशातील बंजारा बोली, मराठवाड्यातील बंजारा बोली.प्रमाणभाषा मराठी ही आकलन क्षमतेच्या दृष्टीने इतर सर्व भाषिकांसाठी समृध्द असते.प्रगल्भ असते. म्हणजे मराठी भाषा समजणारे लोक बहुसंख्य आहेत.म्हणजे प्रमाण मराठी ही नागपूरच्या लोकांना, कोकणी लोकांना किंवा कोल्हापूरच्या लोकांना समजते. म्हणजे त्या प्रदेशातील कुठलाही माणूस सहज समजून घेऊ शकतो. परतुं बंजारा बोली भाषेत मात्र असे घडत नाही. उदा. बंजारा बोली भाषा खान्देशातील अहिराणी भाषकांना समजेलच असे नाही. बंजारा बोली भाषा ही कोकणातील कोकणी भाषकांना समजेलच असे नाही. म्हणून प्रमाणभाषा मराठी आकलनक्षमतेच्या दृष्टीने बंजारा बोली पेक्षा व्यापक आहे. आणि बजारा बोलीभाषेची आकलन क्षमता प्रमाण मराठीच्या मानाने कमी आहे.

➢ **लोकसंख्या**: महाराष्ट्राचा विचार केला तर प्रमाणभाषा मराठी बोलणाऱ्याचा लोकसंख्येच्या दृष्टीने विचार केला तर प्रमाणभाषा मराठी जाणणारे लोक संख्येने जास्त आहेत. आणि महाराष्ट्रात चहुकडे विखुरलेले आहेत. बंजारा बोली भाषा बोलणारे लोक संख्येने कमी आणि विशिष्ट ठिकाणीच आहेत. उदा. प्रमाण मराठी जाणणारे जवळपास १० कोटीच्या वर बोलणारे आहेत. तर त्यामानाने बंजारा बोली बोलणारे लोक सुमारे एक कोटी आहेत. म्हणजे प्रमाण मराठी बोलणाऱ्यापेंक्षा हे प्रमाण कमीच आहेत. याउलट संपूर्ण भारताचा विचार केला तर बंजारा बोली

बोलणाऱ्याची संख्या ही मराठी भाषा बोलणाऱ्यांपेक्षा जास्त भरते. मात्र प्रत्येक राज्यातील बंजारा बोली बोलणाऱ्याची प्रमाण भाषा ही त्या त्या राज्याची राज्यभाषा असल्याकारणाने प्रमाणतेच्या निकषावर आणि महाराष्ट्रापुरताच विचार केला तर बंजारा बोली बोलणाऱ्याचे प्रमाण हे मराठीपेक्षा कमी आहे.

➢ **शब्दसंख्या** : शब्दसंख्येच्या विचार महाराष्ट्रापुरता केला तर प्रमाण मराठी भाषेची शब्दसंख्या ही बंजारा बोली भाषेपेक्षा जास्त आहे. विशेषत: विविध क्षेत्रांशी संबंधित जास्त आहे. मराठीत दीड लाखापेक्षा जास्त शब्द नोंदविले गेले आहेत. तर बंजारा बोलीमध्ये ही संख्या त्यामानाने कमी आहे. पण देशपातळीवर विचार केला तर बंजारा बोलीतील शब्दसंख्या जास्त भरेल. बंजारा बोलीतील शब्दांचा असा देशपातळीवर अभ्यास झालेला नसला तरी आर्य भारतीय भाषाकुळातील राजस्थानी, गुजराती, निमाडी, मालवी, हिंदी अशा भाषेतील शब्दसाधर्म्य लक्षात घेता बंजारा बोलीतील शब्दसंख्या ही नक्कीच दोन लाखावर सांगता येईल. प्रमाण मराठी भाषेत नव्या नव्या बोलीभाषा निर्माण करण्याची शक्ती आहे. शिवाय नवे नवे शब्द रुढ करण्याचे सामर्थ्य आहे.
महाराष्ट्रापुरता विचार केला तर बंजारा बोली भाषेत त्यामानाने हे सामर्थ्य कमी आहे.

➢ **लिपी** : प्रमाणभाषा ही लिपीबध्द असते. म्हणजे प्रत्येक प्रमाणभाषा ही स्वत:ची एक लिपी, लिहिण्याची एक पध्दत किंवा चिन्हव्यवस्था निर्माण करीत असते. त्यामुळे राज्यकारभार, शासनव्यवहार, साहित्यनिर्मिती,ज्ञानविज्ञान, तंत्रज्ञान आदी गोष्टी साध्य करता येतात. सर्वांपर्यंत पोहचविता येतात. म्हणून प्रमाणभाषा ही नियमबध्द परिवर्तनशील असते. तर बोली भाषेला लिपी आढळत नाही. ती परंपरेने चालत आलेली आणि विशिष्ट गटात वावरणारी असते. तसेच ती नवनिर्मित तंत्रज्ञानाच्या क्षेत्रात ती अवतरत नाही. लवचिकता अधिक असल्यामुळे वेगवेगळया पध्दतीने तिचे उच्चारण केले जाते. महाराष्ट्राचा विचार करता असे दिसते की मराठी ही प्रमाण राज्य भाषा असून बंजारा (लभाणी) ही बोली आहे. मराठीला लिपी असून बंजारा बोलीची स्वतंत्र लिपी नाही. लेखन करतांना देवनागरी लिपीचाच आधार बंजारा बोलीला घ्यावा लागतो. शिवाय मराठी ही शासनाची, शिक्षणाची, न्यायालयाची, प्रशासनाची भाषा आहे.
बंजारा बोली मात्र फक्त बंजारा समाजच वापरतो. तांड्याच्या व्यवस्थेपुरतीच ती मर्यादित होते. संपूर्ण भारताचा विचार केला तर बंजारा बोली बोलणाऱ्याची संख्या १२ कोटीच्या वर आहे. मात्र प्रत्येक राज्यातील भाषा त्यांनी प्रमाण मानल्यामुळे बंजारा बोलीची स्वतंत्र लिपी निर्माण झालेली नाही. राजस्थानमधील बंजारा राजस्थानी भाषेला प्रमाण मानतो तर गुजरात मधील बंजारा गुजरातीला प्रमाण मानतो. कर्नाटकातील बंजारा कानडीला प्रमाण मानतो. तर तामिळनाडूमधील बंजारा तमिळ भाषेला प्रमाण मानतो. वेगवेगळया राज्यात विभागलेला बंजारा बोली भाषिक असल्याकारणाने बंजारा बोलीला स्वतंत्र लिपी निर्माण करता आलेली नाही. शिवाय साहित्यही इतर भाषेच्या आधारावरच लिहावे लागत आहे. काही प्रमाणात बंजारा बोलीमध्ये साहित्य निर्माण होत आहे. मात्र यासाठी तो देवनागरी लिपीचाच वापर करताना दिसत आहे.
सिंधू संस्कृतीचा शोध लागल्यानंतर तिथे मिळालेल्या अवशेषावरुन बंजारा संस्कृती व सिंधू संस्कृती यामध्ये साम्य आढळते.प्राचीन काळात या संस्कृती एकच असतील तर बंजारा बोलीला लिपी सुध्दा असू शकते. कारण सिंधू संस्कृतीत लिपीसंदर्भात ३९६ अक्षरांचे चिन्ह आणि २५०० रेखाचित्र मिळालेले आहेत. यावरुन सिंधू संस्कृतीच्या काळात एक स्वतंत्र लिपी अस्तित्वात होती. यांचा अर्थ लिपी विचारवंतांना शोधता आलेला नाही. पण ज्या दिवशी याचा अर्थ शोधून काढण्यात यश मिळेल त्या दिवशी बंजारा बोलीची लिपी असल्याचेही सिध्द होवू शकते. याला पुरावा सादडी येथील गोर वंशाचा जो शिलालेख मिळालेला आहे. त्या लेखातील लिपी आणि सिंधू संस्कृतितील लिपी यात साधर्म्य आहे. (संदर्भ-पंडित गौरिशंकर ओझा, ओझा निबंध संग्रह पृष्ठ क्र. ११-३२)

➢ **अर्थसंकेत**: प्रमाण मराठी भाषेत अर्थसंकेत ठरलेले आहेत. मराठी प्रमाणभाषा जेव्हा साहित्यात वापरली जाते. तेव्हा तिच्यात विविध अर्थ किवा अनेक अर्थ प्रकट करण्याचे सामर्थ्य आपल्यापुढे अवतरते. त्यामुळे मराठी भाषेमध्ये सौंदर्यनिर्मिती कारकता आढळते. त्यामुळे मराठी भाषेत मोठया प्रमाणात साहित्य निर्मिती झालेली असून अजूनही साहित्य निर्मिती होत आहे. म्हणजे नवनिर्मिती करण्याची क्षमता प्रमाण मराठीमध्ये बोलीपेक्षा जास्त आहे. बंजारा बोली

भाषेत असे विविध अर्थसंकेत निर्माण करण्याची क्षमता असली तरी प्रमाण मराठीच्या मानाने साहित्यनिर्मिती झालेली नाही. अलिकडे काही प्रमाणात साहित्य लिखाण होत असले तरी जी प्रगल्भता आज मराठीमध्ये निर्माण झाली आहे तिला इतिहास आहे. आज बाराव्या शतकापासून घडत घडत तिला आजची अवस्था प्राप्त झाली आहे. प्रमाण मराठी भाषेप्रमाणे बंजारा बोली भाषेतील साहित्यात प्रतिमा, प्रतिके, अनेकार्थता या गोष्टी आढळत असल्यातरी जी प्रगल्भता पाहिजे ती आढळत नाही. कारण बंजारा बोली ही बंजारा समाजातील प्रत्यक्ष व्यवहारातील निजभाषा आहे, बोली भाषा आहे. तिला साहित्याची भाषा बनायला काही काळ संघर्ष करावा लागणार आहे. अलिकडील बंजारा बोलीतील साहित्य निर्मिती पाहता इतर बोली भाषेपेक्षा बंजारा बोली भाषेची प्रगती वाखाणण्याजोगी आहे. शिवाय बंजारा बोली बोलणारा भाषक मोठया प्रमाणात असून विविध राज्यात विभागलेल्या अवस्थेत आहे. एकत्र आणण्याचे किंवा एकत्र गुंफण्याचे काम ही बोलीभाषाच करु शकते.

➢ **उपबोली निर्माण करण्याची क्षमता:** प्रमाण मराठी भाषेला लिखित स्वरुप किंवा साहित्याचे स्वरुप हे बाराव्या शतकात प्राप्त झाले. त्याअगोदर मराठी लिपीच्या स्वरुपात शिलालेख, ताम्रपट, पोथ्यांमध्ये प्रमाण सापडत असले तरी त्यावेळेस तिचे स्वरुप बोलीप्रमाणेच होते. ज्ञानेश्वरांनी म्हटलेच होते - " बोली अरुपाचे रूप दावीन .....' परतुं पुढे ते विकसित होऊन संपूर्ण महाराष्ट्राचे क्षेत्र व्यापून टाकले. महाराष्ट्रातील संपूर्ण जनतेने तिचा स्वीकार केला. शासनही तिला वापरावयाला लागले. साहित्यिकांनी मराठी भाषा हे लेखनाचे माध्यम बनविले. तंत्रज्ञान आणि व्यापारी यांनी सुध्दा मराठी भाषेचा स्वीकार केला. तेव्हा आत्ताशी ती प्रमाण भाषेच्या पदावर पोहचण्यात यशस्वी झालेली आहे. आज प्रमाण मराठीच्या अनेक बोली आहेत. त्यात खानदेशातील अहिराणी, विदर्भातील वैदर्भी, डांग प्रदेशातील डांगी, कोकणातील कोकणी या बोली मराठीच्याच बोली आहेत. यातही आज साहित्य निर्मिती होते.या बोलीचे प्रमाणात अभ्यास होत आहेत. मात्र संपूर्ण राज्याची व्यवहाराची, प्रशासनाची, कायद्याची, न्यायालयाची, कार्यालयाची भाषा ही मराठीच आहे. मात्र मराठीच्याही अनेक बोली आहेत. तसेच बंजारा ही बोलीभाषा आहे. मात्र तिच्यात आज साहित्यनिर्मितीही होत आहे. प्रदेशानुसार या बोलीचेसुध्दा आपल्याला प्रकार पाडता येतील. आजही प्रत्येक राज्यात बंजारा बोलीत थोडाफार फरक जाणवतो. एकसारखी जाणवत नाही याचे कारण तेथील जीवन जगण्याची पध्दत, काम करण्याची पध्दत, व्यवसाय, प्रमाण भाषा, शेजार भाषा, राष्ट्रभाषा, शिक्षणाची भाषा, व्यवहाराची भाषा असे अनेक घटक प्रभाव पाडत असतात.

एक गोष्ट ठामपणाने सांगता येईल की बंजारा भाषेचेही अनेक उपबोली आपल्याला अधिक अभ्यासाअंती सिध्द करता येतील.उदा. हेडावू बोली, खानदेशातील बंजारा बोली, मराठवाड्यातील बंजारा बोली, विदर्भातील बंजारा बोली असे अनेक प्रकार पडतात. बंजारा (लभाण) बोलीमध्ये उपबोली निर्माण करण्याची क्षमता आहे. बंजारा बोलीची अवस्था बाराव्या शतकातली मराठीची जशी होती तशी आहे. ज्ञानेश्वरी सारखे प्रगल्भ साहित्य निर्माण झाले नसले तरी काही प्रमाणात साहित्य निर्माण होत आहे. वीरा राठोड सारखे साहित्य अकादेमी पुरस्कृत साहित्यिक बंजारा भाषेत साहित्य लिहित आहेत. त्यांच्या "पिढी घडायेरी वाते' या काव्यसंग्रहात बंजारा व मराठी असे द्वैभाषिक काव्य अवतरले आहे.

