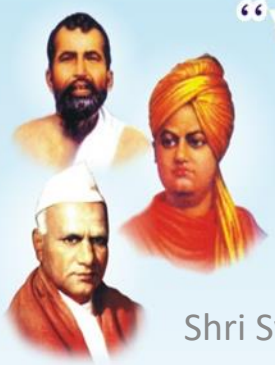

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शिक्षण महर्षी डॉ.बापूजी साळुंखे

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are not able to appreciate modern concept of health and sanitation. They do not take much care pertaining to their own health. They believe that diseases are traditional means of diagnosis and care. Good number of them fall a prey to the diseases such as skin diseases, forest fever, typhoid, malaria etc. contact with outsiders further added to a few more diseases in the tribal areas.

8) Gender Issues:

The degradation of the natural environment, particularly through the destruction of forests and a rapidly shrinking resource base, has had its impact on the status of women. The opening of the tribal belts to mining industries and commercialization has exposed tribal men and women to the ruthless operations of the market economy, giving rise to consumerism and to commoditization of women.

9) Water problems:

Tribes community don't have the regular drinking water supply. They are inhabited of using the water, which is collected in small ditches. This proves hazardous to their health.

Conclusion:

All over discussion no special priorities for tribal development are specified as these are not reflected in budgetary allocations. There seems to be no rational behind deciding the priorities in tribal development.

To get tribal development some important plans started by Maharshtrain government in respective-cooperative societies, price support to trifled, village grain bank, educational schemes, tribal advisory council etc. There is a need of time to frame the various plans for tribals and strictly implement the plans for overall development.

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Digital India: An analysis of Key vision areas

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Abstract

The current population of India is 1.38 billion as per to official estimates. So it will be very default to face the largest population to provide Governance & services on demand, to empowerment of citizens etc. its solution is Digital India programme which was launched on 01 July 2015 by Govt. of India. In this paper, researcher used analytical research methodology to analysis the key vision of Digital India Programme. The secondary data was collected and interpreted during last five years. The first key vision area of Digital India was Digital infrastructure as a utility to every citizen, the government had made various initiatives such as Aadhar indentity platform, BBNL for Gram panchayats, CSCS for delivery of essential public utility services etc. The second key vision area is Governance & Services on Demand and third key vision Digital Empowerment of Citizens; the government has made various initiatives to achieve this visions.

Keywords: Digital India, empowerment, identity, Programme, economy, authenticable.

Introduction:

India is the second largest population Nation in the world with a sixth of world's population. The current population of India is 1.38

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billion as per to official estimates. So it will be very default to face the largest population to provide Governance & services on demand, to empowerment of citizens etc. The prime minister of India Narendra Modi was introduced Digital India programme on 1 july 2015 with a vision of to transform India into a digitally empowered society and knowledge economy. The Digital India programme is counters on three key vision areas: digital infrastructure as a Utility to Every Citizen, Governance & Services on Demand and Digital Empowerment of Citizens.

For achieving vision area Digital infrastructure as a Utility to every citizen, the government made a road map such as Availability of high speed internet as a core utility for delivery of services to citizens, Cradle to grave digital identity that is unique lifelong, online and authenticable to every citizen, Mobile phone and bank account enabling citizen participation in digital & financial space, Easy access to a common service center, Shareable private space on public cloud, Safe and secure cyber-space.

For achieving vision area Governance & services on Demand, the government made a road map such as Seamlessly integrated services access departments or jurisdictions, Availability of services in real time from online & mobile platforms, All citizen entitlements to be portable and available on the cloud, Digitally transformed services for improving ease of doing business, Making financial transactions electronic and cashless, Leveraging Geospatial information systems for decision support systems & development.

For achieving vision area Digital Empowerment of Citizens, the government made a road map such as Universal digital literacy, universally accessible digital resources, availability of digital resources/ services in Indian languages, Collaborative digital platforms for participative governance, Citizens not required to physically submit Govt. Documents/ Certificates.

Today, the digital India programme play the very important role in all sectors such as Digitalization of banking, service Industrial sectors etc. In this research paper only study about an analysis of key vision area i.e. Digital infrastructure as a Utility to Every Citizen, Governance & Services on Demand and Digital Empowerment of Citizens..

Research Methodology

The conducting the study and achieving objectives of study, analytical research methodologies are used.

Objectives of the study

The objectives of concern study are as follows.

1. To study about the concept of Digital India
2. To study the key vision area of Digital India
3. To study the achievement of Digital India with the help of key vision area.

Data Collection: This is an analytical study; hence, Secondary data is an impetrate and powerful tool for the any type of research. Researcher conducted his research work is on the basis of secondary data. The secondary data is collected through newspapers, magazine, government reports and internet.

Research area: The present study deals with the Digital India: its achievement in key vision area. It includes Digital Infrastructure as a Utility to every citizen, Governance and Service on Demand and Digital Empowerment of Citizens.

Limitations of the study: In this study, only focused on key vision area achievements of Digital India.

Digital India

Digital India is a important programme of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy. Digital India programme was launched by Prime Minister Narendra Modi on 01 July 2015. The prime aims of this program are to transform our country into a digital economy with participation from rural and urban citizens and businesses.

Vision of Digital India

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The vision of Digital India programme is to transform India into a digitally empowered society and knowledge economy.

Analysis of Initiative of the Government of India under Digital India

The Digital India programme is centered on three key vision areas. They are Digital infrastructure as a Utility to Every Citizen, Governance & Services on Demand and Digital Empowerment of Citizens. For achieve this vision, the Government of India made lot of initiatives. They can analysis it on the basis of three indicates I.e. Infrastructure, Governance and services and Digital empowerment of citizens.

1. Infrastructural initiatives

The government of India has made following infrastructural initiatives under Digital India programme.

· **AADHAR:** Aadhaar identity platform is one of the key pillars of Digital India. Under this every resident of the country is provided with a unique identity or Aadhaar number. As per the data, total 1.31 billion peoples have Aadhaar number and only 0.07 billion population have not a Aadhaar number.

· **BHARAT BROADBAND NETWORK (BBNL):** BBNL is a special purpose vehicle set-up under companies act by the Govt. Of India with an authorized capital of Rs. 1000 cr. Bharatnet is a largest rural broadband project, is to provide broadband connectivity to all the 2.5 lackhs Gram Panchayats.

· **CSC:** Common service center scheme is one of the initiative projects under the Digital India Programme. This project provide the access points for delivery of essential public utility services, social welfare schemes, healthcare, financial, education and agriculture services.

· **DEEN DAYAL UPADHYAYA GRAM JYOTI YOJANA:** it is the one of the infrastructural initiative of the power Ministry. This project is designed to provide continuous power supply to the entire rural India. Under this scheme, the government had decided to electrify 18452 unelectrified villages within 1000 days.

· **DIGILOCKER:** DigiLocker is Digital wallets which provide secure cloud based platform for issuance, sharing and verification of critical lifelong documents or certificates. It is helpful to empower citizens digitally. Currently, DigiLocker provides access to 131.45 Million registered users and 5.61 billion issued documents.

· **DIGITAL SAKSHARTA ABHIYAAN (DISHA):** it is a scheme has been formulated to impart IT training to 52.5 lack persons.

· **DBT:** Direct Benefit Transfer scheme is a one of the initiatives of government for processing in welfare scheme for simpler and faster flow of information/funds and ensure accurate targeting of the beneficiaries. As per data, in the financial year 2021-22, total direct benefit transfer was Rs. 630264 Cr , total no. of transaction was 717 Cr and 315 numbers of schemes was includes under.

Apart from that, the government of India lunched various schemes for Digital India programme i.e. digitize India platform, EBASTA, Electronic development fund, eSign, ESSO, eTrade, Government e-marketplace etc.

2. Governance & services on Demand

The government of India has made following Governance & services on Demand initiatives under Digital India programme.

· **BHIM:** Bharat interface for money is a government app that helps to makes payment transactions simply, easy and quick using Unified Payments Interface (UPI). Under this scheme, various users used this app for payment transactions.

· **AGRIMARKET APP:** This is a one of the services of the governments, which is helpful to farmers. Farmers can get information related to prices of crops in markets within 50km of their own device location using the AgriMarket App.

· **E-GRANTHALAYA:** It is a service initiatives of government, which is useful for automation of in-house activities of libraries and to provide various online member services. Under this

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schemes, total 2943 libraries installed this software and 977583 members are registed.

· **E-PANCHAYAT:** it is an e-Governance initiative for the rural sector providing comprehensive software solution attempting automation of Gram Panchayat functions. Currently, total 185975 GPs to which OFC connected & equipment installed.

Apart from that, the government provides various services to Governance & services on Demand such as E-hospital, e-District, ECI EVM tracking, eGreeting, EMSIPS, ENAM, eOffice, e-PATHSHALA etc.

3. Digital Empowerment of Citizens

The government of India has made following Digital Empowerment of Citizens initiatives under Digital India programme.

· **DIGIDHAN ABHIYAAN:** It is an initiative plans to enable citizens and merchants to undertake real time digital transactions through the DIGIDHAN Bazaar. Under this initiative, 2.05 Cr citizen registered under Digidhan and 5805 camps was organized.

· **BPO SCHEME:** It is a promotion scheme seeks to incentivize establishment of 48300 seats in respect of BPS/ITES operations access the country. At a current position, 57697 seats are allocated.

· **MYGOV:** It is a unique path for participatory governance involving the common citizen at large. It is a helpful to citizen engagement activities, consultations for policy formulation and also to disseminate information to citizens for various government schemes.

The government of India has always tray to empowerment of citizen. The government made other initiations apart from that for Digital empowerment of Citizen i.e. National mission on education using ICT, NEBPS, NREGASOFT, OPENFORGE, DBTL, PAYGOV INDIA, PMGDISHA, PMJDY, PMKVY etc.

Conclusion:

Digital India programme is a one of the successive program of the government of India. For analyzed the key vision of the Digital India programme, the govenement are succeed in digital infrastructure as a Utility to Every Citizen, Governance & Services on Demand and Digital Empowerment of Citizens. Currently, total 1.31 billion peoples have Aadhaar number, total 185975 GPs to which OFC connected & equipment installed, the government had decided to electrify 18452 unelectrified villages within 1000 days, DigiLocker provides access to 131.45 Million registered users and 5.61 billion issued documents, in the financial year 2021-22, total direct benefit transfer was Rs. 630264 Cr , total no. of transaction was 717 Cr and 315 numbers of schemes was includes under etc. But there is need to more initiatives in rural India for Digitalize India.

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समकालीन साहित्य आणि डॉ.आनंद यादव यांच्या निवडक कादंबरीतून चित्रित झालेले स्त्रियांचे प्रश्न

प्रा.राजा जगताप
मराठी विभाग,
रामकृष्ण परमहंस महाविद्यालय, उस्मानाबाद

प्रास्ताविक: समकालीन शब्द हा कालवाचक आहे. ''सम'' म्हणजे समान,समांतर,सोबत जे साहित्य काळाबरोबर असते व ते ज्या काळात निर्माण होत असते.त्या काळातील समाजाचे प्रतिबिंब त्यात पडलेले असते.त्या काळात ज्या घटना घडत असतात त्याचेच चित्रण त्या साहित्यातून येत असते.आणि आशाच साहित्याला समकालीन साहित्य म्हणता येईल. १९६० नंतरचे साहित्य खकृया अर्थाने समकालीन साहित्य मानले जाते.साठोत्तरी कालखंडातील दलित, ग्रामीण, स्त्रीवादी साहित्य हे काळाशी धरून वाटते.या समकालीन साहित्यामधून लोकांचे वास्तव जगणे चित्रित झाल्याने या साहित्याला महत्व आल्याचे दिसते.डॉ.आनंद यादव यांचे साहित्य हे समकालीनच आहे.त्यांनी आपल्या आत्मचरित्रापर कादंबकृयातून कुटुंबातील आई, बहिणी, आत्या यांचेच प्रश्न मांडले आहेत. व ते मांडताना त्यांनी कसलाही संकोच केलेला दिसत नाही.त्यांच्या निवडक कादंबकृयातील स्त्रीचित्रणाचा अभ्यास करूनच त्यांच्या निवडक कादंबकृयातील स्त्रियांचे प्रश्न या निबंधातून मांडले आहेत.

डॉ.आनंद यादव

यांचा जन्म कागल जिल्हा कोल्हापूर येथे ३० नोव्हेंबर १९३५ रोजी झाला. डॉ. आनंद यादव यांचे बालपण कागल या खेडेगावातच गेले त्यांचे वडील शेतमजूर होते यादवांचे पूर्वज कर्नाटकातून महाराष्ट्रात आले व कागल येथे स्थायिक झाले जकात वसुलीचे काम त्यांच्या पूर्वजाकडे होते म्हणून त्यांना कागल येथे जकाते म्हणले जाऊ लागले आनंदी यादव सुरुवातीला आनंद रत्नाप्पा जकाते असेच नाव लिहित होते पुढे दहावी पास झाल्यावर ते जेव्हा रत्नागिरी येथे गेले तेव्हा तेथील प्राचार्य भावे व पु ल देशपांडे यांचा सहवास त्यांना मिळाला आणि पुलच्या सांगण्यावरून जकाते हे पडणाव टाकून यादव हे मूळचे आडनाव धारण केले. आनंद रत्नाप्पा जकातेचे आनंद रतन यादव हे नाव झाले

आनंद यादव यांच्या वडिलांना कागल येथे शेती नव्हती ते तेथील मोठ्य शेतकऱ्याची भाडेपट्ट्याने जमीन करायचे पुढे'' कसेल त्याची जमीन कुळ कायदा आला ''परंतु त्या शेतीमालकाने यादवांच्या वडिलांची म्हणजेच दादाची फजगत करून जमीन काढून घेतली आणि यादवांच्या कुटुंबाच्या दारिद्र्यात खूपच भर पडली त्याच्या कुटुंबाला मजुरी करण्याशिवाय पर्याय उरला नाही त्यातच आनंदला शाळा शिकण्याचा नाद लागला आनंदाचं शाळेत जाणं परिस्थितीमुळे त्यांच्या वडिलांना आवडत नव्हतं परंतु आनंदाला कळले होते या गरीब परिस्थितीच्या कचाट्यतून सुटायचे असेल तर शिक्षण घ्यावेच लागेल शिक्षण घेण्यासाठी आनंदाने परिस्थितीची झोंबी घेतली शिक्षणाला झोमणे व परिस्थितीचे झोंबी घेणे या दोन्ही अर्थाने झोंबी या त्यांच्या आत्मचरित्रपर कादंबरीचे नाव सार्थ वाटते

मराठी ग्रामीण कादंबरी वाङ्ममयाच्या दृष्टीने १९८० ते १९९१ हा कालखंड अतिशय वैशिष्ट्यपूर्ण आहे या कालखंडात आनंद यादव यांची ''नटरंग'',रा. रं. बोराडे यांच्या ''सावट ''व ''चारापाणी'', डॉक्टर वासुदेव मुलाटे यांची ''वीस वृक्षाच्या मुळ्या'', विश्वास पाटील यांच्या ''पांगिरा''व'' झाडाझडती'', राजन गवसच्या'' भंडार भांडाभोग'' व ''चौंडक'' उत्तम बंडू तुपे यांची'' झुलवा'' बाबू बिरादार यांची ''कावड ''बाबाराव मुसळे यांची ''हल्या हल्या दूध दे'' मोहन पाटील यांच्या'' लिगाड'' व ''खांदेपालट'' पुरुषोनम बोरकर यांची ''कुणाच्या खांद्यावर ''या कादंबऱ्या प्रसिद्ध झाल्या होत्या १९८० ते १९९१ या कालावधीत पहिल्या पिढीतील ग्रामीण कादंबरी लेखन करणारे श्री व्यंकटेश

माडगूळकर, शंकर पाटील या कादंबरीकारांचे लेखन थांबले होते डॉ. आनंद यादव, बोराडे हे दुसऱ्या पिढीतील ग्रामीण कादंबरीकारांचे लेखन सुरू होते.

आनंद यादव यांचे कादंबरी लेखन १)" गोतावळा"(१९७१) ,२)" नटरंग "(१९८०), ३)" एकलकोंडा" (१९८०), ४)"माऊली "(१९८५),५)"झोंबी"(१९८७), ६)" नांगरणी "(१९९०), ७)" घर भिंती"(१९९२), ८) "काचवेल"(१९९७), ९)"कलेचे कातडे "(२००१), १०) "लोकसखा न्यानेश्वर "(२००५),११)" संत सार्थ तुकाराम"(२०१८).

आनंद यादव यांनी महाविद्यालयीन शिक्षण घेतानाच हिरवं जग काव्यसंग्रह लिहिला होता व त्याच दरम्यान त्यांनी पहिली एकलकोंडा कादंबरी लिहिली होती मात्र ती १९८० साली प्रसिद्ध केली. स्वातंत्र्योत्तर काळात यांत्रिकीकरण आले आणि खेडी बदलू लागली ग्राम संस्कृतीच्या ऱ्हासाला सुरुवात झाली यंत्राचा शेतात प्रवेश झाला आणि गोतावळ्यात आपला जीव गुंतून असणाऱ्या नारबाच्या दुःखाचा शेवट झाला डॉक्टर आनंद यादव यांनी साहित्याची विविध प्रकार हाताळले वेगवेगळे अनुभव विश्व त्यांनी आपल्या साहित्य कृतीत हाताळले ''परंतु आपण ग्रामीण लेखक आहोत याचे भान त्यांनी कधीही दृष्टीआड होऊ दिले नाही''१ '' असे रवींद्र ठाकूर यांनी लिहिले आहे .

समकालीन समाजाचे चित्रण यादवांच्या कादंबरीतून आले आहे .स्त्री ही समाजाचाच एक महत्त्वाचा भाग आहे ग्रामीण स्त्रियांचे जीवन व त्यांच्या समस्या आणि प्रश्न आले आहेत .त्यांच्या ''झोंबी '',''नांगरणी'','' घर भिंती''या आत्मचरित्रिपर कादंबरी आहेत यादवांची आई तारा तिला झालेला सासुरवास त्यांच्या बहिणीला झालेला त्रास त्यांच्या दोन अत्यांना भोगाव लागलेला त्रास या त्यांच्या घरातील स्त्रिया यांच्या व्यथा, वेदना त्यांनी मांडले आहेत .''नटरंग ''मधील दारकांचे उध्वस्त जीवन आले आहे अशा पद्धतीने त्यांनी ग्रामीण भागातील स्त्रियांच्या समस्या व प्रश्न कादंबऱ्यातून चित्रित केलेले आहेत.''झोंबी ''(१९८७) आनंद यादव यांची पहिली आत्मचरित्रात्मक कादंबरी आहे. आई, तारा त्यांच्या बहिणी दोन,आत्या या घरातील स्त्रियांना सोसावा लागलेला जाच, त्रास, सासुरवास मग त्या सासर असो की माहेर जन्मापासून स्त्रियांना मिळणारी दुय्यम वागणूक स्त्रियांना उपसावे लागणारे कष्ट याचे चित्रण त्यांनी झोंबी कादंबरीत केले आहे व स्त्रियांच्या समस्या मांडलेल्या आहेत झोंबीची सुरुवातच स्त्री अन्यायने होते यादवांची आई एका वर्षाची असतानाच लग्न होतं या प्रसंग प्रसंगाने झोंबीची सुरुवात करताना ते लिहितात ''तारांचं लग्न झालेलं ताराला माहित नाही ती एक वर्षाची आसतानाच लग्न झालं तिच्या पाळण्यालाच बाशिंग बांधलं होतं .रतना त्यावेळी आठ नऊ वर्षाचा होता.''२ ''यादवांच्या आईचे म्हणजे ताराचं नांदण सहा सात वर्षांचा असताना सुरू झालं सासूच्या हाताखाली कामे करून तिचा जीव केंगाटून जात. ननंदा तिलाच कामे सांगत ताराच वय लहान असल्याने व होणाऱ्या त्रासामुळे ती माहेरी पळून जात तेव्हा तिचा रागीट नवरा रत्नू तिला चाबकाने मारत परत घरी आणत असे ..प्रसंगी तिचे डोके फोडत असे. अशा यातना सहन करत ताराला एकूण बारा मुले झाली अशा पद्धतीने आनंद यादव यांनीच आपल्या आईची समस्या प्रश्न झोंबी मध्ये मांडली आहे.

आनंद यादव चौथीला असताना त्यांना दोन जुळ्या बहिणी झाल्या,सदस्य संख्या लेकरांची सात झाली लोक हसायले,तवा दादांनी म्हणजेच रतनने ताराला ओली बाळांतीन असताना बाजावरच बदडलं रक्तबं बाळ केलं ताराला नवऱ्याकडून सातत्याने मारहाण होत होती.तेंव्हा तिने तीनदा जीव देण्याचा प्रयत्न केला या संदर्भात यादव लिहित ...''दादाच्या या माराला आणि आडव्या उभ्या जाताला कंटाळून आई तीन—चार वेळा विहिरीत पडायला गेली होती पण आमच्या सुदैव की, ज्या शेतकऱ्यांच्या विहिरी वरती जाई तिथे नेमकं कुणाच्यातरी नजरेला येई आणि तो शेतकरी तिला घरापर्यंत आणून पोचवी.'' ''३''

झोंबीमध्ये यादवांची आत्या आखणी म्हणजेच रत्नाची बहीण हिला खूपच सासुरवास असल्याने ती, माहेरला पळून येत असे. परंतु आई—वडिलांच्या नावासाठी मुलीने प्राण गेला तरी सासरीच नांदले पाहिजे अशी माहेरच्यांची मानसिकता होती. बहिणीने नांदायला जावं म्हणून रतनुने उलथन्याने डागले होते व सासरला सोडले होते आखणीला माहेरात सारा नाही हे लक्षात आल्यावर त्यांनी ''आतनीचा खूपच छळ केला

तिला उपाशी ठेवलं घरात कोंडलं आखणीच्या मरण यातना सुरू झाल्या .तिचा नवरा रतनूला लग्नाचा खर्च मागायला. तुमची बहीण मेली तर आम्ही जबाबदार नाही म्हणायला.चार दिवसात आलास तर बरं नाहीतर तिच्या जीवाचं बरं वाईट झालं तर आम्ही जबाबदार नाही.''''४'' तेव्हा रतनुने पोलिसात तक्रार केली उपयोग झाला नाही आखणीची अवस्था जोंधळ्याच्या घाटागत झालती शेवटी रत्नाने अखणीला बैलगाडीत घालून गावी आणलं असा सासर वास यादवांच्या बहिणीला झाला होता .याचे चित्रण ''झोंबी'' कादंबरीत आले आहे यादवांच्या आईने आपल्या आंनसा या अकरा वर्षाच्या पोरीचा विवाह १४ ते १५ वर्षांनी आनसा पेक्षा मोठा असणाऱ्या भावाबरोबर करून दिला होता कारण भावाला वाटणीवर आणता येईल भावा बरोबर संबंध चांगले राहतील या ठिकाणी तारा आपल्या मुलीचे हित पाहाण्यापेक्षा भावाचेच हित पाहते आणि पोरीला दुय्यम लेखते हे दिसते.आणसाचा नवरा हा आळशी होता परंतु आणसावर बालवायातच लग्न करण्याची वेळ आलती.आणसाच्या दु:खाला आई जबाबदार असल्याचे चित्रण येथे दिसते .झोंबी कादंबरीतील स्त्री चित्रणाचा व स्त्री समस्याचा अभ्यास केल्यावर असे दिसते की स्त्रीचे जीवन दुय्यम दर्जाचे होते पुरुष वर्ग स्त्रीचा फक्त वापरच करून घेतो व स्त्रीला कस्पटा समानच समजतात परंतु आपल्या वाटेला जे आलं ते आपल्या पोरीच्या वाट्याला येऊ नये अशी ताराची भूमिका झोंबी कादंबरीत दिसत नाही पारंपारिक संस्कृतीचा पगडा या स्त्री व्यक्ती रेखातून दिसते. तारा आपल्या पतीचा म्हणजेच नवऱ्याचा रत्नूचा भरमसाठ मार खात लेकरांना वाढवते पण रत्ना जेंव्हा आजारी पडतो तेव्हा त्याची आखरीला देखरेख करते.