➢ **गरज :** प्रमाण मराठी भाषा व बंजारा बोली या दोघींना ध्वनीची गरज असते. म्हणजे ध्वनीशिवाय दोघीनांही अभिव्यक्त होता येणार नाही. तसेच प्राप्त झालेल्या ध्वनींना संकेताचीही आवश्यकता असते. प्रमाण मराठी आणि बंजारा बोली दोन्ही भाषांना संकेत निर्मिती आणि संकेत निश्चितीची आवश्यकता असते. आकलन क्षमता प्रमाण मराठी आणि बंजारा बोली या दोन्ही भाषांसाठी महत्त्वाची ठरते. भूप्रदेश, लोकसंख्या आणि आर्थिक घटक या गोष्टी दोन्ही भाषेला अपरिहार्य आहेत. **भूप्रदेशाचा विचार** करता बंजारा बोली ही भारतातील अनेक राज्यात आजही बोलली जाते. **लोकसंख्येचा** विचार करता बंजारा बोली बोलणारा वर्ग संपूर्ण भारतात कोट्यावधीच्या संख्येत आहे. भारताची लोकसंख्या ज्या प्रमाणात वाढते आहे ते प्रमाण लक्षात घेता २०११ च्या जनगणनेनुसार सुमारे १० कोटीच्या वर बंजारा भाषकांची संख्या भरेल. यात वाढच दिसेल कमी नाही. कारण बंजारा समाजात शिक्षणाचे प्रमाण कमी

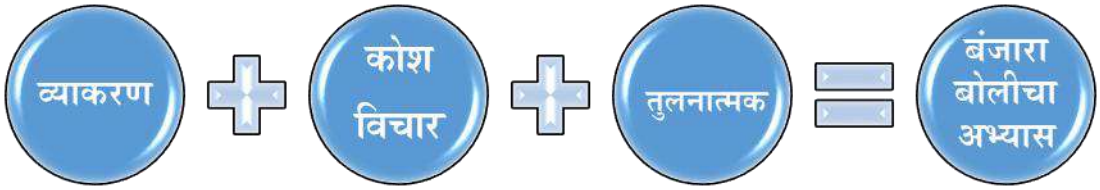
असल्याकारणाने आणि कुटुंब नियोजन या बाबतीत जागृती कमी असल्याने ही संख्या अधिकच भरणार आहे. २०११ ची जातीनुसार लोकसंख्येचा जेव्हा सरकार जाहीर करेल त्यावेळी मात्र बंजारा बोली बोलणाऱ्या वर्गाची संख्या निश्चित होईल. **अर्थ** या घटकाच्या अनुषंगाने विचार केला तर सध्या या वर्गातील बहुसंख्य वर्गाची स्थिती ही फक्त उदरनिर्वाहापुरतीच आहे. त्यामुळे काळानुसार यात बदल होईल असा विचार करायला काही हरकत नाही .कारण कर्नाटक सारखे अनेक राज्य या वर्गाला एस.सी, एस.टी वर्गात सामावून यांचे जीवनमान अधिकाधिक कसे उंचावता येईल यासाठी प्रयत्नरत आहे. महाराष्ट्रातही बंजारा बोली बोलणारा वर्ग एक वेगळा प्रवर्ग एन.टी तयार करुन त्याला शिक्षण, नोकरी यात सामावून घेण्याचा प्रयत्न आहे. बोलीला भविष्याच्या दृष्टीने ज्या गोष्टींची गरज असते त्या बंजारा बोलीला पोषक असून बंजारा बोली ही साहित्याची भाषा बनू पाहत आहे. म्हणजे तिचा प्रवास पिजीन कडून क्रिऑलकडे होत आहे.

➢ **दृष्टिकोन :** प्रमाण मराठी भाषा आणि बंजारा बोली या दोन्ही भाषेकडे पाहण्याचा बंजारा समाजाचा दृष्टिकोन कसा आहे. हा विषय समाजभाषाविज्ञानाचा अभ्यासाचा विषय आहे. प्रमाण भाषा आणि बोली भाषा एकाच काळात एकाच प्रदेशात अस्तित्वात येतात. त्याप्रमाणे मराठी भाषा आणि बंजारा बोली एकाच काळात बोलणारा वर्ग समाजात आहे. पण या दोन्ही भाषेकडे पाहण्याचा दृष्टिकोन मात्र वेगवेगळा आहे. प्रमाण मराठी ही राज्यकारभाराची, शासनव्यवहाराची, साहित्यिकांची भाषा आहे. ती बोलणारे उच्च वर्गीय, श्रेष्ठ असे समजले जात असल्याकारणाने बंजारा भाषिकही इतर समाजातील लोकांशी बोलतांना मराठी भाषेचा आधार घेत असतो. कारण त्याला सतत असे वाटत असते की माझ्या बोलीतून बोलल्यास मला कनिष्ठ समजले जाईल. तसे पाहिले तर भाषा ही कधीही श्रेष्ठ वा कनिष्ठ नसते. प्रमाण भाषा मराठी ही शुध्द आहे. आणि बंजारा बोली ही अशुध्द अशी मानसिकता असल्याकारणाने मराठी भाषा जास्त बोलण्यावर सुशिक्षितांचा भर असतो. तिसरा गैरसमज असा आहे की प्रमाण भाषा ही सभ्य असते. आणि बोली ही असभ्य, मागासलेल्या लोकांची असते. त्यामुळे
बंजारा समाजातील लोकांची मराठी बोलण्यावर जास्त भिस्त दिसते.

वास्तविक पाहता मराठी भाषा आणि बंजारा बोली भाषा यांच्यात परस्पर विरोधी वा शत्रूत्वाचे नाते कधीही नव्हते. याउलट बोलीभाषा ह्या जिवंत, प्रवाही, गतिशील, चैतन्यमय, परंपराप्रिय (वारसा जतन करणाऱ्या) असतात. शिवाय कोणतीही प्रमाणभाषा ही बोलीच असते. कालांतराने तिच्यात भर पडत ती या पदापर्यंत पोहचते. बोली भाषा ह्या प्रमाण भाषेला नेहमी आधार देणाऱ्याच असतात. बंजारा बोली भाषा ही सुध्दा जितकी समृध्द होईल तितकीच प्रमाण मराठीसुध्दा समृध्द बनेल. जसे अनेक छोट्या नद्यांचा प्रवाह एकत्र आला की नदी ही मोठी, समृध्द आणि प्रवाही बनते तसेच अनेक बोली समृध्द झाल्या की प्रमाण मराठी ही सुध्दा अधिकाधिक समृध्द होत जाईल. भाषावैज्ञानिकांचा हा विचार असल्यामुळे लोकांचा बोलीकडे पाहण्याचा हा पारंपरिक दृष्टिकोन चुकीचा आहे. डॉ. रमेश धोंगडे यांच्यामते - "जी बोली प्रतिष्ठा मिळविते ती प्रमाण बोली होते. प्रमाण बोलीलाच भाषा म्हणतात." [9].

➢ **बोली भाषा अभ्यास व बंजारा बोली :** अलिकडे जगातील अनेक बोली नष्ट होत असल्याची जाणीव भाषा अभ्यासकांना झाल्यामुळे ती बोली नष्ट होण्याच्याअगोदर तिचे अवशेष शिल्लक रहावे म्हणून तिची व्याकरण, तिचे ध्वनीरुप व शब्दरुप जतन करण्याचा प्रयत्न सुरु केला. जगात आज अनेक बोली आहेत. भारत हा तर भाषेच्या बाबतीत संपन्न असा देश आहे. येथे शेकडोंनी बोली बोलल्या जातात. या बोलींचाही प्रदेशानुसार, काळानुसार भेद जाणवतो. बोलीचा अभ्यास अनेक अगांनी करता येतो त्यापैकी बोलीचा व्याकरणाच्या अंगाने अभ्यास केला जाऊ शकतो, बोलीचा दुसऱ्या भाषेशी मग ती प्रमाण असो वा बोली यांचा तुलनात्मक अभ्यास केला जाऊ शकतो. तसेच बोलींचा कोशही तयार करता येऊ शकतो. बंजारा बोलीचा या अनुषंगाने विचार केल्यास बंजारा बोलीला कायमस्वरुपी लिखित स्वरुप दिले जाऊ शकते. काळानुसार होणारे बदल नंतर लक्षात येऊ शकतात. डॉ. रमेश धोंगडे यांच्यामते -"एखादी बोली प्रमाण कशी बनते ? (अ) नैसर्गिकरित्या किंवा परंपरेने (ब) तिच्या विकासाचे सहेतूक प्रयत्न करुन- म्हणजे कोश, व्याकरण व शुध्द लेखन नियम करुन (क) विविध क्षेत्रात तिचा वापर करुन (ड)

शासनाची अधिकृत मान्यता मिळवून (इ) विविध बोलींचे मिश्रण करुन एक बोली कृत्रिमपणे तयार करुन (ई) कुणाचीच बोली नसलेली अशी एखादी बोली स्वीकारुन. मराठी, हिंदी, इंग्रजी बाबत त्यांना प्रमाण भाषा म्हणण्यास ही कारणे पुरेशी आहेत.''[10]. या विधानाचा आधार घेऊन बंजारा बोलीच्या विकासासाठी सहेतूक प्रयत्न करण्याचा विचार केला तर बंजारा बोलीला प्रतिष्ठा तर मिळेलच शिवाय बोलीकडे पाहण्याचा दृष्टिकोनही बदलेल.



➢ **बंजारा बोलीचा व्याकरणाच्या अनुषंगाने विचार** : व्याकरण म्हणजे भाषेतील नियमांचा संग्रह. "व्याकरण म्हणजे त्या भाषेचे स्वरुप स्पष्ट करणारा एक कृत्रिम आराखडा असतो. व्याकरण तयार करण्यासाठी त्या त्या बोलीची सामग्री संकलित करावी लागते. आणि मिळालेल्या सामग्रीचे व्यवस्थापन करुन, विश्लेषण करुन ध्वनीविचार, शब्दविचार, वाक्यविचार इत्यादी स्तरावर जाऊन नियम शोधावे लागतात... "[११]. बंजारा बोलीचे व्याकरणिक वर्णन पहिल्या विभागात केले आहे. बंजारा बोलीचा स्वनिमविचार, रुपिमविचार, शब्दविचार, शब्दबंध व उपवाक्यविचार, वाक्यविचार व अर्थविचार या वर्णनात्मक पातळीवर बारकाईने अभ्यास केलेला आहे. हा अभ्यास मात्र बंजारा बोलीचा आंतरिक अभ्यास होय. सामाजिक भाषाविज्ञान हे भाषेचा बाह्य अंगाचा व त्याच्या वापराचा अभ्यास करते. अशा प्रकारच्या अभ्यासाने बंजारा बोलीला जिवंतपणा येणार का ? याची शाश्वती देता येणार नाही. कारण तिची प्रादेशिकता आणि प्रमाण बोलीपेक्षा वेगळेपण यामुळे अनेक गोष्टींवर व्याकरण प्रकाश टाकू शकत नाही. तौलनिक अभ्यासातून किंवा सामाजिक अंगाने केलेल्या अभ्यासातून बंजारा बोलीवर जे प्रकाश टाकू शकतो तेवढा प्रकाश व्याकरणाच्या अभ्यासातून टाकता येणार नाही. कारण व्याकरणिक अभ्यास हा स्थिर मानला जातो. तो एककेंद्री अभ्यास असतो.

➢ **बंजारा बोलीचा कोश रचनेच्या दृष्टीने विचार** : कोश आणि व्याकरण यांच्यामध्ये फरक सांगतांना डॉ. कल्याण काळे म्हणतात - "व्याकरणात सर्व नियमितअसणाऱ्या भाषा घटकांचा समावेश असतो. तर कोशात याच्या उलट सर्व अनियमित भाषाघटकांचा संग्रह असतो. भाषा ही प्रतिक व्यवस्था आहे. त्यामुळे प्रतिक आणि त्याचा अर्थ यांचे संबंध पूर्णपणे यादृच्छिक असतात. त्या संबंधाचे नियम बांधता येत नाहीत. भाषेतील सर्वात जास्त अनियमित क्षेत्र हेच असते. म्हणून कोशात शब्द आणि त्यांचे अर्थ यांचा संग्रह हेच कोशाचे मुख्य स्वरुप आहे."[१२]. भाषाव्यवहारातील एकूण एक शब्द जोपर्यंत कोशविचारात येत नाही तोपर्यंत कोशविचार अपूर्ण असल्याची जाणीव होते. त्यामुळे बंजारा बोलीचा कोशरचनेच्या दृष्टीने विचार करावयाच्या झाल्यास आपल्याला जास्तीत जास्त लोकांच्या भाषाव्यवहारातून सामग्री मिळवावी लागेल. कोशात मात्र शब्दांच्या मूळ रुपाचाच सामावेश होतो. त्या शब्दांचे विकार, त्यांच्या साहाय्याने बनणाऱ्या मोठया व्याकरणिक रचना यांचा सामावेश कोश रचनेत होत नाही. हे एक मोठे क्षेत्र आहे.

➢ **बंजारा बोलीचा तौलनिक अभ्यास** : हा अभ्यास फक्त एका बोलीपुरताच मर्यादित राहतो. पण तौलनिक अभ्यासात मात्र मूळ भाषेच्या सर्वच प्रादेशिक बोलींचा विचार करावा लागतो. वास्तविक पाहता याही अभ्यासाची सामग्री संपूर्ण भाषाव्यवहारातूनच करावी लागते. या अभ्यासात ती बोली जेथे बोलली जात असेल तेथे प्रत्यक्षात जाऊन, तेथील व्यक्तींची मुलाखती घेऊन पुरावा मिळविला जातो. सगळ्या बोलींची समग्र माहिती मिळवून त्याच्या समग्र घटकांशी तुलना करणे अशक्य असल्यामुळे भाषाघटकांची संख्या मर्यादित व आटोपशीर करुन घ्यावी लागते. घटकांची संख्या कमी केल्याची कसर जास्तीत जास्त मुलाखतीच्या द्वारे भरुन काढणे शक्य आहे. आतापर्यंत हा

अभ्यास ध्वनिव्यवस्था व शब्दसंग्रह यापुरताच झालेला आहे. पण व्याकरण, अर्थ यांचाही विचार यात वर्ज्य नाही. अलिकडे सर्व बोलींची व्याकरण व्यवस्था मांडणीची संकल्पना भाषाविज्ञानात केली जात आहे. अनेक बोलींचा हा तौलनिक अभ्यास भाषेच्या प्रादेशिक व भौगोलिक परिवर्तनाचा शोध घेण्यासाठी केला जातो. बंजारा बोलीचा महाराष्ट्रातील अशा अनेक बोलींशी तुलना करणे शक्य आहे. त्यात **अहिराणी व बंजारा बोली, मराठवाडी व बंजारा बोली, वैदर्भी व बंजारा बोली, कोकणा व बंजारा बोली** अशा पध्दतीने तौलनिक अभ्यास करता येऊ शकतो. मात्र हा अभ्यासाचा एक वेगळा स्वतंत्र व्यापक विभाग होवू शकतो. अशी एक दिशा अखेरच्या प्रकरणात निर्देशित केली आहे.