'' नांगरणी'' (१९९०) झोंबी कादंबरी नंतर आनंद यादवांची नांगरणी ही आत्मचरित्रपर कादंबरी प्रसिद्ध झाली नांगरणी कादंबरीची सुरुवात आनंदा एस एस सी पास झाला या बातमीने होते या कादंबरीत यादवांचे एम ए पर्यंत शिक्षण कसे पूर्ण झाले ते सांगितले आहे . कादंबरीत आई तारा, आत्या, बहीण या घरातील स्त्रियांच्या व्यक्तिरेखा दु:ख भोगणाऱ्या आहेत व पुरुषी वर्चस्वाखाली त्या चिरडल्या गेल्या आहेत हे स्त्रियांचे प्रश्न त्यांनी मांडले होते. नांगरणी कादंबरीतही स्त्री व्यक्तिरेखांची हीच अवस्था झाली आहे व त्याच पद्धतीच्या स्त्रियांच्या समस्या त्यांनी मांडलेल्या आहेत .नांगरणी कादंबरीतील स्त्री चित्रणाचा अभ्यास करताना व स्त्रियांचे प्रश्न समजून घेताना स्त्रीयांच्या व्यक्तिरेखा लक्षात राहते ती म्हणजे आनंद यादव यांची बहीण धोंडाबाई ती दिसायला सुंदर आहे ती जेव्हा लग्नाला आली होती तेव्हा हुंडा द्यायला पैसे नाहीत म्हणून सिद्ध नेली गावचा एक मळकटलेला सालगडी दिसावा तसा पोरगा होता त्या पोराला आईने धोंडा बाईला द्यायचा विचार केला होता यादव आपल्या धोंडा बाईला विचारतात तुला मुलगा पसंत आहे का तेव्हा धोंडाबाई म्हणते ,''आईला पसंत आहे नव्ह मग तिच्या मोरे माझं काय चालणार तिला घरात पोरी ठेवायच्या म्हणजे तुरुंगाच्या दारूचे कोठार ठेवल्यागत वाटतय तिला लेकी जर झाल्या जन्मला तवाच एकाएकीच्या गळ्याला नक लावून का?मारलं नाही.''''५''

आनंद यादव आईला सांगतात धोंडूला हा मुलगा पसंत नाही तेव्हा आई तारा म्हणते...'' तू आनंद्या आता शिकून शहाणा व्हायला लागलायस पसंती ना पसंती भट बामनाच्या शिकल्या सवरल्यांच्यात चालतील इथं कुण्या कष्टकऱ्यांच्या घरात चालत नाही. ''''६''

शेवटी धोंडाबाईचे लग्न त्या आळशी पोराबरोबर होते धोंडाबाईचा नवरा एका देवरास्नीच्या नादाला लागतो धोंडाबाई परत माहेरी येते धोंडा बाईच्या नवऱ्याचा मृत्यू होतो धोंडाबाईचा पुनर्विवाह होतो नांगरणी कादंबरीत धोंडाबाईला स्वत:च्या मनाने नवरा निवडता येत नाही तिची तिला किंमत मोजावी लागते धोंडाबाई या स्वत:च्या बहिणीची व्यथा येथे याद्वारे यादव चित्रित करतात व बहिणीच्याही समस्या मांडून एकंदरीत स्त्री समस्याला त्यांनी वाचा फोडलेली दिसते आहे .

''घर भिंती ''(१९९२) यादवांच्या मामांनी आपली पोरगी अक्काताई आनंद यादवलाच द्यायची म्हणून यादवावर दबाव टाकला होता परंतु मामाची मुलगी म्हणजे मामे बहीण सख्या बहिणीसारखीच असते म्हणून लग्न करण्यास नकार दिला तेव्हा मामा म्हणतो. .''तू अक्काताई संग लगीन कर दोन—तीन वरस काय

होते ते बघू आणि नाहीच तुला तिच्याबद्दल बायकोपणाची भावना वाटली तर मग दुसरं लगीन कर एकाला दोन बायका असल्या तर तोटा नाही एक हित कागलला, आकाच्या ताराच्या आईच्या हाताखाली राहील आणि दुसरी तुइया संग नोकरीच्या जागी येईल एक नोकरी करल नी दुसरी घरदार सांभाळेल याचा विचार कर मला उद्या काय ते सांग .''''७''

मामा स्वत:ची पोरगी करण्यासाठी आपल्या मुलीचा वापर कसा करतो तेथे स्पष्ट होते यादवांची बहीण सुंदरा हिला सौंदलगे गावी दिले होते तिचा नवरा आळशी होता त्याला वडील नसल्याने त्याच्या आईने लाडाने सांभाळले होते सुंदराला सासू कामाला लावत काम नसल्यावर तिला उपाशी ठेवत असत नवरा नेहमी मारत असत. सुंदराला खूपच त्रास होत असे. सुंदरला दररोज, चार पाच मैलावर मळा होता तेथे कामाला जावं लागायचं सुंदराचे हाल मामाच्या बायकोला पाहवेत नव्हते म्हणून तिने आठवड्यतून एकदा घरी जाण्या सांगितलं तेव्हा सुंदराचा नवरा म्हणाला ...''मला भाड खाऊ घालतेस काय रांडे ह्या कडूच्या मळ्यात कशाला राहिली थेट चल घराकडे आधी.'''' ८'' तेव्हा सुंदरा माहेराला येथे परंतु आई घराला कुलूप लावते आणि यादवाला सांगते हिला सौंदग्याला घेऊन जा. तेव्हा यादव सुंदराला सौंदग्याला घेऊन जायला तयार हो म्हणतो. तेव्हा सुंदरा आपल्याला जाच व सासुरवास कसा होतो ते भावाला म्हणजे आनंदला सांगते अखेर सुंदरा नवऱ्याच्या व सासूच्या त्रासाला कंटाळून वेदगंगा नदीच्या पुरात उडी टाकते म्हणजेच आत्महत्या करते आत्महत्या करण्यापूर्वी सुंदर गळ्यातील मंगळसूत्र, जोडवे, विळा नदीच्या काठावर ठेवते अशा पद्धतीने यादवांनी आपल्या बहिणीचीच समस्या प्रश्न या कादंबरीत अधोरेखित केलेले आहेत यादवांच्या पाठीवरची बहोण हिराबाई हिला घरातील मस दररोज राखावी लागत असत एक दिवस मस लवकर घरी घेऊन आली तर आई तिला मला मारत असे सेंन झालोट तिलाच करावी लागत असे एके दिवशी हिरा ढेखना मरायचं औषध घेते आणि आत्महत्या करते आणि आपली जीवन यात्रा संपवते हे यादवांनी आपल्या बहिणीचा प्रश्न याही कादंबरीत चित्रीत केलेला दिसतो.

''नटरंग''(१९८०) आनंद यादव यांची नटरंग कादंबरी १९८० साली प्रसिद्ध झाली या कादंबरीचा नायक गुना आहे .एकेकाळी पैलवानगडी सुरुवातीला मजुरी करत तमाशा पाहतो आणि सवंगड्यला सोबत घेऊन तमाशाचा फड उभा करतो तमाशा जुळवा जुळव करतो बऱ्याच खटपटीतून तमाशासाठी दोन पोरी मिळतात त्यातील जी मुख्य असते तीच गुणाला नाच्याची भूमिका करायला लावते आणि त्यातूनच गुणाच्या शोकांतिकेला सुरुवात होते. ''आपलं पोरगा तमाशात नाचा झालं हे गुणाच्या बापाला म्हणजेच बाळू मांगाला सहन होत नाही तेव्हा तो गळफास लावून जीव देतो. ''''९'' आई,पत्नी सासरा सगळ्यांच्या विरोधात गुणा तमाशातील नाच्या साकार करतो गुणा नटरंग कादंबरीत कलेजी जोपासना करण्यासाठी तमाशात नाच्याची भूमिका करतो परंतु समाज त्याला कलाकार म्हणण्याऐवजी, नाच्या, फलक्या म्हणतो. गुणामुळे त्याच्या बायकोची म्हणजेच दारखेच्या दु:खाला सुरू वात होते.या संदर्भात यादव लिहितात... ''दारखेला कळून चुकलं की गुणा काही तमाशा सोडत नाही मी आपल्या नशिबाचा एकट्य जगणं संपत नाही तिचं मन दूर जाऊ लागलं उदासून ती मुलांना सांभाळण्यात येणाऱ्या दिवस रात्रीला तोंड देत झोप लागली ''''१०''

दारकी उसाकडेला शेळी चारताना मळ्याचा मालक उदाजी घाटगे दारखेला पाहतो एकटीला पाहून तिची छेड काढतो गड्य करवी तिची शेळी खोपेकडे आणायला लावतो व गड्यकरवी दारकेला पाठवायला सांगतो दारकी जेव्हा वाड्यवर जाते तेव्हा तिची विब्रत तो लुटतो अशा पद्धतीने दारकी सगळं सहन करते व तक्रार कुठे करत नाही नवऱ्याच्या वागण्यामुळे तिच्यावर हा प्रसंग ओढवतो ही समस्या आनंद यादव यांनी दारकीच्या माध्यमातून नटरंग कादंबरी मध्ये मांडलेले दिसत त गुणा तमाशाचा फड उभा करतो खेळ चांगला चालतो आणि एका दिवशी त्याच्यावरच तमाशावर हल्ला होतो गुणा नाच्यावर जबरदस्ती केली जाते याच्या बातम्या दुसऱ्या दिवशी पेपरातून येनात दारकी आपली मुले घेऊन कायमची माहेरी जाते गुना व त्याचे तमाशा सवंगडे कलाकार निराशा घेऊन आपल्या

घरी परततात गुणा उध्वस्त मनाने घरी जेव्हा येतो तेव्हा त्याची बायको पोरं दारखेच्या माहेरी गेली असतात. गुणा सासरवाडीला दारखेला पोरांना परत आणण्यासाठी जातो मात्र सासरा, पोरं ,दारका गुणाबरोबर जाण्यासाठी नकार देतात वैतागून दारखी गुणाला म्हणते ... ''बायलिच्या अब्रूला हात घालणाऱ्याचं मनगट धरायचं न्याट हाय का हेमल्या तुझ्यात.तुकड्याला भूलून येणारी कुत्री नव मी जा तिकडे गावाला गांड दावत हिजड्यगत नाचून पोट भर जा .''''११''

समारोप : आनंद यादव यांच्या एकूण ११ कादंबऱ्या असल्या तरी माझ्या शोधनिबंधाचा विषय समकालीन साहित्य आणि डॉ. आनंद यादव यांच्या निवडक कादंबरीतील स्त्रियांचे प्रश्न हा विषय असल्याने आनंद यादवांच्या झोंबी,नांगरणी, घरभींती या आत्मचरित्रपर कादंबऱ्या व नटरंग या कादंबऱ्यातील स्त्री समस्यांचा विचार केला आहे. आनंद यादव आणि त्यांच्या आत्मचरित्रपर कादंबऱ्यातून आई तारा,बहिणी सुंदरा ,हिरा आत्या आखणी, या घरातील स्त्रियांच्या दु:खाना वाचा फोडली आहे व त्यांचे दु:ख,व्यथा वेदना मांडल्या आहेत तर नटरंग कादंबरीत मांगवड्यतील तमासगीर गुणा यांची शोकांतिका मांडताना गुणाची पत्नी दारकीचे दु:खद जीवन कहाणीतून सांगितले आहे नवरा नाच्या झाल्यावर समाजाचं कसं ऐकून घ्यावं लागतं निंदा नालस्ती कशी सहन करावी लागते व नवरा नाच्या झाल्याने गावातील चांगला सदन असणारा उदय घाटगे दारकीची अब्रू कशी लुटतो, दारकीला वाच्याताही करता येत नाही शेवटी दारकीला नवऱ्याचे घर, गाव सोडून कायमची माहेरी जाते व तिथेच कष्ट करून लेकरांना वाढवण्याचा संकल्प करते गुणा दारकीला परत आणण्यासाठी जातो परंतु दारकी व पोरं स्पष्ट नकार देतात. मातंग समाजातील दारखेचं चित्र नटरंग मध्ये आल्याने यादवांची नटरंग कादंबरी वेगळी ठरते. यादवांच्या कादंबरीतील स्त्रियावर पुरुष अन्याय करतात. परंतु स्त्रिया ही स्त्रियांवर अन्यायाच करतात. या समस्या त्यांच्या कादंबऱ्यातून दिसतात यादवांची आई तारा, तीनदा विहिरीत पडायला गेली होती. आखणीही सुद्धा सासुरवासाला कंटाळली होती तिची मरण यातना यादव यांनी झोंबीत मांडलीच आहे.नांगरणीत यादवांच्या बहिणीला धोंडाबाईला स्वत:च्या मनावर नवरा निवडता येत नाही तिलाही सासुरवास सहन करावा लागतो त्यातच तिचा नवरा मरून जातो धोंडाबाईचा पुनरनिर्वाह केला जातो. घरभिंतीमधील यादवांची बहीण सुंदरा हिला जाच होतो तेव्हा ती वेद गंगेच्या पुरात आत्महत्या करते. तर हिराला स्वत:च्याच म्हणजेच यादवांच्या बहिणीला घरातच शेरडं,म्हैस रोज राखावी लागतात त्यात आईच त्रास देते तेव्हा हिरा ढेकण मारायचे औषध घेते आणि झोपेतच मरून जाते. यादवांच्या घरातील या स्त्रिया असल्या तरी समकालीन जीवनातील दु:ख भोगणाऱ्या प्रातिनिधिक स्त्रिया आनंद यादवांनी त्यांच्या कादंबऱ्यांमधून चित्रित केलेल्या दिसतात आणि स्त्रियांचे प्रश्न त्यांनी मांडलेले दिसतात अशा प्रकारे यादवांनी आपल्या कादंबऱ्यातून स्त्री व्यक्तिरेखा चित्रित करत असताना त्यांच्या समस्या, त्यांचे प्रश्न कादंबरीतून मांडलेले आहेत .

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डॉ.बाबासाहेब आंबेडकर मराठवाडा विद्यापीठ,औरंगाबाद संलग्नित,

तेरणा पब्लिक चॅरिटेबल ट्रस्ट संचलित,

तेरणा महाविद्यालय (कला,विज्ञान व वाणिज्य),उस्मानाबाद.

अंतर्गत गुणवत्ता हमी कक्ष व मराठी विभाग आयोजित

एक दिवसीय आंतरराष्ट्रीय चर्चासत्र (आभासी)

शनिवार दि.०४ फेब्रुवारी,२०२३

प्रमाणपत्र

प्रा./डॉ./श्री./श्रीमती राजा जगताप, मराठी विभाग, रामकृष्ण परमहंस महाविद्यालय, उस्मानाबाद, यांनी अंतर्गत गुणवत्ता हमी कक्ष व मराठी विभाग आयोजित **समकालीन साहित्य आणि समकालीन प्रश्न (विशेष संदर्भ २००० नंतरचे साहित्य)** या विषयावर आयोजित एक दिवसीय आंतरराष्ट्रीय चर्चासत्रामध्ये (आभासी) अध्यक्ष/बीजभाषक/विषयतज्ञ/शोधनिबंधवाचक/प्रतिभागी म्हणून योगदान दिले. त्याबद्दल सन्मानपूर्वक सदर प्रमाणपत्र आपणास प्रदान करण्यात येत आहे.

डॉ.रशीद सय्यद	डॉ.तुळशीराम उकिरडे	डॉ.भारत हंडीबाग	डॉ.अशोक घोलकर
समन्वयक IQAC	समन्वयक,मराठी विभाग	समन्वयक,मराठी विभागप्रमुख	प्राचार्य तेरणा महाविद्यालय (कला,विज्ञान व वाणिज्य), उस्मानाबाद

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डॉ शंकर शेष रचित 'रक्तबीज' नाटक में मिथकीय चेतना:-

प्रा. डॉ माधुरी प. सोनटक्के

रामकृष्ण परमहंस महाविद्यालय उस्मानाबाद

समकालीन हिंदी नाटक में शिल्प को गतिशील बनाने केलिए कथानकके स्तर पर जो प्रयोग किए गए है उनमें मिथक प्रयोग सर्वाधिक उल्लेखनीय है।आधुनिक मनुष्य के संकट को अभिव्यक्त करने केलिए समकालीन नाटककारोंने महाभारत ,रामायण और उपनिषद के पात्रों,प्रतिकों,कथाअर्थोंएवं जीवन संदर्भोंका भरपूर उपयोग किया है क्योंकिइसमेंउन्हे समकालीन प्रासंगिकता को व्यक्त करनेकेलिएएक विस्तृत कॅनवास प्राप्त हुआ ।वास्तव में मिथक योजना के द्वारा रचनाकार उस काल के पात्र व कथानक को आधुनिकता या समकालिकता की अभिव्यक्ति केलिएप्रयुक्त करता है ।१

डॉ शंकर शेष ने मिथकीय चेतना और यथार्थ के आधार पर रक्तबीज नाटकी कथावस्तु का सृजन किया है । रक्तबीज डॉ शंकर शेष का एक सशक्त और बहुचर्चित नाटक है ।इस नाटक में डॉ शंकर शेष ने पुराणकालीन एक राक्षस के माध्यम से वर्तमान युग की विसंगत परिस्थितियोंमें जीने वाले मनुष्य की विडंबनात्मक स्थिति को आंकने का प्रयास कियाहै।नाटक में हत्या और आत्महत्या के भेद तथा कारणों को स्पष्ट करते हुए महानगरीय उच्चमध्यमवर्ग के लोगों की मनोवृत्ति को सामने लाते हुए दो घटना को हमारे समक्ष प्रस्तुत किया है। प्रथम घटना के अंतर्गत मि. शर्मा एक मध्यमवर्गीय परिवार का आदमी है ,जो एक दफ्तर मे असिस्टंट की नोकरी करता है। उसकी पत्नी सुजाता भी किसी दंत मंजन कंपनी में नोकरी करती है। मि. शर्मा का बॉस मि. माथूर भार्गव है और अपने बॉसको खुश करके वह असिस्टंट मॅनेजर की पोस्ट पाना चाहता है,वैभवसंपन्न जिंदगी हासिल करना चाहता है ।इसलिये वह मि. भार्गव को शराब पीने अपने घर पर आमंत्रित करता है , अपनी पत्नी को भी उसे सौप देता है। इस के बदले मे मि. शर्मा का बॉस उसका प्रमोशन करता है, सुजाता को अपनी स्टेनो बना लेता है। इसी बीच सुजाता माथूर भार्गव से प्रेग्नंट रह जाती है ,बाथरूम मे पैर फिसल कर गिर पडने से उसका बच्चा मर जाता है ।मि. शर्मा सुजाता की तरफ बिल्कुल ध्यान नहीं देता ।सुजाता का उसके पतिने एक रस्ते की तरह इस्तेमाल किया था ।बॉस का इस्तेमाल करने केलिएवह मेरा (सुजाता का) इस्तेमाल करना चाहता है , है तो वह खतरनाक खेळ ।2

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दूसरी घटना में डॉ. शंतनु एक मेधावी वैज्ञानिकहै। उसने ग्यारह साल की घोर तपस्या करके अपना एक रिसर्च पेपर तयार किया है ।वह अपना संशोधनडॉ. गोयल जो उसका डायरेक्टर हे द्वारा भेजना चाहता है , लेकिन डॉ. गोयल शंतनु का इस्तेमाल करके उसके रिसर्च पेपर पर शंतनु के नाम के उपर अपना नाम छपवा कर प्रसिद्धि प्राप्त करताहै, इसके बदले में शंतनु का प्रमोशन करवाता है, उसका कार लोन सँक्शन करवाता है , उसे बंगला देताहै, उसे तीन महिने की लंबी छुट्टी पर भी भेज देता है। अखेर शंतनु को धोखे का पता चला जाताहै। इस घटना से शंतनू अस्वस्थ होकर पहले आत्महत्या करने की कोशिश करता है, परंतु पत्नी के समझाने पर वह डॉ. गोयल की हत्या करने निकलता है, लेकिन शंतनु द्वारा हत्या करने से पहले ही डॉ. गोयल आत्महत्या कर लेता है ।

प्रस्तुत नाटक में केवल तीन ही पात्र है ।दो पुरुष पात्र और एक स्त्री पात्र ।इन तीनोंने अलग अलग भूमिका निभाई है। व्यक्ति एक ने मि. माथूर भार्गव तथा गोयल की भूमिका निभाई है । व्यक्ति दो ने मि. शर्मा तथा डॉ.शंतनु की भूमिका निभाई है ।व्यक्ति तीन ने सुजाता तथा ललिता की भूमिका निभाई है ।व्यक्ति एक प्रथम घटना के अंतर्गत मि. भार्गव बनकर हमारे सामने आता है , वह मि. शर्मा का बॉस है। वस्तुतः देखा जाय तो मि. भार्गव आधुनिक रक्तबीज का प्रतीक है, रक्तबीज की सभी प्रवृत्तियाँ उसमे विद्यमान है। मि. शर्मा को प्रमोशन तो देता है परंतु उसके बदले में उसकी पत्नी सुजाता का लैंगिक शोषण करता है , सुजाता को अपनी स्टेनो बना लेता है , उसकी सभी जरूरते पूरी करता है ।

द्वितीय घटना के अंतर्गत यही मि. भार्गव डॉ. गोयल बनकर हमारे सामने आता है। यह डॉ. गोयल डॉ शंतनु का इस्तेमाल करता है ,डॉ. शंतनु द्वारा लिखित शोधप्रबंध अपने नाम से फॉरवर्ड करता है और प्रसिद्धि पाता है ।इसके बदले मेंशंतनु की सभी जरूरते पूरी करता है। शंतनु को सच्चाई का पता चलने पर जब शंतनू उसकी हत्या करने से पहले ही वह आत्महत्या कर लेता है और अमरबन जाता है ,मृत्यू का इस्तेमाल करने का इससे अच्छा मोका और क्या हो सकता था। जीवनभी सार्थक मृत्युभी सार्थक। दो दो कारणोंसे लोग पूजा कर रहे है उसकी 3