➢ **बोली भूगोल** : **प्रादेशिक** बोलींमधील भेदांचा अभ्यास करणाऱ्या विद्याशाखेस **बोली भूगोल** असे म्हणतात. त्यालाच भाषिक भूगोल असेही म्हणतात. इंगजीत त्यासाठी **Dialect Geography** हा एकच शब्दप्रयोग केला जातो. पण हा अभ्यास केवळ बोली भेंदापुरताच मर्यादित नाही. एकाच भाषेपासून निर्माण झालेल्या भाषाभेदांच्या अभ्यासाचाही त्यात समावेश होतो."[14]·भाषा आणि बोली हे दोन्ही शब्द समानार्थी असले तरी भाषाविज्ञानात Language आणि Dialect या दोन शब्दात भेद केला जातो. Dialect ला पोटभाषा असेही म्हणतात.

समारोप :

बंजारा बोली ही प्राचीन काळापासून बोलली जाते. ऐतिहासिकता हा तिचा विशेष आहे. सुमारे सहाव्या, सातव्या शतकाच्या आसपास गोरवंशीयांचे राज्य असल्याचे मानले जाते.भारतातील बहुतांशी राज्यात बंजारा बोलीचे उपयोजन करणारे बंजारा समाजगट आहेत. ते परस्परांशी बंजारा बोलीत संवाद साधतात. तसेच जिवंतपणा हा एक विशेष बंजारा बोलीचा आहे. बंजारा बोलीला स्वतंत्र लिपी नाही. लेखनासाठी देवनागरी लिपी वापरली जाते. सामान्यत: लेखनव्यवहार व वाङ्मय निर्मितीसाठी देवनागरी लिपी वापरली जाते.भारतामधील प्रत्येक राज्यात बंजारा हा वेगवेगळया प्रवर्गात बंजारा बोली भाषेमुळे आपली संस्कृती, वेशभूषा, केशभूषा, अलंकार, विधी, परंपरा यांची जपवणूक बंजारा बोलीतून केली जाते. महाराष्ट्रात मराठीच्या तुलनेने बंजारा बोलीभाषक संख्येने कमी आहेत. मात्र इतर राज्याच्या प्रमाण भाषांशी तुलना केल्यास तेथे बंजारा बोली भाषकांचे प्रमाण आधिक आहे. बंजारा बोलीमध्ये उपबोली निर्माण करण्याची क्षमता आहे. बंजारा बोलीचा उपबोलीच्या दृष्टीने महाराष्ट्रापुरता विचार केला तरी प्रदेशानुसार विदर्भातील बंजारा बोली, मराठवाड्यातील बंजारा बोली, खानदेशातील बंजारा बोली, हिंदी प्रदेशालगतची हेडाऊ बोली असे प्रकार पडतात. व्यवसायाच्या अनुषंगाने बंजारा बोलीचे प्रकार पाडले तर ऊस तोड कामगारांची बंजारा बोली, पशुपालन करणाऱ्यांची बंजारा बोली, शेतकरी बंजाराची बोली, बांधकाम बेलदार बंजाराची बोली असे प्रकार पाडता येतात.जातीच्या अनुषंगानेही बंजारा बोलीचे प्रकार पाडता येतात. उदा. जांगड बंजाराची बोली, सोनार बंजाराची बोली, धाडी बंजाराची बोली, अस्सल बंजाराची बोली, चारण बंजाराची बोली आदी. व्यवसाय व जातीय रचनेनुसार बंजारा बोली उपयोजिल्या जातात.बंजारा बोलीचा आणि महाराष्ट्रातील इतर बोलीचा तौलनिक अभ्यास केला असता असे लक्षात येते की बंजारा बोली व कोकणा बोली, बंजारा बोली व मराठवाडी बोली, बंजारा बोली व वैदर्भी बोली यांच्यात परपस्परसंबंधामुळे भाषिक विनिमयनहोते. सामाजिक - सांस्कृतिक संबंधामुळे, सामाजिक अस्तित्वामुळे या बोलींमध्ये देवघेव होते आहे.बंजारा बोलीचा देशातील इतर बोलीचा साधर्म्य लक्षात घेता राजस्थानी, गुजराती, निमाडी, मालवी या बोलींशी बंजारा बोलीचे साम्य आहे. असे तौलनिक विचार करता त्यांना भाषा भगिनी मानता येईल. महाराष्ट्रात विदर्भात बंजारा भाषकांची विशेषत: यवतमाळ, नांदेड, औरंगाबाद अमरावती याभागात बंजारा बोलणाऱ्यांची संख्या मोठया प्रमाणात आहे. प्रदेशाच्या अनुषंगाने विचार करता बंजारा बोली ही एकसारखी नसून तिच्यात प्रादेशिक भेद आहेत.उदा.मराठवाड्यातील बंजारा बोली, विदर्भातील बंजारा बोली, खानदेशातील बंजारा बोली, हेडाऊ बोली.बंजारा भाषिकातही भाषेच्या अनुषंगाने भेद जाणवतो. उदा. मध्यप्रदेशाच्या सीमालगतच्या भागात राहणाऱ्या बंजारा भाषिकांवर हिंदी भाषेचा प्रभाव स्पष्ट दिसतो. बंजारा लोक व्यापार व फिरस्ते व्यवसाय असल्यामुळे ते गुप्तसंकेत, गूढ बोली, सूचक शब्द, वाक्प्रयोग यांचा वापर करतात.

❖ **संदर्भ** :

१. डॉ. रमेश वरखेडे: सामाजिक भाषाविज्ञान, शब्दालय प्रकाशन, श्रीरामपूर, द्वि.आ.२००१ पृ.क्र. ४५.
२. प्रा. मोतीराज राठोड, 'गोर- बनजारा जन जातीका इतिहास', विदया प्रकाशन, औरगांबाद, २००३, पृष्ठ १८-१९.
३. प्रा. मोतीराज राठोड, 'गोर- बनजारा जन जातीका इतिहास', विदया प्रकाशन औरगांबाद, २००३, पृष्ठ १८-१९.
४. इलियट डावुन्सन अनुवाद डॉ. मथुरालाल शर्मा, 'भारत का इतिहास', पृष्ठ १३१.
५. प्रा. मोतीराज राठोड, 'गोर- बंजारा वंशाचा इतिहास', लतादेवी प्रकाशक, औरंगाबाद, २००५, पृष्ठ ३२.
६. डॉ. रमेश वरखेड: सामाजिक भाषाविज्ञान, शब्दालय प्रकाशन, श्रीरामपूर, द्वि. आ.२००१ पृ.क्र. ४६.
७. डॉ. रमेश वरखेड: सामाजिक भाषाविज्ञान, शब्दालय प्रकाशन, श्रीरामपूर, द्वि. आ.२००१ पृ.क्र. ४६.
८. डॉ. अशोक केळकर रा.**वैखरी** (भाषा आणि भाषाव्यवहार) मॅजेस्टिक प्रकाशन, मुंबई, १९८३,पृ.क्र.७५-७६.
९. डॉ. रमेश धोंगडे: सामाजिक भाषाविज्ञना, दिलीपराज प्रकाशन, प्रा. लि. पुणे, प्र. आ.२००६, पृ.क्र.२७
१०. डॉ. रमेश वरखेडे: सामाजिक भाषाविज्ञान, शब्दालय प्रकाशन, श्रीरामपूर, द्वि.आ.२००१ पृ.क्र. ४५.
११. प्रा. मोतीराज राठोड, 'गोर- बनजारा जन जातीका इतिहास', विदया प्रकाशन, औरगांबाद, २००३, पृष्ठ १८-१९.
१२. प्रा. मोतीराज राठोड, 'गोर- बनजारा जन जातीका इतिहास', विदया प्रकाशन औरगांबाद, २००३, पृष्ठ १८-१९.
१३. इलियट डावुन्सन अनुवाद डॉ. मथुरालाल शर्मा, 'भारत का इतिहास', पृष्ठ १३१.
१४. प्रा. मोतीराज राठोड, 'गोर- बंजारा वंशाचा इतिहास', लतादेवी प्रकाशक, औरंगाबाद, २००५, पृष्ठ ३२.

individuals from all walks of life.

References

Babiarz, K. S., Ma, P., Song, S., & Miller, G. (2019). Population sex imbalance in China before the One-Child Policy. Demographic Research, 40, 319–358. https://www.jstor.org/stable/26727002

Banerjee, M. (1977). The Pattern of Sex Ratios in Singhbhum District, Bihar. Geographical Review of India, 39, pp. 30-38.

Basu, A. M. (1990). Cultural Influences on Health Care Use: Two Regional Groups in India. Studies in Family Planning, 21(5), 275–286. https://doi.org/10.2307/1966507

George, S. M., & Ranbir S. Dahiya. (1998). Female Foeticide in Rural Haryana. Economic and Political Weekly, 33(32), 2191–2198. http://www.jstor.org/stable/4407077

Goodkind, D. (2011). Child Underreporting, Fertility, and Sex Ratio Imbalance in China. Demography, 48(1), 291–316. http://www.jstor.org/stable/41237721

Pai, S. (1987). Class, Gender and Agrarian Change: An Analysis of the Status of Female Agricultural Labour in India. Social Scientist, 15(6), 16–32. https://doi.org/10.2307/3517304

Rajan, S., & Morgan, S. P. (2018). Selective Versus Generalized Gender Bias in Childhood Health and Nutrition: Evidence from India. Population and Development Review, 44(2), 231–255. http://www.jstor.org/stable/26622911

Sen, Amartya. (1990). "More than 100 Million Women are Missing." New York Review of Books 37 (20): 61–66.

Sule, B.M and Barkade, A.J(2012). Correlation between literacy and sex ratio in Solapur district of Maharashtra: A Geographical Analysis, Social Growth, 1(4). P.7

Unisa, S., Sucharita Pujari, & Usha, R. (2007). Sex Selective Abortion in Haryana: Evidence from Pregnancy History and Antenatal Care. Economic and Political Weekly, 42(1), 60–66. http://www.jstor.org/stable/4419111

Zarate, A. O. (1967). Some Factors Associated with Urban-Rural Fertility Differentials in Mexico. Population Studies, 21(3), 283–293. https://doi.org/10.2307/2173147

12

चंद्रमाधवीचे प्रदेश या कवितासंग्रहातील निसर्गप्रतिमांचा वेध

सहा. प्राध्यापक योगेश उगले
के. पी. जी. महाविद्यालय, इगतपुरी जि. नाशिक

प्रास्ताविक

आधुनिक मराठी कवितेत कवी ग्रेस यांनी निर्माण केलेली प्रतिमासृष्टी अनवट आहे. त्यांचा 'चंद्रमाधवीचे प्रदेश' हा असाच प्रतिमासंपन्न कवितासंग्रह. या संग्रहात निसर्गप्रतिमांचा जबरदस्त आवाका बघायला मिळतो. अगदी आत्मनिवेदनाच्या प्रारंभी 'कोसळणारा मुसळधार पाऊस' ते 'चिंचवनात बगळ्यांनी केलेली वसाहत' असा शेवटच्या कवितेपर्यंत निसर्गरूपांचा भरभरून प्रत्यय देणाऱ्या या अभिव्यक्तीचा वेध घेताना वाचकाच्या मनात प्रतीतीचा अद्‌भूत अनुभव आरोपित करण्यात कवी ग्रेस यशस्वी ठरले आहेत. कमी अधिक प्रमाणात समग्र मराठी कवितेला निसर्गप्रतिमांचा सोस आहे, तसाच तो ग्रेसच्या कवितेलाही आहे. परंतु ग्रेसच्या कवितेचे वेगळेपण असे, की ती निसर्गप्रतिमाशरण नाही. या कवितेतला निसर्ग वर्णनाच्या पलीकडे जाऊन अनुभूतीच्या नव्या शक्यता निर्माण करणारा आहे. ग्रेसची कविता या दृष्टीने अनुभूतीप्रधान आहे. साध्या साध्या निसर्गदृश्यांतून अलौकिक प्रतिमा निर्माण करण्याचे आणि वेळोवेळी रसिकाला अचंबित करण्याचे सामर्थ्य या कवितेत असल्याचे जाणवल्यावाचून राहत नाही. एका वेगळ्या अर्थाने ग्रेसच्या कवितेला निसर्गकविताच म्हणावे लागेल. या कवितेचा निसर्ग हा महत्त्वपूर्ण घटक आहेच. त्याच्या आरेखनाची तऱ्हा मात्र नावीन्यपूर्ण आहे. ही नावीन्यपूर्णतासुद्धा नि:संशयपणे या कवितेचे आकर्षण ठरते.