व्यक्ति दो प्रथम घटना के अंतर्गत मि. शर्मा तथा द्वितीय घटना के अंतर्गत डॉ. शंतनु की भूमिका निभाता है। मि. शर्मा दुनिया के सभी सुख पाने केलिए अपनी खुद की पत्नी को अपने बॉस के हाथों सौप देता है, परंतु वह यह नहीं समझ पाता कि अपनी पत्नी का इस्तेमाल करते करते वह खुद भी तो अपने बॉस के हाथों इस्तेमाल हो रहा है ।मि. शर्मा भी आधुनिक

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रक्तबीज का प्रतीक है,उसमें रक्तबीज की वह सारी प्रवृत्तियाँविद्यमान है, जो अपने स्वार्थ की पूर्ति केलिए किसीभी स्तर तक गिर सकता है।4दूसरी घटना में यहीमि. शर्मा डॉ. शंतनु के रूप में प्रस्तुतहोता है। वह एक वैज्ञानिक है, नित्य नयीखोजमेंलगा रहता है। उसनेग्यारह वर्ष की कठोर तपस्या करके एक शोधप्रबंध तैयार किया है ,जिसे धोके से डॉ. गोयल अपने नाम से छपवादेता है और प्रसिद्धी प्राप्त करता है ।डॉ. शंतनु आत्महत्या पर उतारू हो जाता है, परंतु पत्नी के समझाने पर डॉ गोयल की हत्या करने उसके घर जाता है , परंतु इससे पहले ही गोयल आत्महत्या कर लेता है ।

व्यक्ति तीन प्रथम घटना के अंतर्गत मि. शर्मा की पत्नी सुजाता की भूमिका निभाती है। द्वितीय घटना में वह डॉ. शंतनु की पत्नी ललिता की भूमिका निभाति है। प्रथम घटना के अंतर्गत बॉस के द्वारा इस्तेमाल होने के कारण आत्महत्या कर लेती है, परंतु दूसरी घटना के अंतर्गत बॉस द्वारा इस्तेमाल हुआ पति जब आत्महत्या की कोशिश करने लगता है तबपने पति को सच्चाई का पाठ पढाके डॉ. गोयल की ही हत्या करने केलिएउकसातीहै।

वस्तुतः रक्तबीज नाटक का मूल उद्देश महानगरों में रहनेवाले उच्च मध्यवर्गीय लोगों की मनोवृत्ति का पर्दाफाश करना है।डॉ. शंकर शेष हमारे में जी रहे रक्तबीजोंसे आपना परिचय करा देना चाहते है।उनका कहना है कि अब आप उस रक्तबीज से निपटिये , अगर नहीं निपट सकते तो किसी दैवी शक्ति के अवतार का इंतजारकीजिएया अपने भीतर उस दैवी शक्ति की अवतारणा कीजिए। वर्तमान समाजजीवन में हर कोई एक दूसरे का इस्तेमाल करता नजर आ रहा है , बडा बनने की होड में तथा अपनी प्रतिष्ठा केलिए अपने से छोटे का इस्तेमाल किया जा रहा है और छोटा भी अपनी महत्वाकांक्षा के कारण ऐस प्रलोभन का स्वीकार कर रहा है। इस प्रकार से यह एक दूसरे का इस्तेमाल करने का सिलसिला चला रहा है।महत्वाकांक्षा क्रूरता की सबसे बडी रखेल होने पर भी आज महानगरीय जिंदगी में प्रतिष्ठा, बडपन और महत्वाकांक्षा रुपीजीवाणू मध्यवर्गीय लोगों के रक्त के बीज बनेहुऐ है ।इस कारणइनको अलग करना नामुमकिन हो गया है ।मानवी जीवन की इस विभिषीका को डॉ. शंकर शेष ने बडे हे मार्मिक ढंग से दो कथाबिजोंके माध्यम से प्रस्तुत किया है ।इस संदर्भ में प्रताप सहगल का कथन इस प्रकार हे , "लेखक ने राक्षसी वृत्ति के घटाटोप में न पडकरआदमी के अंदर बैठी एक आदिम वृत्ति को आज के परिवेश में देखने की कोशिश की है ।5हत्या और आत्महत्या के भेद को स्पष्ट करते हुए लेखक कहते है कि, कोई भी व्यक्ति मानसिक और नैतिकरूप से अपने आप को मार डालता

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है तभी वह मौलिक रूप से दूसरों को मार सकता है अर्थात पहले आत्महत्या ही होती है और उसके बाद हत्या ।अत: कुल मिलाकर जिंदगी का सत्य हत्या ही तो है।

इस प्रकार उपर्युक्त दो कथाबीजोंके माध्यम से डॉ. शंकर शेषने हमारे समाज को घिरे रक्तबीजोंसे हमारा परिचय करने की कोशिश कर , मिथकीय चेतना का सुंदर उदाहरण हमारे समक्ष प्रस्तुत किया है।

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A Study of Pundalik Naik's novel *The Upheaval* in the Light of Ecocriticism

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Abstract:

The portrayal of nature in Indian English fiction reflects the cultural, social, and political dimensions of the Indian experience. The representation of nature in Indian literature often reflects the complex relationships between humans and the environment, as well as the environmental challenges that India faces. In many Indian English novels, the natural world is seen as a symbol of both beauty and danger, reflecting the ambivalent relationship between humans and the environment. Literature, the most popular form of culture, has affected by this indispensable theme of man and his physical environment, human and non- human relations.Ecocritical analysis refers to the study of the relationship between literature and the environment, including the impact of human activities on the natural world. An ecocritical analysis of "The Upheaval" would examine how the book portrays the relationship between humans and the environment and the impact of human activities on the natural world. It would look at themes such as sustainability, conservation, and the relationship between humans and nature.Pundalik N. Naik's 'The Upheaval' (1977) which was the first Konkani novel to be translated into English, describes peasant life in the Ponda [sub-]district and shows what happens when a traditional society that lives by myths and rituals comes into contact with modern mechanised ways of life. The novel starkly depicts the ruthless intrusion of men and machines into the idyllic environs of a rural community and the gradual erosion of its natural habitat, social fabric as well as cultural ethos.

Key words: Eco criticism, environment, forest, nature, Industrialization

Ecocriticism is a relatively new field of study that first arose as a concept in the late 1970s. It was developed in response to the growing environmental crisis of the time and the recognition of the need for a more interdisciplinary approach to the study of literature and the environment. The concept of ecocriticism was born out of a growing awareness of the ways in which human activities were impacting the natural world and recognition of the importance of literary representations of the environment in shaping cultural attitudes and behaviours towards the environment.

The word 'Ecocriticism' first appeared in William Rueckert's essay titled 'Literature and Ecology: An Experiment in Ecocritism' (1978). In this essay he suggested *"application of ecology and ecological concepts to the study of literature."* The two works which officially heralded 'Ecocriticism' were 'The Ecocriticism Reader' (1996) edited by CherylIGlotfelty and Harold Fromm and 'The Environmental Imagination: Thoreau Nature Writing, and the Formation of American Culture' (1995) by Lawrence Buell. In his 1995 book "The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture," Buell argued that '*the American literary tradition had played a crucial role in shaping cultural attitudes towards nature and the environment. He emphasized the importance of examining the literary representations of the natural world and the ways in which they influenced cultural attitudes and behaviors.*'

Glotfelty and Fromm have made significant contributions to the development of ecocriticism as a discipline and have influenced the way in which scholars approach the study of literature and the environment. They included Rueckert's essay in their edited volume "The Ecocriticism Reader Landmarks in Literary Ecology" (1996). In one of the Literature Association meetings, Glotfelty had urged literary critics to develop an ecological approach to literature. At the same time Glen Love delivered a speech titled 'Revaluing Nature: Toward an Ecological Literary Criticism.' Since that meeting in 1989 the usage of the term 'Ecocriticism' gained currency. In 1992 "Association for the Study of Literature and Environment" (ASLE) was established along with the "Interdisciplinary Studies in Literature and Environment" (ISLE) in 1993.

Cheryll Glotfelty and Harold Fromm have defined ecocriticism in their in *The Ecocriticism Reader (1996)* as *"Ecocriticism is the study of the relationship between literature and the natural world. It seeks to understand how culture shapes our perceptions of the environment and how our understanding of the environment shapes culture".* In this sense, ecocriticism is both an analysis of literature and a critical perspective on the relationship between human culture and the natural world.Ecocriticism has become one of the most popular fields of research in the present scenario. There are many views and there are different definitions and understanding of the term ecocriticism. Simply put, "ecocriticism is the study of the relationship between literature and the physical environment" (Glotfelty xviii). Ecocritics, therefore, encourage others to think seriously about the relationship of humans to nature and is considered the many relationships between literature and the natural world. And in seeking to expand to an understanding of the environment. Ecocritic is mdesignates

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the critical writings which explore the relations between literature and the biological and physical environment, conducted with an acute awareness of the devastation being brought on that environment by human activities. It seeks to explore whether in a cultural text, environment is treated with debilitating attitude or it has been glorified.

PundalikNaik's novel *The Upheaval*, translated from the original Konkani novel 'Achhev' by VidyaPai, tries to depict the ruthless intrusion of men and machines into the idyllic environs of a rural community and tries to show the mining activity as not something natural but a self-invited disaster for man and the whole community of that village. PundalikNaik is a Konkani-language poet, short-story writer, novelist, and playwright and screen writer from Goa. The novel 'The Upheaval' is based on the social life of a village in Goa wrecked by rampant mining. The present research paper focuses on the ecocritical analysis of the novel, impact of industrialization and modernization of a traditional society that lives by myths and rituals.

Goa is a state which is rich in natural and mineral resources and has a distinctive charm of its own. It is a small state on the west coast of India, with beautiful landscape and scenery, significant ecological and cultural characteristics. It is rich in iron ore deposits. Initially the Portuguese granted the leases for mining of iron ore in Goa and later the Government of India, on renewal of the licenses, even granted them huge tax concessions. The miners prospered but hundreds of hectares of forest land have been virtually decimated by mining activity and legions of families have been affected by the pollution caused by the erosion of waste dumps, the discharge of mine pit water and other effluents from environmentally hazardous mining activity.

PundalikNaik's novel talks about the decay of a self-sufficient agriculture community with the impassive invasion of the mining industry. It portrays the emergence of the mining industry and, thereby, the industrial capitalism in an otherwise traditional agrarian village community of Kollamb, a small village in Goa.*The Upheaval* is a tragic story of a village by name Kolamba. It has three veins running through. First, the novel narrates the degradation of a society; second, it shows the fall of a man due to his greed for wealth; and the third, it speaks of the cultural degradation too.

The opening chapters vividly describe the natural environment of the village. The green farmlands, natural landscape, the sacred river, and traditions of the village upholding the ecological balance. In the microcosm of Kolamba village, *"which nestled in the curve of the river Mandovi as snugly as a water pot fits against a woman's hip"*(Naik 15), PundalikNaik sets out his characters on their paths of destiny cataloguing their fall from grace from a composite rural society to one ravaged by the modernity of mining and industrialisation. For Indians environment is not merely a means to earn profit rather they have to uphold it divine. Kolamba is an agrarian village. The novel depicts their culture, rituals, and customs revolving around the environment. Apart from agriculture, villagers are absorbed with performing religious and cultural activities. At the heart of the village lies the sacred river "Mondovi". The river is the epitome of god for the villagers. The novel is the story of the decline and fall of a pre-industrial way of happy and prosperous life in the small Goan village caused by the introduction of mining in the area.

Pandhari, the protagonist of the novel is a prosperous farmer in the village. He was leading happy life with his wife, Rukmini and two children - Son Nanu and daughter Kesar. But eventually we see how one wrong choice by Pandhari because of his thirst for money, brings down havoc on the family. It is not only Pandhari but also several other farmers who choose to work at the mines for more daily wages. These changes slowly set in a vicious circle of events that take place in the village.As the story proceeds we see the villagers no longer celebrate their traditional ceremonies and festivals and the switch from land to mines.

The families in the Kolambaonce were self-sufficient agriculture communities. Agriculture is the main occupation and source of livelihood for the villagers. Apart from agriculture villagers are absorbed with performing religious and cultural activities. Villagers celebrate different festivals and nature is the god for them. They worship the nature. The writer has depicted very observantly even the minute details of nature, seasons, paddy fields and the agricultural activities in synchronization with the changing seasons. While giving beautiful imagery of the natural scene of Kolamba he writes thus:

The nip in the air set tiny buds sprouting among the lush foliage of the jackfruit, and the mango by the lake seemed to come of age as its crown of fresh green leaves gleamed softly in the sun. The wispy curls that sprouted on the cashew soon unfurled into leaves which grew bigger by the day and the clusters of blossoms swaying from every bough cast their fragrance into the morning mist. The santon stood proud and erect by the lake casting its benevolent gaze on the rows of hutments and the raatki rani flowers that bloomed in every crevice by the lake, filled the night air with their heavy perfume (Naik 25).

It is the beautiful presentation of the nature of the village that every reader will fall in love with it but as story proceeds we can see the worst impacts of mining on the nature and people, one followed by the other. With protagonist Pandhari's family in the centre the novelist vividly sketches the ecological degradation and provides a

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deep insight into the psyche of the village community which easily falls prey to the invasion of industrialization. Pandhari, paves way for the mining entrepreneur to rip out ore from the virgin land and set a series of disasters for the village Kolllamb. Pandhari becomes the role model for the villagers who sooner or later follow him in joining the mining business. The mining business attracts many people with its economic comforts in the beginning. It is quite natural for the lot of poor farmers to be lured by the money which would naturally bring them more comforts and luxuries and also in a way raise their social status. Naturally, like Pandhari, slowly all the farmers turn to the mines for earning more. Ultimately the mining sites turn out to be grave yard for villagers. It was the process of urbanization of the village but it cost a lot. Popular writer and modern interpreter of Indian mythologies, Dr. DevduttPattanaik writes about the process of urbanization at the cost of natural destruction,

> *"Growth of human civilization involves the domestication of nature, the uprooting of forests and destruction of ecosystems"* (Pattanaik Loc. 928).

The land is stripped off and is transformed by constant blast and drilling for extraction. The town was covered with black ground of dust, the land was filled with muddy water and insects thrived. The dirt track that led to the mines has now turned into a squelchy mess. The ripened summer paddy crop, which drooped 'like rows of shy brides with bowed heads', was no longer visible. The Lake, once revered as the deity of the village, has now become dirty with a film of dust, oil and diesel which ran into it as the trucks are washed in it. During rains the lake is filled with dirty rain water gushing through the mines thereby destroying the fields. Mining destroys the physical and moral landscape of the village.

The disastrous impact of the mines is observed at many points in the novel. Babuso who is a lusty vagabond, introduces Pandhari to a Gujarathi contractor, Prasad Babu. As the time passes, Babuso tries to intrude into the family of Pandhari. He is able to seduce Pandhari"s wife Rukmini through his sweet tongue. Babuso not only seduces Rukmini but also has an evil eye upon Kesar and also tries to seduce her once. Thus we see this wicked character in the novel that brings in the monster of Mines in the village for the sake of more money.

It is said that the nature, protector of the human and the non-human beings, creates the bond between them. As long as there is a harmony between the living and non-living, there prevails a healthy eco-system for the benevolence of mankind as well as the earth. The novel focuses on the discord in this harmonious balance and thereby the disintegration of the spatial ecology.

We find the series of degradation were taking place in the novel which was very harmful for the people and nature too.All the local lakes get polluted, trees are felled, rivers get muddy and all the paddy fields turninfertile because of negligence. People forget their culture, traditions and rituals under thepretext of modernisation.The people of Kolamba leave their fertile farms and move towards the luring mines which lead to the destruction of both human being and non-human beings too.According to ecocritical theory the function of literature is to explore and critique the relationship between humans and the natural environment, and to raise awareness about environmental issues and promote environmental responsibility. To conclude this research work it is apt to say that the writer succeeded to convey his massage to the readers. He tried to aware about the greedy nature of the human being and his self-invited disaster. Kolamba,placeis once rich in resources turns to be the place ofenvironmental degradation, public health issues, poverty and social conflict.

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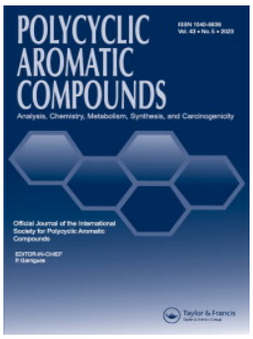

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Synthesis of New Amide Linked Biphenoloxy 1,2,3-Triazoles as Antitubercular and Antimicrobial Agents

Sambhaji T. Dhumal, Tejshri R. Deshmukh, Kishan P. Haval, Vagolu Siva Krishna, Dharmarajan Sriram, Vijay M. Khedkar, Naziya N. M. A. Rehman, Prashant P. Dixit & Ramrao A. Mane

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Synthesis of New Amide Linked Biphenoloxy 1,2,3-Triazoles as Antitubercular and Antimicrobial Agents

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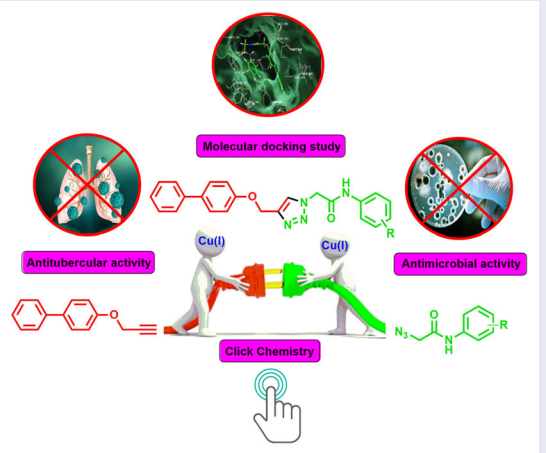
ABSTRACT

New 1,2,3-triazoles bearing biphenoloxymethyl and acetanilido moieties (**5a-5l**) have been synthesized, starting from 4-phenylphenol (**1**) following click chemistry approach. The synthesized compounds have been thoroughly characterized by their ^{1}H NMR, ^{13}C NMR and HRMS spectral data. These compounds were evaluated for their *in vitro* antitubercular activity against *Mycobacterium tuberculosis* $H_{37}Rv$ and antimicrobial activity against pathogenic microbia. Among the screened compounds, **5a** and **5i** have displayed notable antitubercular activity with MIC 25 μg/mL. Compounds **5a**, **5b**, **5c, 5 g**, **5i** and **5 l** have shown effective inhibition against most of tested pathogens. Molecular docking results of compounds **5a** and **5i** show the binding modes of the synthesized compounds into the active site of mycobacterial enoyl reductase. The synthesized compounds have also been analyzed for their ADME properties. By considering all these results, the present research work will offer a promising lead series for discovery of emerging potent antitubercular agents.



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Introduction

Tuberculosis (TB) is an infectious disease caused by pathogen, *Mycobacterium tuberculosis* (MTB).[1] Tuberculosis is now found in every corner of the globe and is the second largest infectious disease, creating severe public health problem. Tuberculosis primarily targets lungs and then other organs namely; intestine, meninges, bones, joints, and almost every other organ.[2] Despite its known etiology, tuberculosis still remains one of the most threatening health problems globally, claiming more than two million fatalities each year with almost nine million new cases.[3] The currently practised DOTS (Directly observed Treatment, short-term) therapy needs longer duration for treatment and therefore, the pathogenic strains, responsible for tuberculosis have acquired resistance to drugs.[4] New forms of tuberculosis like multi drug-resistant tuberculosis (MDR-TB), extensively drug-resistant tuberculosis (XDR-TB) and totally drug-resistant tuberculosis (TDR-TB) have emerged.[5] Therefore, most of the chemists focuses on the syntheses of library of new analogues of existing drugs or new chemical entities with hope to obtain better antitubercular activity.

In search of potent antitubercular agents, nitrogen-containing heterocycles particularly, 1,2,3-triazoles are gaining immense importance due to their broad spectrum applications in different areas such as bioconjugations, surface sciences, polymers, biochemical, supramolecular chemistry and pharmaceuticals.[6] Among the various 1,2,3-triazoles, 1,4-disubstituted-1,2,3-triazole derivatives have been receiving serious attention because of their diverse pharmacological activities such as antimicrobial,[7] antibacterial,[8] antitubercular,[9] antidiabetic,[10] anticancer,[11] and antiviral.[12] Literature survey also revealed that 1,2,3-Triazole and its derivatives have also been used as various enzyme inhibitors against histone deacetylase, alkaline phosphatase, cysteine protease and acetylcholinesterase.[6] 1,2,3-Triazole scaffold is an attractive prototype, as it is remarkably stable under oxidative/reductive conditions, enzymatic degradation and is capable to exhibit hydrogen bonding, dipole-dipole moments and π-stacking interactions.[13] These unique features of 1,2,3-triazole have increased its importance in the field of medicinal chemistry as they bind with the biological targets with high affinity due to its improved solubility.[14]

1,2,3-triazole is also reported as a core structural moiety in several important antifungal agents *viz*. Fluconazole, Itraconazole, Voriconazole and Ketoconazole.[15] These aforementioned broad and potent activities of triazole and its derivatives have established them as pharmacologically active scaffolds.

Owing to the therapeutic significance of 1,2,3-triazoles, in recent years a library of 1,2,3-triazoles have been synthesized and their antitubercular and antimicrobial activities reported.[16–19] Some molecules possessing antitubercular activity are shown in Figure 1.

Keeping in view the therapeutic significance of triazoles for developing new leads possessing excellent antitubercular and antimicrobial activities,[20–25] here, we have decided to design and synthesize the titled compounds, 2-(4-(([1,1′-biphenyl]-4-yloxy)methyl)-1*H*-1,2,3-triazol-1-yl)-*N*-phenylacetamides (**5a-5l**) and to evaluate them for *in vitro* antitubercular activity against *Mycobacterium tuberculosis* $H_{37}Rv$ and antimicrobial activity against potent bacterial and fungal pathogens.

Experimental

General

Chemicals and solvents were procured from Merck and S. D. fine chem. Melting points were determined in open capillary and are uncorrected. Reactions were monitored by thin layer chromatography (TLC) on silica gel plates (GF 254) using UV light to visualize the course of the reactions. ^{1}H NMR spectra and ^{13}C NMR spectra were recorded on Bruker Avance 300–500 (FT-NMR) and Bruker DRX-300 instruments, respectively, using $CDCl_3$ and DMSO-d_6 as solvent.