१) निसर्गरूपांना अद्‌भुताचे कोंदण

प्रभाकर पाध्ये म्हणतात — 'तत्त्वज्ञ अगर

वैज्ञानिक जशी संकल्पनांची साधना करतो तशी कलावंत प्रतिमांची (images) करतो.' ग्रेसच्या कवितेतील निसर्गरूपांचे अवलोकन करताना वारंवार जाणवतो तो अद्‌भुताचा अनिवार ओघ. त्यामुळे प्रतिमांचा अर्थविस्तार होतो. आस्वादाच्या निराळ्या शक्यता त्यांच्याठायी निर्माण होऊन त्या अधिकाधिक व्यापक होतात. रसिकाला अर्थघटकांच्या पलीकडे नेणारा अनुभूतींचा अथांग पैस या प्रतिमांतून साकार होतो. चंद्रमाधवीचे प्रदेश या संग्रहातील 'मातृवनातील सावल्या' या कवितेत 'वृक्षांच्या कलत्या छाया पाण्यावर चंद्रखुणांची मी निळीसावळी वेल' अशा साध्या साध्या इंद्रियगम्य प्रतिमांमधूनच अटळपणे 'मी गतजन्मीची भूल' असा अद्‌भूत हुंकार उमटतो. निसर्गस्वभावाचे कवीच्या स्वभावात संश्लेषण होऊन प्रतिमाविस्तार झाल्याचा अनुभव देणाऱ्या या ओळी. 'आंधळ्या पाण्यात गळती शुभ्र पक्ष्यांचे थवे' किंवा 'चंद्रव्याकुळ सावल्यांचा या इथे पडला ढिगारा' किंवा 'प्राण क्षितिजाच्या दिशेने चालले मंदावुनी' अशा ओळी त्यांच्या अंगभूत सामर्थ्याने दृश्यांचे चमत्कृतींत रूपांतर करण्यात यशस्वी ठरतात. शुभ्र पक्ष्यांचे थवे पाण्यात 'गळतात.' इथे गळणे या शब्दाचा अर्थविस्तार झाल्याचे दिसून येईल. 'चंद्रव्याकुळ सावल्या' रसिकाच्या मनात नवाकोरा अनुभव निर्माण करतातय तर प्राणांचे क्षितिजाच्या दिशेने जाणे अमूर्त अनुभवांचे मूर्त रूप आहे. 'चंद्रमाधवीचे प्रदेश' या अस्सल प्रेमकवितेतूनही निसर्गरूपांचे अपार दर्शन झाल्यावाचून राहत नाही. 'चंद्रमाधवीच्या प्रदेशांत झाडांची मग्नमहान निर्मनुष्यता, अभेद्य एकेरी एकांतात वाढणारे फुलांचे संघ, ऐकिवात असलेल्या पोरक्या दंतकथेतून झरणारे चांदणेय जशी लागूच नये, सजूच नये तुझ्या डोळ्यांना मोत्यांची जाळीदार सरणे' अशा प्रचंड प्रतिमासृष्टीतून ही कविता अर्थबोधाचे अगम्य ताण निर्माण करते. अशा तऱ्हेने अनुभवाला साकार करणे, यात नावीन्य आहे. त्याचबरोबर अशा तऱ्हेच्या अनुभवाला सामोरे जाणे, हे सुद्धा रसिकासाठी नवीन आहे. या संग्रहातील अखेरच्या कवितेपर्यंत ही नावीन्यपूर्णता लखखपणे जाणवते. 'संध्याकाळ' या कवितेत 'कधी एकांत रेखावा कधी लोकांताची रीत उभ्या जन्माला न मिळे तुझ्या प्रारब्धाचे गीत' या पहिल्या चरणानंतर 'तूच डोंगर पेरावे तूच नाचवावी झाडे असा आकांताचा जन्म तूच द्यावा चंद्राकडे...' अशी निसर्गप्रतिमांची उधळण आणि त्यानंतरही 'मला भावते साजणी फक्त अशी संध्याकाळ' असे प्रतिमालिंपण बघितले की वाटते ही कविता निसर्गधर्मी आहे. फक्त हा निसर्ग साकार होतो तो कवीच्या स्वभावकोंदणात. 'निळाई' ही संपूर्ण कविता निसर्गप्रतिमाप्रधान आहे. या कवितेच्या ओळीओळीतून सौंदऱ्याचा असा काही अभिनव आविष्कार झाला आहे की त्याची अढळ भूल रसिकाच्या ठायी एखाद्या शिल्पाप्रमाणे कोरली जाते. निळा रंग हे अलौकिकाचे प्रतीक. या कवितेतील प्रत्येक प्रतिमा निळाईत (पऱ्यायाने अलौकिकात) मिसळून गेलेली आहे. निळे ऊन, निळे घाटमाथे, निळी राऊळे, निळ्याशार पाऊलवाटा, निळी भूल, निळा अस्तकाल, निळेगार वारे, निळी चंद्रओवी, निळी पाखरे आणि त्यांची निळी पाउले, निळे सूर, निळी गीतशाळा, निळे चांदणे, निळे चंदन, निळी पालखी, निळी तोरणे अशी इत्थंभूत निळाईत ही कविता सजलेली, नटलेली आहे. या कवितेसाठी निवडलेली सुमंदारमाला ही वृत्तलय स्वभावत:च सौंदऱ्याविष्कारासाठी सुयोग्य आहे. एकाचवेळी निळ्याशार प्रतिमांचा असा अनिवार ओथंब आणि संवेदनांचा आरपार ठाव घेणारी कवितेची अनवट लय अलौकिक भारावलेपण घेऊनच प्रकटल्याचे जाणवते.

२) प्रतिमांतर्भूत संगतींचे विभ्रम

चंद्रमाधवीचे प्रदेश या संग्रहातल्या कवितां मधील प्रतिमासृष्टीत अंतर्भूत असलेल्या अनेक संगती आहेत. दोन विरोधी घटकही वेगळ्याच तऱ्हेने ग्रेसच्या कवितेत एकत्रितपणे प्रकटू शकतात. जुळवणी, सांधणी हे निर्मितीप्रकियेतील अटळ घटक आहेत. या प्रक्रियेतूनच कविता साकार होत असते. म. सु. पाटील म्हणतात — 'असंबद्ध गोष्टींत संबंध जोडून ज्या संगती साधल्या जातात, त्या एका व्यवस्थेचा, काव्यववस्थेचा भाग बनतात.' ग्रेसच्या कवितेतील या संगती विराटाकडे जाणाऱ्या आहेत. 'अनंत शिखरे निळी शिशिरमुग्ध संध्येतली' या ओळीतील प्रतिमासांधणी अवाक करणारी आहे. निळ्या अनंत शिखरांना पार्श्वभूमी आहे ती शिशिरातल्या मुग्ध संध्याकालाची. एरवी शिखरांच्या पार्श्वभूमीवर संध्याकाळ उतरते. पण ग्रेसची प्रतिभा या

निसर्गसंकेतांना आपल्या भूमिकांची अदलाबदल करायला भाग पाडते. या अदलाबदलीतून जी संगती निर्माण झालीय, ती कविता या अर्थाने स्वयंभू आहे. शिशिरातील संध्याकाळाची मुग्धता टिपणारा, तिच्यावर निळ्या शिखरांचे अनंत आरोपण करणारा हा अभिव्यक्तीचा आवाका अत्यंत विलोभनीय आहे. डहाळी या कवितेत 'गगन गहन होई प्रार्थनांच्याप्रमाणे' अशी एक ओळ आहे. गगन आणि प्रार्थना यांना जोडणारे तत्त्व म्हणून गहनत्त्व या ओळीत अवतरले आहे. जे गहन आहे त्यालाही असे सहजपणे दोन घटकांच्या सांधणीत साकारणे, हा प्रतिभेचा श्रेष्ठ आविष्कार ठरावा. प्रार्थनेतील गहनत्त्व गगनावर आरोपित झाले की गगनही प्रार्थनांप्रमाणे गहन होते, ही कवीची अनुभूती आहे. या अनुभूतीची डहाळी रसिकाच्या हाती सोपवून ग्रेसची कविता नव्या अनुभवांना गवसणी घालत राहते. 'कमळाचा मृदु देठ तुटावा तसे सरोवर हलले' या ओळीत सामावलेले अर्थाचे विराट अभ्यंतर स्तिमित करणारे आहे. सरोवर हे व्यापक घटित आहे. त्यामानाने कमळ अतिशय सूक्ष्म. अशा लहानशा कमळाचा लहानसा देठ तुटण्यानेही सरोवरात हालचाल होते, सरोवराचा जीव कासावीस होतो, ही घटना टिपताना अर्थविस्तारासोबतच कितीतरी मोठा प्रतिमाविस्तार झाला आहे. ग्रेसची कविता अशी सूक्ष्माकडून विराटाकडे आणि विराटाकडून सूक्ष्माकडे हेलकावे घेत असते. त्यामुळे सूक्ष्म आणि विराटात संगती निर्माण करणाऱ्या असंख्य प्रतिमा या निर्मितीप्रक्रियेतून जन्माला येतात. अशा संगतींनी या कवितांना नवलाई बहाल केलेली आहे.

३) निसर्गातील चौतन्यतत्त्वाचे दर्शन

या संग्रहातील कविता चौतन्याच्या आविष्कारक आहेत. रसिकाच्या संवेदनानिष्ठ अनुभवांतून त्याच्या मनातील विशुद्ध ऊर्जेला प्रवाहित करणाऱ्या आहेत. त्यांची आविष्कारक तत्त्वे निसर्गप्रधान आहेत. ज्याप्रमाणे निसर्ग हा चौतन्याचा धारक आहे, त्याचप्रमाणे या कवितादेखील चौतन्याचीच अभिव्यक्ती करताना दिसून येतात. कवीच्या स्वभाववृत्तीप्रमाणे या निसर्गप्रतिमाही अनेक घटकांच्या एकत्रीकरणातून आकार घेऊ लागतात. साकार होऊ लागतात. या दृष्टीने 'झाडे' ही कविता अवलोकन करण्याजोगी आहे.

दूरवर पसरलेली झाडे,
महंमदाच्या प्रार्थनांसारखी लांब, प्रदीर्घ
मावळतीच्या रथात बसून,
सूर्य सागर—तीर्थाला निघाला म्हणजे,
दिशांच्या प्रवाहांतून सावल्यांचे कळपच्या कळप
वाहत येतात...
आकाशमार्गातून ओघळणारे पक्ष्यांचे समूह
त्यांच्या शाखांत अधिकच गडद होत जातात,
वनवासातील रामायणासारखे...
बुबुळांखालून स्पष्ट दिसणाऱ्या अंधारात,
त्यांची पाने हलू लागतात, डोलू लागतात,
आणि कित्येकदा त्यांच्या
पानांचा स्पर्श क्षितिजालाही होतो...

या कवितेत दूरवर पसरलेल्या झाडांना दिलेली प्रार्थनांची उपमा किती सार्थ आणि अभिनव आहे. ज्याप्रमाणे झाडे ही निसर्गातील चौतन्याची मूर्त रूपे त्याचप्रमाणे प्रार्थना हेसुद्धा चौतन्याच्या आराधनेचे, आळवणीचे प्रतीक. त्यामुळे अगदी प्रारंभापासूनच या कवितेत चौतन्याचा सुकाळ झालेला आहे. मावळतीच्या रथात बसून सागर—तीर्थाला निघालेला सूर्य कवी साकार करतो. सूर्य हासुद्धा चौतन्यमय घटक. दिशांचे प्रवाह, सावल्यांचे कळप, पक्ष्यांचे समूह, झाडांची हलणारी, डोलणारी पाने या प्रतिमांमध्ये संवेदनागोचर चौतन्याची सळसळ आहे. आणि शेवटी क्षितिजाला होणारा झाडांच्या पानांचा स्पर्श, हे चौतन्यतत्त्वाचे मानवीकरण ठरते. वनवासातील रामायणाचा उल्लेख कवितेला अर्थाचा निराळा घाट बहाल करतो. या कवितेने निर्माण केलेले एवढे विराट दृश्य या एका घटकाने अंतर्बाह्य तोलून धरल्यासारखे वाटते. सबंध कवितेवर झालेला हा खास ग्रेसच्या प्रतिभेचा संस्कार म्हणता येईल. वनवासातील रामायण हे निसर्गाच्या साक्षीने घडलेले घटित आहे. त्यामुळे त्याचा संबंध पक्ष्यांच्या समूहांचे झाडांच्या शाखांत गडद होण्याशी जोडताना रामायण या मूलत: गडद असलेल्या घटनेचा पट डोळ्यांपुढे उभा राहतो. रामायणाचा वनवासातील भाग हा अत्यंत गडद, अनेक अर्थांनी सघन आहे. एका प्रतिमेतून दुसऱ्या विराट प्रतिमेत रसिकाला नकळतपणे नेऊन ठेवण्याचे ग्रेसच्या प्रतिभेचे हे अजब कसब आहे. एकाचवेळी महंमदाच्या प्रदीर्घ

प्रार्थना आणि वनवासातील गडद रामायण एकजीव होऊन ग्रेसच्याच कवितेतून आविष्कृत होऊ शकते. 'ग्रेस आणि दुर्बोधता' या ग्रंथात जयंत परांजपे लिहितात की — ग्रेस ह्यांच्या निसर्गाविषयी प्रथमदर्शनीच जाणवणारी गोष्ट म्हणजे या निसर्गाला प्रादेशिकतेची किनार नाही. तो कुठल्याही भूप्रदेशाला बांधलेला नाही. 'इथे—तिथे'ची त्याला बाधा झालेली नाही. एका अर्थाने तो अतिशय विमुक्त आहे.' विश्वातील चौतन्य असे सर्व ठिकाणी असूनही सर्वांपासून विमुक्त असते. ग्रेसच्या कवितेतील निसर्गचौतन्यही या विमुक्ततेचे दर्शन घडवते.