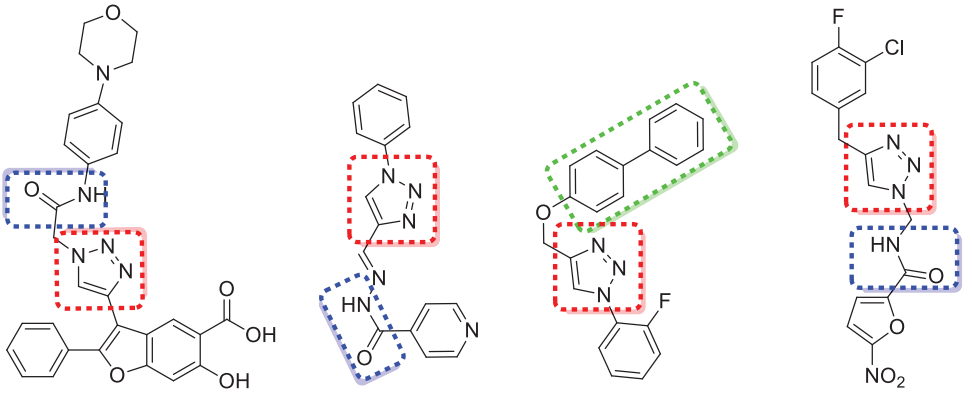


Figure 1. 1,2,3-triazoles containing Bioactive molecules.

Chemical shifts are reported in δ ppm with TMS as internal standard. High-resolution mass spectra (HRMS) were obtained using the Agilent 6520 (Q-TOF) ESI-HRMS instrument. Routine monitoring of reaction was performed by TLC using 0.25 mm E. Merck precoated silica gel TLC plates (60 F254) hexane:ethyl acetate as eluent.

Synthesis of 4-(prop-2-yn-1-yloxy)-1,1′-biphenyl (1)[18]

Off white solid, yield 82%, M.P.: 83–85 °C.

General procedure for the synthesis of 2-(4-(([1,1′-biphenyl]-4-loxy)methyl)-1H-1,2,3-triazol-1-yl)-N-phenylacetamides (5a-5l)

In a round bottom flask, 4-(prop-2-yn-1-yloxy)-1,1′-biphenyl (**1**) (0.0024 mol) and freshly prepared substituted 2-azido-*N*-phenylacetamides (**2a-2l**) (0.0024 mol) were stirred in presence of copper sulfate (20 mol%) and sodium ascorbate (20 mol%) in PEG-400: H_2O (1:1). The progress of the reaction was monitored by thin layer chromatography using ethyl acetate: hexane (3:7) as solvents. After stirring for 4h, the reaction mass was poured in ice cold water. The obtained solid was filtered, washed with water and crystalized from ethanol:DMF.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-phenylacetamide (5a)

White solid, yield 93%, M.P.: 240–241 °C; IR (KBr) cm^{-1}: 3390, 2870, 2354, 1665, 1365, 1225, 1032, 852, 691; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 5.23 (s, 2H, NCH_2), 5.36 (s, 2H, OCH_2), 7.07–7.63 (m, 14H, merged signals, Ar-H), 8.28 (s, 1H, triazolyl-H), 10.46 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 52.8 (NCH_2), 61.7 (OCH_2), 115.8, 119.8, 124.9, 126.8, 126.8, 127.3, 128.3, 129.4, 129.4, 133.4, 139.0, 140.4, 143.1, 156.3, 164.7 (C = O); HRMS $(ESI)^+$ calcd. for $C_{23}H_{21}N_4O_2$ $[M+H]^+$: 385.1620, found 385.1130.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(2-tolyl)acetamide (5b)

White solid, yield 90%, M.P.: 260–262 °C; IR (KBr) cm^{-1}: 3250, 2980, 2354, 1670, 1604, 1492, 1224, 996, 745, 562; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 2.24 (s, 3H, CH_3), 5.23 (s, 2H, NCH_2), 5.41 (s, 2H, OCH_2), 7.11–7.62 (m, 13H, merged signals, Ar-H), 8.28 (s, 1H, triazolyl-H), 9.79 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 18.4 (CH_3), 52.6 (NCH_2), 61.7 (OCH_2), 115.8, 125.3, 126.1, 126.6, 126.8, 126.8, 127.3, 128.3, 129.4, 131.0, 132.2, 133.5,

136.1, 140.7, 143.1, 158.3, 164.9 (C = O); HRMS (ESI)$^+$ calcd. for $C_{24}H_{23}N_4O_2$ $[M+H]^+$: 399.1776, found 399.1818.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(3-tolyl)acetamide (5c)

White solid, yield 89%, M.P.: 210–211 °C; IR (KBr) cm^{-1}: 3351, 2972, 2361, 1662, 1586, 1348, 1214, 1028, 728, 580; ^{1}H NMR (400 MHz, DMSO-d$_6$) δ ppm = 2.28 (s, 3H, CH_3), 5.23 (s, 2H, NCH_2), 5.34 (s, 2H, OCH_2), 6.90–7.63 (m, 13H, merged signals, Ar-H), 8.27 (s, 1H, triazolyl-H), 10.38 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d$_6$) δ ppm = 21.7 (CH_3), 49.2 (NCH_2), 61.7 (OCH_2), 115.7, 117.0, 120.8, 125.1, 126.8, 127.2, 127.3, 128.3, 129.3, 129.4, 133.5, 138.7, 138.9, 140.4, 143.7, 158.3, 164.7 (C = O); HRMS (ESI)$^+$ calcd. for $C_{24}H_{23}N_4O_2$ $[M+H]^+$: 399.1776, found 399.1824.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(4-tolyl)acetamide (5d)

Off white solid, yield 92%, M.P.: 240–242 °C; IR (KBr) cm^{-1}: 3136, 2868, 2361, 1661, 1496, 1214, 1028, 1006, 819, 506; ^{1}H NMR (400 MHz, DMSO-d$_6$) δ ppm = 2.26 (s, 3H, CH_3), 5.23 (s, 2H, NCH_2), 5.35 (s, 2H, OCH_2), 7.13–7.64 (m, 13H, merged signals, Ar-H), 8.28 (s, 1H, triazolyl-H), 10.40 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d$_6$) δ ppm = 21.0 (CH_3), 52.8 (NCH_2), 61.7 (OCH_2), 115.7, 119.8, 126.8, 126.9, 127.3, 128.4, 129.5, 129.9, 133.4, 133.4, 136.4, 140.3, 143.1, 158.3, 164.5 (C = O); HRMS (ESI)$^+$ calcd. for $C_{24}H_{23}N_4O_2$ $[M+H]^+$: 399.1776, found 399.1794.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(2-chlorophenyl)acetamide (5e)

White solid, yield 87%, M.P.: 224–225 °C; IR (KBr) cm^{-1}: 3146, 2960, 2354, 1668, 1593, 1261, 1168, 1045, 790, 685, 556; ^{1}H NMR (400 MHz, DMSO-d$_6$) δ ppm = 5.25 (s, 2H, NCH_2), 5.48 (s, 2H, OCH_2), 7.15–7.78 (m, 13H, merged signals, Ar-H), 8.28 (s, 1H, triazolyl-H), 10.02 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d$_6$) δ ppm = 52.6 (NCH_2), 61.7 (OCH_2), 115.8, 126.5, 126.8, 126.8, 126.9, 127.3, 128.1, 128.3, 129.4, 130.2, 133.5, 134.8, 140.4, 143.2, 143.4, 158.3, 164.5 (C = O); HRMS (ESI)$^+$ calcd. for $C_{23}H_{19}ClN_4O_2$ $[M+H]^+$: 419.1230, found 419.1276.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(3-chlorophenyl) acetamide (5f)

White solid, yield 85%, M.P.: 165–168 °C; IR (KBr) cm^{-1}: 3146, 2970, 2354, 1679, 1598, 1377, 1220, 1168, 1022, 824, 528; ^{1}H NMR (400 MHz, DMSO-d$_6$) δ ppm = 5.25 (s, 2H, NCH_2), 5.40 (s, 2H, OCH_2), 7.09–7.80 (m, 13H, merged signals, Ar-H), 8.30 (s, 1H, triazolyl-H), 10.69 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d$_6$) δ ppm = 52.6 (NCH_2), 70.2 (OCH_2), 115.6, 118.1, 119.2, 124.0, 126.6, 126.7, 127.2, 128.2, 129.2, 131.1, 133.3, 133.6, 140.2, 140.2, 143.0, 158.1, 165.1 (C = O); HRMS (ESI)$^+$ calcd. for $C_{23}H_{19}ClN_4O_2$ $[M+H]^+$: 419.1230, found 419.1273.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(4-chlorophenyl)acetamide (5 g)

Pale yellow solid, yield 92%, M.P.: 225–227 °C; IR (KBr) cm^{-1}: 3252, 2945, 2361, 1668, 1605, 1504, 1377, 1220, 1168, 1022, 824, 528; ^{1}H NMR (400 MHz, DMSO-d$_6$) δ ppm = 5.24 (s, 2H, NCH_2), 5.37 (s, 2H, OCH_2), 7.15–7.64 (m, 13H, merged signals, Ar-H), 8.28 (s, 1H, triazolyl-H), 10.61 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d$_6$) δ ppm = 57.5 (NCH_2), 75.1 (OCH_2), 120.5, 126.2, 131.5, 131.7, 132.1, 132.6, 132.9, 133.1, 134.2, 134.2, 138.2, 142.6, 145.1, 163.0, 169.7 (C = O); HRMS (ESI)$^+$ calcd. for $C_{23}H_{19}ClN_4O_2$ $[M+H]^+$: 419.1230, found 419.1279.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(3-methoxyphenyl) acetamide (5h)
White solid, yield 86%, M.P.: 192–194 °C; IR (KBr) cm^{-1}: 3306, 2937, 2354, 1674, 1598, 1502, 1220, 999, 790, 533; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 3.73 (s, 3H, OCH_3), 5.23 (s, 2H, NCH_2), 5.36 (s, 2H, OCH_2), 6.66–7.63 (m, 13H, merged signals, Ar-H), 8.29 (s, 1H, triazolyl-H), 10.47 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 55.6, 61.7 (NCH_2), 70.4 (OCH_2), 105.6, 109.9, 112.1, 115.7, 126.8, 126.9, 127.3, 128.3, 129.4, 130.3, 133.5, 140.2, 143.2, 158.3, 160.2, 164.2 (C = O); HRMS (ESI)$^+$ calcd. for $C_{24}H_{22}N_4O_3$ $[M+H]^+$: 415.1725, found 415.1782.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(4-methoxyphenyl) acetamide (5i)
Off white solid, yield 91%, M.P.: 242–244 °C; IR (KBr) cm^{-1}: 3203, 3134, 2354, 1668, 1604, 1523, 1220, 1040, 795, 533; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 3.73 (s, 3H, OCH_3), 5.23 (s, 2H, NCH_2), 5.33 (s, 2H, OCH_2), 6.90–6.93 (d, 2H, J = 8Hz, Ar-H), 7.15–7.17 (d, 2H, J = 8Hz, Ar-H), 7.49–8.28 (m, 9H, merged signals, Ar-H), 8.32 (s, 1H, triazolyl-H), 10.37 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 57.7, 61.6 (NCH_2), 79.7 (OCH_2), 114.6, 115.7, 121.4, 126.8, 127.3, 128.4, 129.5, 132.1, 133.4, 140.3, 143.0, 156.1, 158.3, 164.2 (C = O); HRMS (ESI)$^+$ calcd. for $C_{24}H_{22}N_4O_3$ $[M+H]^+$: 415.1725, found 415.1768.