४) आविष्कृत निसर्गरूपे

काही निसर्गरूपांचा ग्रेसच्या कवितेतून वारंवार आविष्कार होतो. याबद्दल वसंत पाटणकर लिहितात की 'निसर्गाच्या संदर्भात ग्रेस यांच्या कवितेत असे चित्र दिसते की त्यांना निसर्गातील काही गोष्टींचे आकर्षण आहे. त्यांमध्ये त्यांना संध्याकाळचे विलक्षण आकर्षण आहे.' संध्याकाळ हे ग्रेसच्या कवितेचे आंतरिक स्पंदन आहे असे म्हटल्यास वावगे ठरणार नाही. त्यांच्या कुठल्याही कवितेत कुठल्याही ओळीतून अटळपणे संध्याकाळ अवतरू शकते. याबरोबरच इतरही ज्या निसर्गरूपांना ग्रेसने या संग्रहातील कवितांमधून साकार केले आहे त्यांचाही वेध घेणे क्रमप्राप्त ठरते. 'क्षितिजांची ओळ' अशी एक प्रतिमा अवलोकताना जाणवते की कवीने क्षितिजाचे अनेकवचनात रूपांतर केले आहे. माणूस जसजसा क्षितिजाच्या दिशेने धावू लागतो तो तसतसे क्षितिज पुढे पुढेच जात राहते. अशा असंख्य क्षितिजांना ग्रेसने ओळीत उभे केले. आणि क्षितिजांच्या त्या ओळीला आपल्या कवितेतून मिटायलाही भाग पाडले. क्षितिज या मूलतः अथांग असलेल्या निसर्गरूपाला आधी आणखीच अथांग करून पुन्हा त्याला आपल्या अथांगतेसहित मिटायला लावणे ही केवढी ऐसपैस निर्मितीप्रक्रिया आहे. हे वाढ — विस्ताराचे, ऱ्हास — लयाचे ताण अनेक ठिकाणी बघायला मिळतात. ग्रेसच्या कवितेतील निसर्गाची आविष्काररूपे अशी एकाच वेळी दोन टोकांना शिवत असतात. 'लपंडाव' कवितेत 'दिशा पुसटल्या क्षितिजामध्ये आकाशाला अर्थ नवा' या ओळींतील क्षितिजही दिशांचे पुसट होणे, या घटनेला धारण करणारे आहे. दिशांच्या पुसट होण्याने आकाश रिक्त होणे आणि नव्या अर्थाचे आरोपण आकाशावर होणे ही प्रक्रिया सृजनप्रक्रियेशी मेळ खाणारी आहे. ग्रेसच्या कवितेतला निसर्ग हा त्यांचा स्वतंत्र, स्वयंभू निसर्ग आहे. बाह्य जगातील निसर्गप्रतिमांवर त्यांच्या आंतरिक विश्वाचा अटळ संस्कार होऊनच कविता प्रकटते. कुठल्याही कलावंताच्या जीवनात बाह्य विश्वाइतकेच प्रभावी अंतर्विश्व असते, हे नाकारता येणार नाही. तसेच भवतालातील दृष्टिगोचर विश्वही मानवी संवेदनांना प्रभावित करत असते. आपल्या 'वॉल्डन' या पुस्तकात थोरोने लिहिलंय की — 'I have, as it were, my own sun and moon and stars, and a little world all to mysel[३].' ग्रेसची कविता हे त्यांचे स्वायत्त, स्वयंभू निर्मितीविश्व आहे. त्यातली निसर्गरूपे, त्यांचे विभाव, हे कवीच्या स्वभावाच्या साच्यातूनच प्रकटताना दिसतात. आपल्या कवितेतून एक संवेदनाधिष्ठित निसर्ग ग्रेसने निर्माण केलाय. 'प्राक्तन गंधी ललाट' या कवितेत 'लहरत गेले झाड धुक्यातुन आणि उलटली मुळे त्या जागेची खूण उसवली नितळ उन्हाच्यामुळे' अशा ओळी आहेत. निसर्गरूपांची केलेली प्रचंड उलथापालथ यातून दिसून येईल. झाडाचे धुक्यातून लहरत जाणे, मुळांचे उलटणे, ही प्रतिमा सांधणी तर्काला धक्का देणारी तर आहेचय त्याचबरोबर नितळ उन्हामुळे त्या जागेची खूण उसवणे, असा विलक्षण प्रतिमाप्रत्यय ग्रेसने साकारला आहे. निसर्गरूपांना अशा लकबी बहाल करणे, साधारणातून विलक्षणत्त्व जागृत करणे आणि त्यायोगे रसिकांच्या आस्वादप्रक्रियेला प्रभावित करणे हे या कवितेच्या आकर्षणाचे रहस्य आहे.

५) समारोप

ग्रेसच्या 'चंद्रमाधवीचे प्रदेश' या कविता संग्रहातील निसर्गप्रतिमांचे अवलोकन करणे ही आनंददायी प्रक्रिया आहे. या कवितेतला निसर्ग बाह्य विश्वाला बांधील नाही. तो त्याच्या अंगभूत सामर्थ्याने सृजनाचे नवे आविष्करण होऊन सांगोपांग प्रकटतो. त्यात अर्थघटकांच्या, नादलयीच्या, वास्तव—सत्याच्या अनेक संगती आहेत तशाच काही विसंगतीही आहेतय परंतु त्या विसंगतीही कवितेच्या आस्वादप्रक्रियेत कुठलाही अडसर ठरत नाहीत, ही विलक्षण बाब आहे. या कवितेतून प्रकटलेला निसर्ग जरी काही

अंशी गूढता, अलौकिकता, अगम्यता अशा भावांचे वहन करणारा असला तरी आस्वादकाच्या मनावर आपला ठसा ठळकपणे उमटविताना दिसतो. ग्रेसचा निसर्गबोध हा विश्वबोधाकडे जाणारा असल्याची प्रचिती ही कविता देऊन जाते. कालातीत अनुभव निर्माण करण्याची ओढ तिला आहे. या दृष्टीने या कवितेतला निसर्गही कालातीत होऊ बघतो. निसर्गरूपांचा अशा तऱ्हेने आविष्कार करणे ही प्रक्रिया मराठी कवितेत नावीन्यपूर्ण आहे. ग्रेसच्या कवितेतील निसर्गतत्त्व अलौकिक तत्त्वाशी नाते सांगू पाहते. सृजनाचा हा झळझळीत आविष्कार कधी हळुवार, कधी अनिवार, कधी सहजसुंदर तर कधी गूढ—विलक्षण अशा अनेक रीतींनी वाचकाला संमोहित करतो. यातील निसर्गरूपांची काही अवतरणे ही वाचकमनाच्या विसाव्याची ठिकाणे ठरावीत इतकी आकर्षक आहेत. ही कविता वाचकाची निसर्गाशी पुनर्भेट घडवून आणते, नवी ओळख करून देते, जाणिवेचे नवे जागरण करते, असे म्हणावे लागेल. मराठी रसिकमन कायम या कवितांवर प्रेम करत राहील.

संदर्भ सूची

१. ग्रेस, चंद्रमाधवीचे प्रदेश, पॉप्युलर प्रकाशन, चौथी आवृत्ती, २०१६

२. पाध्ये प्रभाकर, सौंदऱ्यानुभव

३. पाटील म. सु., कवितेचा रूपशोध, शब्दालय प्रकाशन, पहिली आवृत्ती, ऑगस्ट १९९९

४. परांजपे जयंत, ग्रेस आणि दुर्बोधता, विजय प्रकाशन, प्रथम आवृत्ती मार्च ह्यग्घह्य, पुनर्मुद्रण मार्च २०२३

५. पाटणकर वसंत, ग्रेस यांची कविता काही निरीक्षणे, अनेक प्रश्न, शब्द प्रकाशन, तिसरी आवृत्ती, मे २०२३

६. Henry David Thoreau, Walden, Webster's Thesaurus Edition 2005, PDF

❑❑❑

13

तबला वादनातील दिल्ली घराण्याचे वैशिष्ट्ये

उत्कर्ष रघुनाथ दळवी
संशोधक विद्यार्थी

प्रा. अभिजीत अपस्तंभ
मार्गदर्शक
(संगीत विभाग, न्यू आर्टस, कॉमर्स ॲण्ड सायन्स कॉलेज, अहमदनगर (स्वायत्त))

****

सारांश (Abstarct)

तबला वादन या विषय संबंधी माहिती अत्यंत कमी स्वरुपात आपल्याला पाहावयास मिळते.कारण तबला या वाद्याची उत्पत्ती आज पर्यंत कोणाला सांगण्यात आलेली नाही त्याचे लावले गेलेले अंदाज सगळीकडे नमूद केलेले आहेत.त्यामधून तबल्याचा उदय होऊन त्यावर वाजले जाणारे बोल, त्याला मिळालेला प्रतिसाद आणि त्यावरून तबल्यामध्ये निर्माण झालेले घराणे. अश्या पद्धतीने तबला वादनातील सर्वात पहिले घराने म्हणजे दिल्ली घराने आणि त्याबद्दल वादन वैशिष्ट्ये विषयक लिहिलेल्या माहितीचा अभाव आहे. तबला वादनातील सर्वात पहिले पाहिले असता ते दिल्ली घराणे तरी देखील या घराण्याविषयी माहिती लिखित स्वरुपात कमी प्रमाणात उपलब्ध आहे आणि त्यातही खूप सारे अंदाज लावलेले आहेत. ग्रंथांच्या माध्यमातून आपल्याला माहिती मिळवता येते. या संशोधनाच्या माध्यमातून दिल्ली घरान्याचे वैशिष्ट्ये या विषयी सखोल माहिती आणि त्याची वादन शैली चे महत्व, इतर घराण्यांचे वादन वैशिष्ट्ये, इतर घराण्याचा तुलनात्मक अभ्यास तसेच वादकांचे कलाकारांचे योगदान हे येणाऱ्या आधुनिक काळातील वादकांसाठी नवीन काही प्रोत्साहन मिळावे त्यांना जास्त प्रमाणात माहिती

MARATHA VIDYA PRASARAK SAMAJ'S

KPG ARTS, COMMERCE & SCIENCE COLLEGE, IGATPURI

Take Ghoti, Tal. Igatpuri, Dist. Nashik, Maharashtra-422403 (MH)

AFFILIATED TO SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE, MAHARASHTRA : ID. NO. PU/NS/ASC/023/1981

kpgcollegeigatpuri.ac.in

PhD Guide with students detail

Savitribai Phule Pune University

(Formerly University of Pune)

Telephone No: **25601258/1259**
E-mail : *boards@unipune.ac.in*
Telegraph : `UNIPUNE'
Fax No : **25691233**

ACADEMIC SECTION
Ganeshkhind, PUNE-411 007

Ref. No: BOD/Humanities/03/41

Date: 08/02/2021

To

Dr. Kiran Haribhau Rakibe
Maratha Vidya Prasarak Samaj's,
S.V.K.T. College, Lam Road Devalali Camp
Dist. Nashik-422401

Subject : Recognition as a Ph.D. Research Guide

Sir,

Please refer to your application for Recognition as a Ph.D. Research Guide of Savitribai Phule Pune University, I am directed to inform you that the University authorities have been pleased to recognize you as a Ph.D. Research Guide of this University under the provision of Section 37(1)(e) of the Maharashtra Public Universities Act, 2016.

The details of your recognition are as under :

1. You have been recognized to guide **Ph. D.** Scholars under the faculty of **Humanities** in the subject of **English** for the period of eight (8) years with effect from **04-12-2020** to **03-12-2028** with following particulars;

   i)Eight (8) Ph. D. Scholars, if you are a Professor.

   ii)Six (6) Ph. D. Scholars, if you are an Associate Professor.

   iii)Four (4) Ph.D. Scholars, if you are an Assistant Professor.

Your guideship is subject to the following conditions and other terms and conditions prescribed by the University and University Grants Commission, (UGC) New Delhi from time to time in this behalf:

i) M.Phil/Ph.D. Research Guideship will be governed by the University Grants Commission (Minimum Standards and Procedure for Award of M.Phil/Ph.D. Degree) Regulations 2016.

ii) a) If the affiliation/Recognition granted by the university to your College/Institute gets over then the recognition granted to you will be treated as cancelled from the date on which the period of affiliation/recognition gets over.

b) In case of Research Institute, it should be recognized by the University for the subject for which you are recognized as M.Phil/Ph.D. Research Guide.
If the recognition granted by the University to your Research Institute gets over then your recognition as an M.Phil/Ph.D. Research Guide will be treated as cancelled from the date on which the recognition to your Research Institute gets over.

HUM122200003

सावित्रीबाई फुले पुणे विद्यापीठ

गणेशखिंड, पुणे - ४११ ००७.

Savitribai Phule Pune University

Ganeshkhind, Pune - 411007.

स्वातंत्र्याचा अमृत महोत्सव

दूरध्वनी क्रमांक : ०२०-२५६२११५६/५७/७४
Telephone : 020-25621156/57/74
ईमेल / Email : rr@unipune.ac.in

शैक्षणिक विभाग (मान्यता कक्ष)
Academic Section (Approval Cell)
वेबसाईट / Website: www.unipune.ac.in

Ref. No: BOD/Humanities/24/180

Date: 22/05/2023

To
Dr.Vishnu Bhaurao Rathod
Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM)
Nashik Addr: Shivajinagar Gangapur Road
Nashik Ta: Nashik Dist: Nashik Pincode :422002

Subject : Recognition as a Post Graduate Teacher, M.Phil. & Ph.D. Research Guide

Sir,

Please refer to your application for Recognition as a Post Graduate Teacher, M.Phil. & Ph.D. Research Guide of Savitribai Phule Pune University, I am directed to inform you that the University authorities have been pleased to recognize you as a Post Graduate Teacher, M.Phil. & Ph.D. Research Guide of this University under the provision of Section 37(1)(e) of the Maharashtra Public Universities Act, 2016.

The details of your recognition are as under :

Designation	Faculty	Subject	Recognition on	Duration	No. of. Students Allowed
Professor	Humanities	Marathi	P. G. Teacher M.Phil. By Paper M.Phil. By Research Ph.D.Guide	w.e.f. 12-05-2023 w.e.f. 12-05-2023 w.e.f. 12-05-2023 w.e.f. 12-05-2023 To 05/04/2037(To Superannuation)	8 - Ph. D. , 3 - M.Phil.

Your guideship is subject to the following conditions and other terms and conditions prescribed by the University and University Grants Commission, (UGC) New Delhi from time to time in this behalf:

i) Ph.D./M.Phil Research Guideship will be governed by the University Grants Commission (Minimum Standards and Procedure for Award of Ph.D./M.Phil Degree) Regulations 2016.

ii) a) If the affiliation/Recognition granted by the university to your College/Institute gets over then the recognition granted to you will be treated as cancelled from the date on which the period of affiliation/recognition gets over.

Dr. Nalawade
Dr. Suresh Jadhav
दि।।
23/5/2023

b) In case of Research Institute, it should be recognized by the University for the subject for which you are recognized as Ph.D./M.Phil Research Guide.

32/2023-24
23/5/2023

P.T.O.

iii) No fresh Ph.D./M.Phil 'Research Students' should be registered with Ph.D./M.Phil Research Guides whose length of service as a regular faculty is left not more than one year and in such case you have to compulsorily assign Co- guide to the Research Students working under you.

In addition to the above conditions, it is essential to mention the name of 'Savitribai Phule Pune University' in author's address in the Publications made by you and your students.

Recognition granted to you is always subject to the terms and conditions prescribed by the University and University Grants Commission, New Delhi from time to time, in this behalf.

If any correction in the recognition letter then please contact this office within fifteen days from the date of receipt of this letter.

iv) If you change the existing College/ Institute, after getting University teacher approval, you have to apply online for address change.

(Dr. M.V. Rasve)
Deputy Registrar

Copy fwcs to :

1. The Dean, Faculty of Humanities.
2. The Principal, Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik.
3. The Deputy Registrar (Admission), Savitribai Phule Pune University, Pune-411 007.

HUM22200059

सावित्रीबाई फुले पुणे विद्यापीठ
गणेशखिंड, पुणे – ४११ ००७.
Savitribai Phule Pune University
Ganeshkhind, Pune – 411007.

स्वातंत्र्याचा अमृत महोत्सव

दूरध्वनी क्रमांक : ०२०-२५६२११५६/५७/७४
Telephone : 020-25621156/57/74
ईमेल / Email : rr@unipune.ac.in

शैक्षणिक विभाग (मान्यता कक्ष)
Academic Section (Approval Cell)
वेबसाइट / Website: www.unipune.ac.in

Ref. No: BOD/Humanities/16/363 **Date: 19/10/2022**

To
Dr.Ambadas Sampat Kapadi
Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM)
Nashik Addr: Shivajinagar Gangapur Road
Nashik Ta: Nashik Dist: Nashik Pincode :422002

Subject : Recognition as a Post Graduate Teacher, M.Phil. & Ph.D. Research Guide

Sir,

Please refer to your application for Recognition as a Post Graduate Teacher, M.Phil. & Ph.D. Research Guide of Savitribai Phule Pune University, I am directed to inform you that the University authorities have been pleased to recognize you as a Post Graduate Teacher, M.Phil. & Ph.D. Research Guide of this University under the provision of Section 37(1)(e) of the Maharashtra Public Universities Act, 2016.

The details of your recognition are as under :

Designation	Faculty	Subject	Recognition on	Duration	No. of. Students Allowed
Assistant Professor	Humanities	Economics	P. G. Teacher M.Phil. By Paper M.Phil. By Research Ph.D.Guide	w.e.f. 05-07-2022 w.e.f. 05-07-2022 w.e.f. 05-07-2022 w.e.f. 05-07-2022 To 09/03/2041(To Superannuation)	4 - Ph.D., 1 - M. Phil.

Your guideship is subject to the following conditions and other terms and conditions prescribed by the University and University Grants Commission, (UGC) New Delhi from time to time in this behalf:

i) Ph.D./M.Phil Research Guideship will be governed by the University Grants Commission (Minimum Standards and Procedure for Award of Ph.D./M.Phil Degree) Regulations 2016.

ii) a) If the affiliation/Recognition granted by the university to your College/Institute gets over then the recognition granted to you will be treated as cancelled from the date on which the period of affiliation/recognition gets over.

b) In case of Research Institute, it should be recognized by the University for the subject for which you are recognized as Ph.D./M.Phil Research Guide.

P.T.O.

iii) No fresh Ph.D./M.Phil 'Research Students' should be registered with Ph.D./M.Phil Research Guides whose length of service as a regular faculty is left not more than one year and in such case you have to compulsorily assign Co- guide to the Research Students working under you.

In addition to the above conditions, it is essential to mention the name of 'Savitribai Phule Pune University' in author's address in the Publications made by you and your students.

Recognition granted to you is always subject to the terms and conditions prescribed by the University and University Grants Commission, New Delhi from time to time, in this behalf.

If any correction in the recognition letter then please contact this office within fifteen days from the date of receipt of this letter.

iv) If you change the existing College/ Institute, after getting University teacher approval, you have to apply online for address change.

(Dr. M.V. Rasve)
Deputy Registrar

***Copy fwcs to* :**

1. The Dean, Faculty of Humanities.
2. The Principal, Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik.
3. The Deputy Registrar (Admission), Savitribai Phule Pune University, Pune-411 007.

Savitribai Phule Pune University
(Formerly University of Pune)

Tel. Nos: (020) 2562 1227/1212/1205
Fax no. : 020 25699232

Ganeshkhind, Pune - 07
Email : pgadmis@pun.unipune.ac.in

Ref. No.: PGS/PGS/1414

Date :22/08/2022

To,
The Principal / Director / Head
Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik [CAAN017440]

Sir/Madam

The Ph.D. cases forwarded by your Institute/Centre were placed before the Research & Recognition Committee in English (Humanities) held on 29/07/2022. The decision/s of Research & Recognition Committee are as follows :

Sr.No.	Name of the candidate & Name of the Guide	Remarks
1.	Archana Himmatrao Patil Guide : Dr. Rakibe Kiran Haribhau	Topic Approved and Admitted w.e.f. 19/04/2022 as follows :- Eco-Critical Perspectives in the Select Works of Ruskin Bond

Please comply with the directions of Reasearch & Recognition Committee and University Communicate to this office at the earliest.

Thanking You,

Yours faithfully,

Assistant Registrar
(P.G.Admissions)

Copy to :

1. Mr./Ms. Archana Himmatrao Patil
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik
2. Dr.Rakibe Kiran Haribhau
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik

Savitribai Phule Pune University
(Formerly University of Pune)

Tel. Nos: (020) 2562 1227/1212/1205
Fax no. : 020 25699232

Ganeshkhind, Pune - 07
Email : pgadmis@pun.unipune.ac.in

Ref. No.: PGS/203

Date :18/03/2023

To,
The Principal / Director / Head
Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik [CAAN017440]

Sir/Madam

The Ph.D. cases forwarded by your Institute/Centre were placed before the Research & Recognition Committee in English (Humanities) held on 01/03/2023. The decision/s of Research & Recognition Committee are as follows :

Sr.No.	Name of the candidate & Name of the Guide	Remarks
1.	Jayashree Chandrasekhar Khade Guide : Dr. Rakibe Kiran Haribhau	Topic Approved and Admitted w.e.f. 19/04/2022 as follows :- " Karenean Reading of Selected Novels of ted Dekker"

Please comply with the directions of Research & Recognition Committee and communicate to this office at the earliest.

Thanking You,

Yours faithfully,

Deputy Registrar
(P.G.Admissions)

Copy to :

1. Mr./Ms. Jayashree Chandrasekhar Khade
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik
2. Dr.Rakibe Kiran Haribhau
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik

Savitribai Phule Pune University
(Formerly University of Pune)

Tel. Nos: (020) 2562 1227/1212/1205
Fax no. : 020 25699232

Ganeshkhind, Pune - 07
Email : pgadmis@pun.unipune.ac.in

Ref. No.: PGS/PGS/1538

Date :13/09/2022

To,
The Principal / Director / Head
Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik [CAAN017440]

Sir/Madam

The Ph.D. cases forwarded by your Institute/Centre were placed before the Research & Recognition Committee in English (Humanities) held on 27/06/2022. The decision/s of Research & Recognition Committee are as follows :

Sr.No.	Name of the candidate & Name of the Guide	Remarks
1.	Mohini Ganesh Savedkar Guide : Dr. Rakibe Kiran Haribhau	Topic Approved and Admitted w.e.f. 19/04/2022 as follows :- Movement and Constraint in Neel Mukherjee's Novels

Please comply with the directions of Reasearch & Recognition Committee and University Communicate to this office at the earliest.

Thanking You,

Yours faithfully,

Assistant Registrar
(P.G.Admissions)

Copy to :

1. Mr./Ms. Mohini Ganesh Savedkar
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik
2. Dr.Rakibe Kiran Haribhau
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik

Savitribai Phule Pune University

(formerly University of Pune)

Ganeshkhind, Pune- 411 007.

Telephone Nos.: 25621205/10/11
Email : pgadmis@pun.unipune.ac.in

Date 24/03/2023

Ref. No.: PGS/233

To,
The Principal,
Department of English,
K.T.H.M. College,
Nashik - 422002.

Sir/Madam,

The Ph. D. Cases forwarded by the Centre were placed before the Research and Recognition Committee in the subject **English (Humanities), held on 01/03/2023**. The decision/s of the Research & Recognition committee is/are as follows.

Sr. No.	Name of the Candidate & Name of the Guide	Remarks
1.	Abdullah Hassan Zaid Mohammed Guide : Dr. Kiran Rakibe	**Topic Approved & Admitted w.e.f. 15/02/2023 as follows :** "A Study of Narrative Stylistics in the Postmodern Novelists with Special Reference to Zadie Smith and Kazuo Ishiguro."

Please comply with the directions of the Research & Recognition Committee and communicate to this office at the earliest.

Thanking You,

Yours faithfully,

Deputy Registrar
(P.G. Admissions)

Scanned with CamScanner

Scanned with CamScanner

Savitribai Phule Pune University
(Formerly University of Pune)

Tel. Nos: (020) 2562 1227/1212/1205
Fax no. : 020 25699232

Ganeshkhind, Pune - 07
Email : pgadmis@pun.unipune.ac.in

Ref. No.: PGS/203

Date :18/03/2023

To,
The Principal / Director / Head
Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik [CAAN017440]

Sir/Madam

The Ph.D. cases forwarded by your Institute/Centre were placed before the Research & Recognition Committee in English (Humanities) held on 01/03/2023. The decision/s of Research & Recognition Committee are as follows :

Sr.No.	Name of the candidate & Name of the Guide	Remarks
1.	Munin Das Guide : Dr. Rakibe Kiran Haribhau	Topic Approved and Admitted w.e.f. 01/09/2022 as follows :- "Diaspora Problematics Amidst Political Turbulence in the Selected Works of Rita Choudhury and Prajwal Parajuly"

Please comply with the directions of Research & Recognition Committee and communicate to this office at the earliest.

Thanking You,

Yours faithfully,

Deputy Registrar
(P.G.Admissions)

Copy to :

1. Mr./Ms. Munin Das
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik
2. Dr.Rakibe Kiran Haribhau
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik

Savitribai Phule Pune University
(Formerly University of Pune)

Tel. Nos: (020) 2562 1227/1212/1205
Fax no. : 020 25699232

Ganeshkhind, Pune - 07
Email : pgadmis@pun.unipune.ac.in

Ref. No.: PGS/734

Date :14/10/2023

To,
The Principal / Director / Head
Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik [CAAN017440]

Sir/Madam

The Ph.D. cases forwarded by your Institute/Centre were placed before the Research & Recognition Committee in Economics (Humanities) held on 11/09/2023. The decision/s of Research & Recognition Committee are as follows :

Sr.No.	Name of the candidate & Name of the Guide	Remarks
1.	Ananta Prabhu Pawar Guide : Dr. Kapadi Ambadas Sampat	Topic Approved and Admitted w.e.f. 26/07/2023 as follows :- पालघर जिल्ह्यातील कुपोषणग्रस्त बालकांच्या कौटुंबिक परिस्थितीचे आर्थिक व सामाजिक अध्ययन (२०१२-१३ ते २०२२-२३)

Please comply with the directions of Research & Recognition Committee and communicate to this office at the earliest.

Thanking You,

Yours faithfully,

Deputy Registrar
(P.G.Admissions)

Copy to :

1. Mr./Ms. Ananta Prabhu Pawar
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik
2. Dr.Kapadi Ambadas Sampat
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik

Savitribai Phule Pune University
(Formerly University of Pune)

Tel. Nos: (020) 2562 1227/1212/1205
Fax no. : 020 25699232

Ganeshkhind, Pune - 07
Email : pgadmis@pun.unipune.ac.in

Ref. No.: PGS/31

Date :12/01/2023

To,
The Principal / Director / Head
Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik [CAAN017440]

Sir/Madam

The Ph.D. cases forwarded by your Institute/Centre were placed before the Research & Recognition Committee in Economics (Humanities) held on 09/11/2022. The decision/s of Research & Recognition Committee are as follows :

Sr.No.	Name of the candidate & Name of the Guide	Remarks
1.	Elizabeth Oommen Guide : Dr. Kamble Mohan Bhimrao	Topic Approved and Admitted w.e.f. 05/09/2022 as follows :- A study of Socio-Economic conditions of minority women in unorganised sector in Nashik District

Please comply with the directions of Reasearch & Recognition Committee and University Communicate to this office at the earliest.

Thanking You,

Yours faithfully,

Deputy Registrar
(P.G.Admissions)

Copy to :

1. Mr./Ms. Elizabeth Oommen
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik
2. Dr.Kamble Mohan Bhimrao
   Maratha Vidya Prasarak Samaj KRT Arts BH Commerce and AM Science College (KTHM) Nashik Addr: Shivajinagar Gangapur Road Nashik Ta: Nashik Dist: Nashik

सावित्रीबाई फुले पुणे विद्यापीठ

गणेशखिंड, पुणे ४११००७

Savitribai Phule Pune University

Ganeshkhind, Pune - 411007

सावित्रीबाई फुले पुणे विद्यापीठ

दूरध्वनी क्रमांक: ०२०-२५६२१२०५
Telephone No.: 020-25621205
ईमेल / Email:pgadmis@pun.unipune.ac.in

शैक्षणिक प्रवेश विभाग
P.G. Admission Section
Website: www.unipune.ac.in

No. PGS/ 1127

Date: 13/04/2024

To,
Ms. Thorat Vidya Bhika,
S.M.B.S.T College of Arts, Science
& Commerce, Sangamner,
Dist.- Ahmednagar-422 605

Sub. : Appointment of Research Co-Guide for Ph.D. Course

With reference to your application dated 28/03/2024. I am directed to inform you that on behalf of the Research & Recognition Committee you are permitted to complete your Doctoral Research in the subject of Economics under the guidance of **Dr. A. M. Pawar** and Co-guide **Dr. Ambadas S. Kapadi**

13.4.24
Mohan P. Belekar
Assistant Registrar

Copy : 1. **The Principal,**
S.M.B.S.T College of Arts, Science
& Commerce, Sangamner,
Dist.- Ahmednagar-422 605

2. **Dr. A. M. Pawar** (Research Guide)
&
3. **Dr. Ambadas S. Kapadi,** (Research Co-guide)
S.M.B.S.T College of Arts, Science
& Commerce, Sangamner,
Dist.- Ahmednagar-422 605

सावित्रीबाई फुले पुणे विद्यापीठ

गणेशखिंड, पुणे ४११००७

Savitribai Phule Pune University

Ganeshkhind, Pune - 411007

सावित्रीबाई फुले पुणे विद्यापीठ

दूरध्वनी क्रमांक : ०२०-२५६२१२०५
Telephone No.: 020-25621205
ईमेल/Email:pgadmis@pun.unipune.ac.in

शैक्षणिक प्रवेश विभाग
P.G. Admission Section
Website: www.unipune.ac.in

PGS/1136

Date: 15/04/2024

To,

Mr. Adhav Santosh Prabhakar
S.M. B. S. T. College of Arts, Science
& Commerce Sangamner
Ahmednagar - 422 605.

Subject: Appointment for Research Co-guide for Ph. D. Course.

With reference to your application dated 28/03/2024 on the above subject, I am to inform you that the University Authority has allowed to appoint Dr. Ambadas S. Kapadi as a Co-Guide to complete your research work in the subject of Economics.

Previous Letter ref. No.1124 dated 14/04/2024 be treated as cancelled.

15.4.24
Mohan P Belekar
Assistant Registrar

Copy to :

1) The Principal
S.M. B. S. Thorat College,
Sangamner Ahmednagar - 422 605.

2) Dr. Suhas Avhad (Research Guide)
&
3) Dr. Ambadas S. Kapadi (Research Co-Guide)
S.M. B. S. Thorat College,
Sangamner Ahmednagar - 422 605.

MARATHA VIDYA PRASARAK SAMAJ'S

KPG ARTS, COMMERCE & SCIENCE COLLEGE, IGATPURI

Take Ghoti, Tal. Igatpuri, Dist. Nashik,
Maharashtra-422403 (MH)

AFFILIATED TO SAVITRIBAI PHULE PUNE UNIVERSITY,
PUNE, MAHARASHTRA : ID. NO. PU/NS/ASC/023/1981

kpgcollegeigatpuri.ac.in

Book / Chapter in Book published

About Authors

Dr. N. Thennavan



Dr. N. Thennavan is a Guest Faculty in the Department of Physical Education and Yoga at Pondicherry University Community College, Lawspet, Puducherry, with 11 years of experience in physical education and sports. He has also served as the CEO of Fitgrow Physical Education Pvt. Ltd. in Hyderabad and Puducherry. His research contributions include the publication of two research papers in international journals. He holds a Ph.D. in Physical Education (2024) from Annamalai University, Chidambaram, and has also qualified for NET (2024). His academic credentials include a Master of Physical Education (M.P.Ed.) with First Class (2013) from Pondicherry University, a Bachelor of Physical Education (B.P.Ed.) with First Class (2011) from Annamalai University, and a Diploma in Physical Education (D.P.Ed.) with First Class (2009) from Pondicherry University Community College. Additionally, he has completed a P.G. Diploma in Yoga (2017) from Annamalai University and an NIS Certificate Course in Cricket (2017) from KIIT University, Bhubaneswar. With his diverse expertise in teaching, research, and administration, he continues to contribute significantly to the field of physical education and sports science.

Dr. Dhiraj Sharma



Dr. Dhiraj Sharma possesses over two and a half decades of rich and diverse experience spanning both industry and academia. His professional journey includes significant contributions to leading organizations and educational institutions. In the corporate sector, he has worked with renowned companies such as TCI Ltd. and Aloke Fibrecares (P) Ltd., where he gained valuable industry insights. In academia, Dr. Sharma has been associated with several prestigious institutions across India and abroad. He has held key positions at the Royal University of Bhutan, Galgotias University, IMS Ghaziabad, IMT Ghaziabad, ISB Hyderabad, ICFAI Hyderabad, and IIM Ahmedabad, contributing extensively to research, teaching, and academic leadership. Additionally, he has served as an adjunct faculty member at IIM Rohtak and Chonnam National University in South Korea, further enriching his international academic exposure. Dr. Sharma's research work has been widely recognized and published in reputed international journals, reflecting his commitment to advancing knowledge in his field. His extensive experience, both in industry and academia, positions him as a distinguished scholar and professional dedicated to fostering academic excellence and industry collaboration.

Arti Ranjan



Ms. Arti Ranjan is working as an Assistant Professor, Department of Computer Science and Engineering, Sharda University, Greater Noida, Uttar Pradesh, India. She has received her M.Tech degree in Computer Science and Engg. from Motilal Nehru National Institute of Technology (MNNIT), Allahabad in 2015 and B.Tech from I.E.R.T. Allahabad. (UP state govt. College) in 2009. She is Pursuing PHD from Indira Gandhi Delhi Technical University for Women (IGDTUW), New Delhi. She is having 14 years of teaching experience. Her area of research interests are Image Processing, computer vision, NLP, Machine Learning and Deep Learning. She has published several research articles in reputed conferences and peer-reviewed journals with high impact factors indexed in SCIE, Scopus, Google Scholars, UGC care. She has received Commendable Research Award-2023 from Indira Gandhi Delhi Technical University for Women (IGDTUW), New Delhi for her research contributions. She has served as reviewer for various conferences and journals, including IEEE, Springer, Elsevier, and other international journals with a Scopus index.

Mr. Gorakh Waluba Gangurde



Mr. Gorakh W. Gangurde is an accomplished academic with expertise in Physics, currently serving as an Assistant Professor at MVP Samaj's K.P.G. Arts, Commerce, and Science College, Igatpuri, Nashik. With five years of teaching experience at the undergraduate level, he has played an active role in academic and administrative responsibilities, including serving as Head of the Department of Physics, a TYBSc Admission Committee Member, a Science Association Member, an AQAR Criterion-6 Member, and the Energy Audit Committee Coordinator. Mr. Gorakh W. Gangurde holds an M.Sc. in Physics (2018) and a BSC in Physics (2016) from SPPU, both with high academic distinction. Additionally, he completed his B.Ed. (2020) from MVP Samaj's Ad. Viththalrao Hande College of Education, Nashik, qualifying for both SET (2019) and CSIR-NET JRF (2021). His research work includes projects on the synthesis and characterization of BaO thin films using the spray pyrolysis method and a parabolic solar cooker model. Beyond academics, Mr. Gorakh W. Gangurde has actively participated in national and international workshops, faculty development programs (FDPs), and conferences covering topics such as material science, alternative energy, green audits, intellectual property rights, and innovative pedagogies for college teachers. His commitment to research and education continues to make a significant impact in the field of physics and higher education.

Addition Publishing House
www.additionbooks.com

Price: 799 INR

ISBN: 978-93-6422-789-6

978-93-6422-789-6

Addition Publishing House

Research Design and Methodology

First Edition

RESEARCH DESIGN and METHODOLOGY



Dr. N. Thennavan

Dr. Dhiraj Sharma

Arti Ranjan

Mr. Gorakh Waluba Gangurde

Addition Publishing House

लेखक परिचय



डॉ. बी. एम. सोनवणे

एम.ए., एम.फिल., पीएच.डी.

- अर्थशास्त्र विभाग प्रमुख, महाराजा सयाजीराव गायकवाड महाविद्यालयात मालेगाव-कॅम्प (नाशिक) येथे कार्यरत असून महात्मा गांधी विद्यामंदिर संस्थेच्या विविध महाविद्यालयांत पदवी व पदव्युत्तर स्तरावर १८ वर्षे अध्यापनाचा अनुभव
- सावित्रीबाई फुले पुणे विद्यापीठाच्या अर्थशास्त्र अभ्यासमंडळाचे सदस्य म्हणून कार्यरत
- राष्ट्रीय सेवा योजना कार्यक्रम अधिकारी म्हणून काम
- महाविद्यालयीन परीक्षा अधिकारी म्हणून कार्यरत
- सावित्रीबाई फुले पुणे विद्यापीठाची पदव्युत्तर संशोधन मार्गदर्शक म्हणून मान्यता. तीन संशोधक विद्यार्थी संशोधन कार्य करीत आहेत. राष्ट्रीय, राज्यस्तरीय व विद्यापीठ स्तरीय चर्चासत्रांचे आयोजन व चर्चासत्रात शोधनिबंधांचे वाचन व तज्ज्ञ मार्गदर्शक म्हणून सहभाग.
- एका संदर्भ ग्रंथाचे लेखन.



डॉ. डी. एन. सोनवणे

एम.ए., एम.फिल., पीएच.डी.

- व्यावसायिक अर्थशास्त्र विभाग प्रमुख म्हणून महाराजा सयाजीराव गायकवाड कला, विज्ञान व वाणिज्य महाविद्यालय मालेगाव कॅम्प, नाशिक येथे कार्यरत असून महात्मा गांधी विद्यामंदिर, नाशिक या महाराष्ट्रातील अग्रगण्य संस्थेच्या विविध महाविद्यालयांत पदवी आणि पदव्युत्तर स्तरावर ३० वर्षे अध्यापनाचा अनुभव.
- सावित्रीबाई फुले पुणे विद्यापीठाच्या व्यावसायिक अर्थशास्त्र अभ्यासमंडळाचे सदस्य म्हणून कार्यरत.
- विद्यार्थी कल्याण अधिकारी व राष्ट्रीय सेवा योजना कार्यक्रम अधिकारी आणि विभागीय समन्वयक म्हणून काम.
- सावित्रीबाई फुले विद्यापीठाचे संशोधक मार्गदर्शक म्हणून मान्यता.
- राष्ट्रीय, राज्यस्तरीय आणि विद्यापीठ स्तरीय चर्चासत्रांचे आयोजन.
- चर्चासत्रात शोधनिबंधांचे वाचन व तज्ज्ञ मार्गदर्शक म्हणून सहभाग
- दोन संदर्भ ग्रंथांचे लेखन
- आदर्श शिक्षक पुरस्कार, नेशन बिल्डर अॅवार्ड, समाजभूषण (जीवनगौरव) पुरस्काराने सन्मानित आहेत.



डॉ. बी. सी. पाटील

एम. ए. (अर्थशास्त्र), बी.एड., नेट, पीएच.डी., जी. डी. सी. अँड. ए.

- अर्थशास्त्र विभाग प्रमुख, मराठा विद्या प्रसारक समाजाचे कर्मवीर पुंजाबाबा गोवर्धने कला, वाणिज्य व विज्ञान महाविद्यालय, इगतपुरी, जिल्हा. नाशिक.
- १२ वर्षांचा पदवी आणि पदव्युत्तर वर्गांना शिकविण्याचा अनुभव.
- महाविद्यालय परीक्षा अधिकारी (CEO) म्हणून कामकाज पाहत आहे.
- ७ वर्षे राष्ट्रीय सेवा योजनेचा प्रमुख कार्यक्रम अधिकारी म्हणून यशस्वीरीत्या कामगिरी पूर्ण केली.
- २०१६ मध्ये राष्ट्रीय चर्चासत्राचे समन्वयक म्हणून कामकाज पाहिले.
- अर्थशास्त्र संबंधित विविध ज्वलंत विषयांवर १३ शोधनिबंध प्रकाशित.
- विविध आंतरराष्ट्रीय व राष्ट्रीय चर्चासत्रे आणि कार्यशाळेत सहभाग.

niralipune@pragationline.com | www.pragationline.com
Also find us on www.facebook.com/niralibooks
@nirali.prakashan





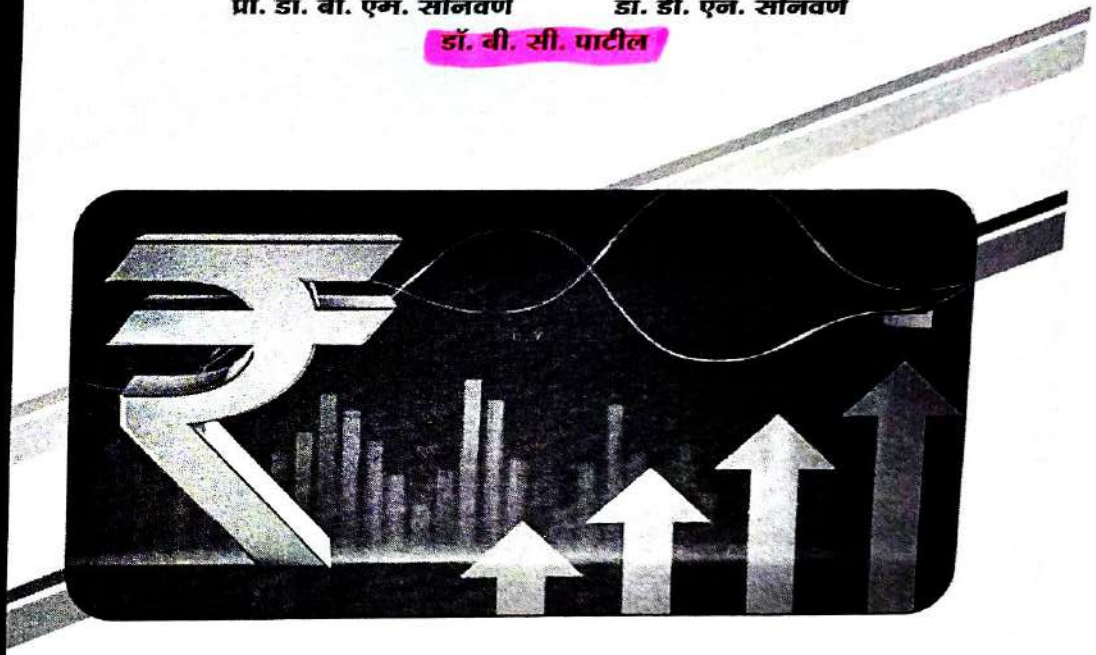
एम. ए. द्वितीय वर्ष : सेमिस्टर-३

NEP अभ्यासक्रमावर आधारित

आर्थिक वृद्धी आणि विकास-I

अर्थशास्त्र : अनिवार्य

प्रा. डॉ. बी. एम. सोनवणे डॉ. डी. एन. सोनवणे
डॉ. बी. सी. पाटील

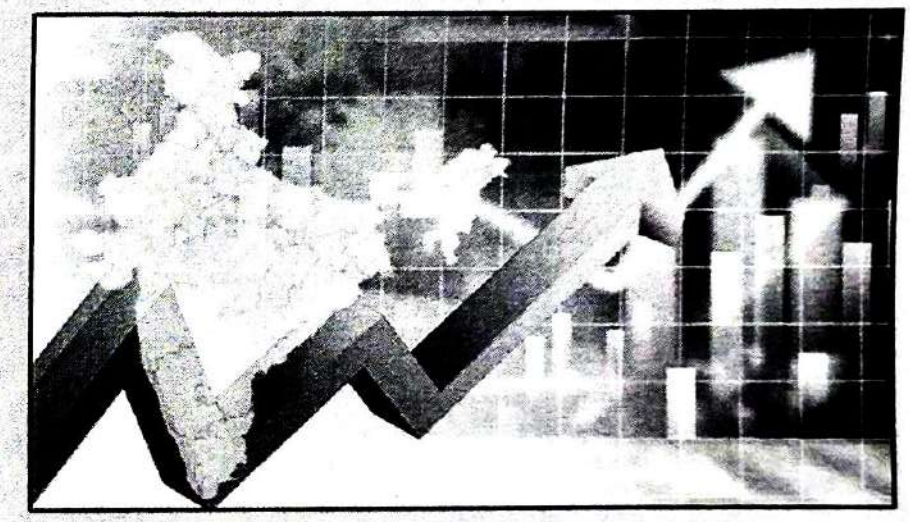


NIRALI PRAKASHAN
ADVANCEMENT OF KNOWLEDGE

://mail.google.com/mail/u/1/#inbox/FMfcgzQZTCjfKLZJQRrggkCNxDCbMkdJ?projector=1&messagePartId=0.1

पुण्यश्लोक अहिल्यादेवी होळकर
सोलापूर विद्यापीठ सोलापूरच्या
NEP 2020 अभ्यासक्रमावर आधारित
बी. ए. भाग-१ : सत्र १ : DSC-I

भारतीय अर्थव्यवस्था-I



डॉ. बी. सी. पाटील

NIRALI PRAKASHAN
ADVANCEMENT OF KNOWLEDGE

लेखक परिचय



डॉ. बी. सी. पाटील
एम.ए., (अर्थशास्त्र) बी.एड., नेट पीएच. डी., जी. डी. सी. अँड ए.

- अर्थशास्त्र विभाग प्रमुख कर्मवीर पुंजाबाबा गोवर्धने कला, वाणिज्य व विज्ञान महाविद्यालय इगतपुरी. जिल्हा नाशिक
- १३ वर्षांचा पदवी आणि पदव्युत्तर वर्गांना शिकविण्याचा अनुभव
- राष्ट्रीय चर्चासत्रामध्ये समन्वयकाचे कामकाज पाहिले
- अर्थशास्त्र संबंधित विविध ज्वलंत विषयांवर १५ शोधनिबंध प्रकाशित
- विविध राष्ट्रीय व आंतरराष्ट्रीय चर्चासत्रे आणि कार्यशाळेत सहभाग

निराली प्रकाशन : सोलापूर शाखा
R-158/2, अवंती नगर, गोल्डन गेट जवळ,
पुणे नाका चौक,
सोलापूर ४१३००१ (महाराष्ट्र)

ISBN 9361098179

niralipune@pragationline.com | www.pragationline.com
Also find us on www.facebook.com/niraliprakashan
@nirali.prakashan

N7711

As per the National Education Policy - 2020 new syllabus "Indian Economic Policy" (OE) this book is includes, Economy and Classification, role of Agriculture, Industry and Service Sector in India, New Economic Policy.

We are very delighted to present the book and reference book of 'Indian Economic Policy' as a Open Elective (OE) subject to all Faculty First year Semester - I. The present book discusses in detail component-wise the syllabus, which is based on the reference material.

References are prepared with the latest information on the Indian and a global economy. At the end of each topics, objective multiple-choice questions are given in terms of exam preparation as per the structure mentioned by the University. Therefore, we have written this book with the sincere intention that this book will be useful for all teachers as well as students preparing for various exams.



Prashant

Economic ₹ 150

ISBN 978-81-978121-3-2

www.prashantpublications.com
prashantpublication.jal@gmail.com

Indian Economic Policy - I

Prof. Santosh Adhav • Dr. A. S. Kapadi • Dr. Ganesh Walunj

Prashant Publications



F.Y.B.A. • Semester I

(As per NEP Syllabus w.e.f. 2024-25)

INDIAN ECONOMIC POLICY - I

Prof. Santosh P. Adhav
Dr. A. S. Kapadi
Dr. Ganesh Walunj

https://mail.google.com/mail/u/0/#inbox/KtbxLxGcFwQlSRvGJbFpzQGwpgFZVSQmxq?projector=1&messagePartId=0.1

सावित्रीबाई फुले पुणे विद्यापीठाच्या

नवीन अभ्यासक्रमानुसार क्रमिक पुस्तके

F.Y.B.Com. • Semester II
(As per NEP 2020 Syllabus w.e.f. 2024-25)

- Financial Accounting - II
- Inventory, Labour, and Overhead Accounting - II
- Principles and Functions of Management - II
- Fundamentals of Marketing - II
- History, Principles and Management of Cooperation – II
- Fundamentals of Insurance - II
- Start-up and Insurance Law - II
- Market Structure and Welfare Economics
- Business Accounting - II (Compulsory)
- Business Entrepreneurship
- Retail Banking
- बाजार संरचना आणि कल्याणाचे अर्थशास्त्र
- स्टार्टअप आणि विमा कायदा - II
- विमा मूलतत्त्वे - II
- सहकाराचा इतिहास, तत्त्वे व व्यवस्थापन - II
- व्यवस्थापनाचे तत्त्वे आणि कार्ये - II
- व्यावसायिक उद्योजकता - II
- विपणनाचे मूलतत्त्वे - II

Commerce ₹ 210
ISBN 978-93-49325-70-8
Prashant
www.prashantpublications.com
prashantpublication.jal@gmail.com

MARKET STRUCTURE AND WELFARE ECONOMICS
Dr. Kapadi • Dr. Waghere • Mr. Galbote • Ms. Saroj
Prashant Publications



MARKET STRUCTURE AND WELFARE ECONOMICS

Dr. Ambadas Kapadi
Mr. Tushar Galbote
Dr. Yuvaraj Waghere
Ms. Diksha Saroj

Prashant

सावित्रीबाई फुले पुणे विद्यापीठाच्या

नवीन अभ्यासक्रमानुसार क्रमिक पुस्तके

F.Y.B.Com. • Semester II
(As per NEP 2020 Syllabus w.e.f. 2024-25)

- Financial Accounting - II
- Business Accounting - II (Compulsory)
- Business Mathematics - II
- Fundamentals of Insurance - II
- Fundamentals of Marketing - II
- Inventory, Labour, and Overhead Accounting - II
- Market Structure and Welfare Economics
- Principles and Functions of Management - II
- Start-up and Entrepreneurship Law - II
- बाजार संरचना आणि कल्याणाचे अर्थशास्त्र
- वाणिज्यिक भूगोल
- विपणनाचे मूलतत्त्वे - II
- व्यवस्थापनाची मूलतत्त्वे आणि कार्य - II

वाणिज्य ₹ 160

ISBN 978-93-49325-90-6

Prashant

www.prashantpublications.com
prashantpublication.jal@gmail.com

विमा व्यवसायातील मूलतत्त्वे

डॉ. टेके • डॉ. वाघेरे • डॉ. शेटे • डॉ. कापडी

प्रशांत पब्लिकेशन्स

National Education Policy 2020
NEP 2020

F.Y.B.Com. • Semester II
(As per NEP Syllabus w.e.f. 2024-25)



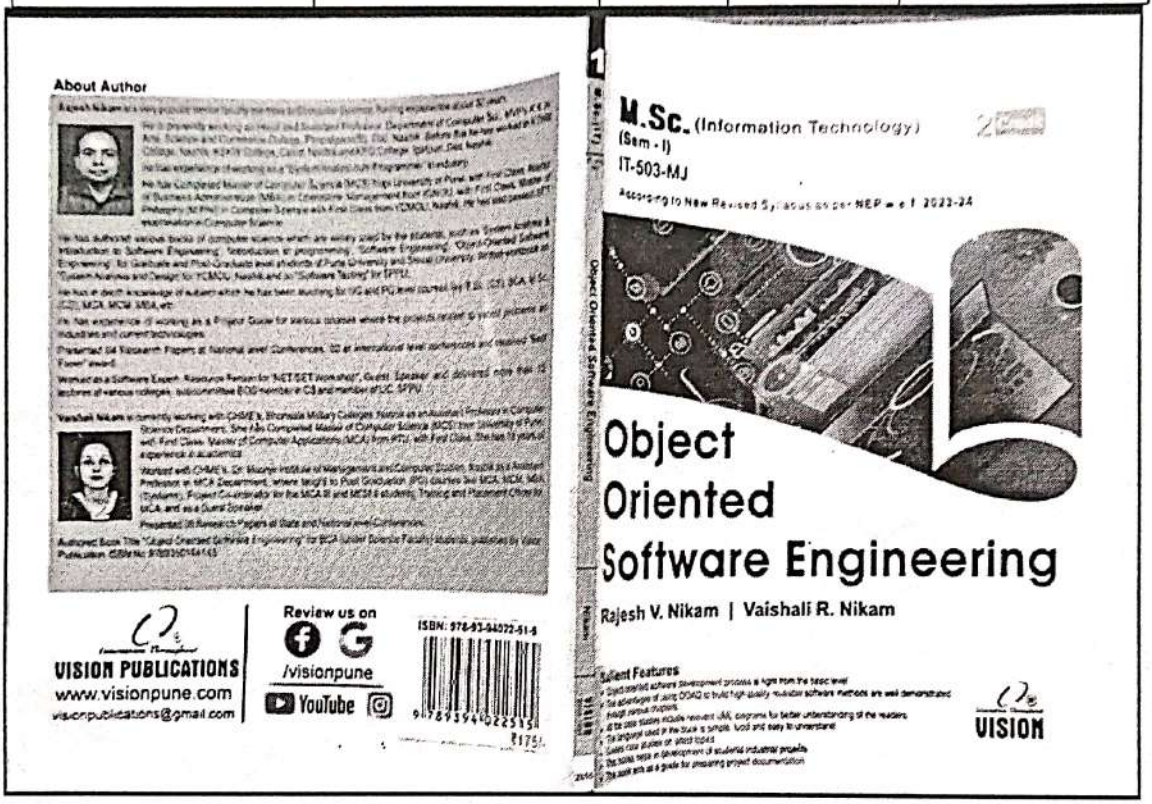
Fundamentals of Insurance

विमा व्यवसायातील मूलतत्त्वे

डॉ. उदय टेके
डॉ. युवराज वाघेरे
डॉ. देवदत्त शेटे
डॉ. अंबादास कापडी

Prashant

Name of the teacher	Name of the Book	Year	ISBN	Publication
Mr. Rajesh V Nikam	Object Oriented Software Engineering	2024	978-93-94022-51-5	Vision Publications, Pune



8:24 72%
PLANT PHYSIOLOGY BOOK.pdf

ISBN-978-93-94174-51-1

Plant Physiology

Dr. Vasantrao B. Kadam
Dr. Kirankumar Khandare
Dr. Shivaji B. Andhale
Dr. Dnyaneshwar S. Borade
Mr.Durgesh Shankarrao Antapurkar



First Edition

Excellent Publishers

MARATHA VIDYA PRASARAK SAMAJ'S

KPG ARTS, COMMERCE & SCIENCE COLLEGE, IGATPURI

Take Ghoti, Tal. Igatpuri, Dist. Nashik,
Maharashtra-422403 (MH)

AFFILIATED TO SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE, MAHARASHTRA : ID. NO. PU/NS/ASC/023/1981

kpgcollegeigatpuri.ac.in

Major / Minor Research Project

सावित्रीबाई फुले पुणे विद्यापीठ
(पूर्वीचे पुणे विद्यापीठ)
वित्त व लेखा विभाग

फोन : २५६९९५३५, २५६०१२३६/३५
फॅक्स : (०२०) २५६९०३३४
ई-मेल: fao@unipune.ac.in

नवीन प्रशासन भवन, सावित्रीबाई फुले पुणे विद्यापीठ, गणेशखिंड, पुणे-४११ ००७.

संदर्भ क्र.: वित्त/देयक कक्ष/२०२४-२५/६७० दिनांक : ०९.१२.२०२४

प्रति,
मा. प्राचार्य / संचालक,
सावित्रीबाई फुले पुणे विद्यापीठ,
सर्व संलग्नीत महाविद्यालये व मान्यताप्राप्त संस्था.

विषय : ASPIRE संशोधन योजनेच्या Research Mentorship Programme अंतर्गत पात्र अध्यापकांना पहिल्या हप्त्याची रक्कम वितरित करणेबाबत...

महोदय / महोदया,

ASPIRE संशोधन योजनेच्या Research Mentorship Programme अंतर्गत सोबत जोडलेल्या यादीतील शिक्षकांचे संशोधन योजनेचे प्रस्ताव (सन २०२०-२२ या वर्षासाठी) मंजूर करण्यात आलेले असून संशोधन योजनेच्या पहिला हप्ताची (मंजूर रक्कमेच्या ५० टक्के) रक्कम रुपये 125000/- आपल्या महाविद्यालयाच्या बॅंक खात्यामध्ये **दि. २८/११/२०२४** रोजी जमा करण्यात आलेली आहे.

सदर संशोधन योजनेवरील सर्व खर्च मार्गदर्शक तत्वांनुसार आपल्या महाविद्यालयाच्या बॅंक खात्यामार्फत करावयाचा आहे. भारत सरकारच्या नियमांनुसार संशोधन योजनेवरील अधिकाअधिक खर्च आर.टी.जी.एस. / एन.ई.एफ.टी. / धनादेशाव्दारे करावयाचा आहे. संशोधन योजनेसाठी प्राप्त झालेले अनुदान प्राध्यापकांच्या वैयक्तिक बॅंक खात्यावर वर्ग करण्यात येऊ नये.

विद्यापीठामध्ये जमा केलेल्या अर्थसंकल्पानुसार पहिल्या वर्षाचा संशोधनाचा खर्च दि. ३० नोव्हेंबर, २०२५ पूर्वी करण्यात यावा व सनदी लेखापाल यांच्या सहीचे खर्चाचे विवरणपत्र, विनियोग प्रमाणपत्र व देयकांच्या मूळ प्रती उपकुलसचिव, अंतर्गत गुणवत्ता सिध्दता कक्ष यांचेकडे पाठविण्यात याव्यात. सदर हिशोबांची तपासणी झाल्यानंतर दुसरा हप्ता अदा करण्यात येईल.

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार संशोधन अनुदानाच्या अखर्चित रकमेवर संबंधित आर्थिक वर्षामध्ये १० टक्के व्याज आकारणी केली जाईल. तसेच विद्यापीठास व्याजासहीत रक्कम प्राप्त होईपर्यंत महाविद्यालयास कोणत्याही प्रकारचे अनुदान देय होणार नाही, याची कृपया नोंद घ्यावी.

कळावे,

आपली,

वित्त व लेखा अधिकारी

सोबत : वरीलप्रमाणे.

N.D.M.V.P. SAMAJ'S
K.P.G. Arts Commerce & Science College, Igatpuri, Dist. Nashik
Inward No 234 | 2024-25
Date: 30/12/2024

ARC Samp Research Fellow Jalgaon Female

Sr. No.	College Code	Application ID	College/Department	Teacher Name	Sanction Budget in Lakhs	Ist Install. 50% Rs.	Total Ist Install. Rs.	Puncode	Acceptance Status	Revised budget Status
36	19	21TEC000108	Maratha Vidya Prasarak Samaj K.P.G. Arts Commerce & Science College Igatpuri Addr: Near Take-Ghoti Mumbai-Agra Road Igatpuri Ta: Igatpuri Dist: Nashik	JADHAV NITIN KLYANRAO	250000	125000	125000	CAAN017500	Yes	Yes
						Total	**125000**			