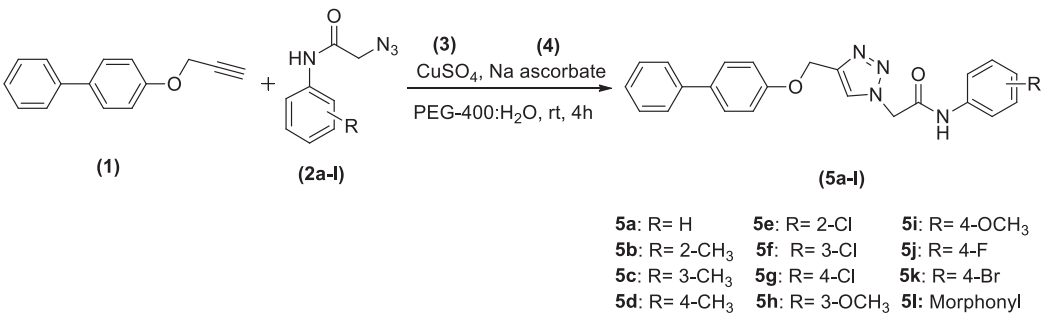
2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(4-fluorophenyl)acetamide (5j)
Off white solid, yield 88%, M.P.: 223–225 °C; IR (KBr) cm^{-1}: 3146, 2971, 2354, 1668, 1502, 1231, 1027, 824, 790, 533; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 5.23 (s, 2H, NCH_2), 5.36 (s, 2H, OCH_2), 7.15–7.70 (m, 13H, merged signals, Ar-H), 8.32 (s, 1H, triazolyl-H), 10.55 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 52.7 (NCH_2), 61.7 (OCH_2), 115.7, 116.2, 121.6, 121.7, 126.8, 126.8, 127.3, 128.3, 129.4, 133.4, 140.3, 143.1, 158.3, 164.7 (C = O); HRMS (ESI)$^+$ calcd. for $C_{23}H_{19}FN_4O_2$ $[M+H]^+$: 403.1526, found 403.1568.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(4-bromophenyl)acetamide (5k)
Pale yellow solid, yield 89%, M.P.: 222–223 °C; IR (KBr) cm^{-1}: 3150, 2966, 2354, 1668, 1604, 1372, 1226, 1034, 830, 790, 539; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 5.23 (s, 2H, NCH_2), 5.37 (s, 2H, OCH_2), 7.14–7.63 (m, 13H, merged signals, Ar-H), 8.29 (s, 1H, triazolyl-H), 10.65 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 52.8 (NCH_2), 61.6 (OCH_2), 115.7, 116.0, 121.8, 126.8, 126.8, 127.3, 128.3, 129.5, 132.3, 133.4, 138.3, 140.3, 143.1, 158.3, 165.0 (C = O); HRMS (ESI)$^+$ calcd. for $C_{23}H_{19}BrN_4O_2$ $[M+H]^+$: 463.0725 and found 463.0770.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-1-morpholino ethanone (5 l)
Green solid, yield 80%, M.P.: 268–270 °C; IR (KBr) cm^{-1}: 3152, 2983, 2356, 1668, 1598, 1220, 1068, 998, 790, 558; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 3.46–3.47 (m, 2H, morphinyl ring-H), 3.51–3.54 (m, 2H, morphinyl ring-H), 3.58–3.59 (m, 2H, morphinyl ring-H), 3.64–3.65 (m, 2H, morphinyl ring-H), 5.21 (s, 2H, NCH_2), 5.49 (s, 2H, OCH_2), 7.13–7.63 (m, 9H, merged signals, Ar-H), 8.13 (s, 1H, triazolyl-H); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 45.3, 51.2 (NCH_2), 61.8 (OCH_2), 66.5, 115.8, 126.8, 126.9, 127.3, 128.3, 129.4, 133.4, 140.4, 143.0, 158.3, 165.0 (C = O); HRMS (ESI)$^+$ calcd. for $C_{21}H_{23}N_4O_3$ $[M+H]^+$: 379.1725, found 379.1773.

Results and discussion

A convenient synthetic path has been developed to obtain the titled compounds, 2-(4-(([1,1′-biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-*N*-phenylacetamides (**5a-5l**), starting from



Scheme 1. Synthesis of new 2-(4-(([1,1′-biphenyl]-4-yloxy)methyl)-1*H*-1,2,3-triazol-1-yl)-*N*-phenylacetamides (**5a-5l**).

4-phenylphenol by following click chemistry. 4-Phenylphenol has been condensed with propargyl bromide in the presence of K_2CO_3 in DMF to afford desired starting material biphenyloxymethyl ethyne (**1**). It was then allowed to interact with substituted 2-azido-*N*-phenylacetamides **(2a-2l)** in the presence of $CuSO_4$ **(3)** and sodium ascorbate **(4)** as catalyst in PEG-400: H_2O (1:1) for 4 h to yield the cyclo addition titled products, 2-(4-(([1,1′-biphenyl]-4-loxy)methyl)-1*H*-1,2,3-triazol-1-yl)-*N*-phenylacetamides (**5a-5l**) (Scheme 1) with better to excellent yields. The physical data of the compounds (**5a-5l**) is recorded in Table 1.

These synthesized compounds were thoroughly characterized by their ^{1}H NMR, ^{13}C NMR and HRMS spectral data. The IR spectrum of compound **5a** has shown characteristic peak at 1566 cm^{-1} which corresponds to the C = N bond. The ^{1}H NMR spectrum of one of the representative compound **5a** displays peaks at δ 5.23, 5.36, 8.28 and 10.46 ppm, as four singlets due to the NCH_2, OCH_2, triazolyl-H and amido-NH, respectively, and a multiplet in the region δ 7.07 to 7.63 ppm due to the merged signals of 14 aromatic-H. The presence of three characteristics carbon signals are observed at δ 52.8, 61.7 and 164.7 ppm in ^{13}C NMR spectrum of compound **5a**, owing to the signals of NCH_2, OCH_2 and amido carbon group, respectively. The HRMS spectrum of compound 2-(4-(([1,1′-biphenyl]-4-yloxy)methyl)-1*H*-1,2,3-triazol-1-yl)-*N*-phenylacetamide **5a** showing $[M+H]^+$ ion peak at m/z 385.1130 for its molecular formula $C_{23}H_{20}N_4O_2$, confirming the formation of a 1,2,3-triazole ring. The detailed experimental procedures and spectral data of all the new compounds (**5a-5l**) are given in the supplementary materials.

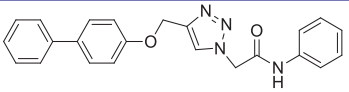
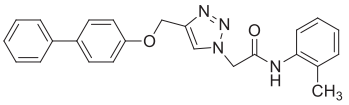
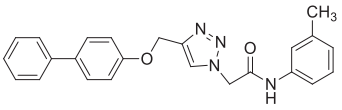
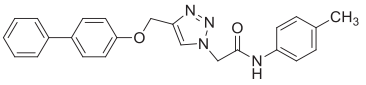
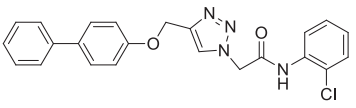
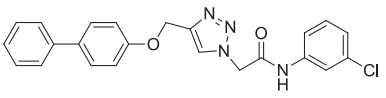
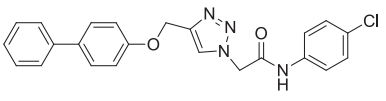
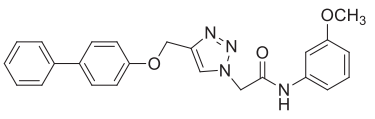
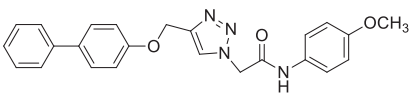
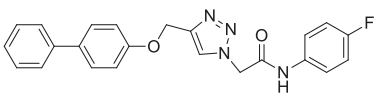
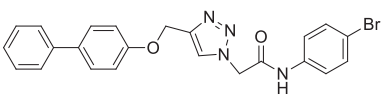
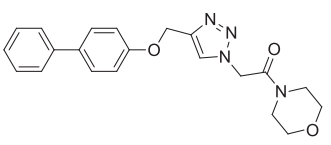
Antitubercular activity

The newly synthesized compounds (**5a-5l**) were evaluated for their *in vitro* antitubercular evaluation against *Mycobacterium tuberculosis* H_{37}Rv. It is evident from Table 1 that most of synthesized compounds have shown moderate antitubercular activity compared to standard drug, rifampicin. Among the newly synthesized compounds **5a** and **5i** were found to be active against *Mycobacterium tuberculosis* H_{37}Rv. The compound **5a** have phenyl acetamido moiety shown MIC 25 µg/mL. The compound **5i** with 4-methoxy phenyl acetamido moiety has also displayed moderate inhibitory activity with MIC 25 µg/mL.

Antimicrobial activity

The antimicrobial activity of the synthesized compounds (**5a-5l**) was evaluated against potent bacterial and fungal pathogens. The antimicrobial activity of the synthesized compounds was determined by the agar well diffusion method.[26] Fluconazole and tetracycline were used as internal references for antifungal and antibacterial activities, respectively. Among the synthesized compounds, **5a**, **5b**, **5c**, **5 g,** **5i** and **5 l** have shown effective inhibition against all pathogens. Activity

Table 1. Physical data and antitubercular activity of newly synthesized compounds (**5a-5l**).

Compound	Structures	M. P. (o C)	Yields (%)	MIC (μg/mL)
5a		240–241	93	25
5b		260–262	90	>25
5c		210–211	89	>25
5d		240–242	92	>25
5e		224–225	87	>25
5f		165–168	85	>25
5g		225–227	92	>25
5h		192–194	86	>25
5i		242–244	91	25
5j		223–225	88	>25
5k		222–223	89	>25
5l		268–270	80	>25

MIC values of Isoniazid and Rifampicin is 0.1 and 0.2 μg/mL, respectively.

of compounds **5b** and **5 g** against *E. coli*, *S. typhi* and *S. boydii* was noteworthy. Compound **5l** also showed good activity against *S. boydii* and *S. cerevisiae*. Compound **5l** was found to be active against fungal pathogens, *S. cervisiae* and *C. albicans* (Table 2).

Table 2. Antibacterial and antifungal activities of synthesized 1,2,3-triazoles (**5a-5l**).

Compounds→Bacterial Pathogens↓	5a	5b	5c	5d	5e	5f	5g	5h	5i	5j	5k	5l	Tetracycline as Standard (mm)
S. typhi ATCC 9207	26	16	12	06	02	01	14	06	06	03	03	10	33
E. aerogenes ATCC 13048	15	06	10	01	00	10	15	02	05	00	01	06	29
B. subtilis ATCC 6633	07	05	13	00	00	00	09	01	04	00	00	06	32
B. cereus ATCC 1177	12	05	14	01	03	08	20	06	10	01	00	05	33
P. aerogenosa ATCC 9027	05	06	09	02	00	01	10	00	09	02	01	06	32
S. abony NCTC 6017	07	07	12	02	00	05	13	02	06	00	02	06	32
E. coli ATCC 8739	16	09	08	01	01	10	14	00	05	02	03	05	29
S. aureus ATCC 6538	06	06	10	03	03	02	14	08	05	01	00	13	29
S. boydii ATCC 12034	05	11	13	02	00	15	23	03	14	02	00	15	34
Compounds→Fungal Pathogens↓	**5a**	**5b**	**5c**	**5d**	**5e**	**5f**	**5g**	**5h**	**5i**	**5j**	**5k**	**5l**	**Fluconazole as Standard (mm)**
S. cerevisiae ATCC 9763	05	07	06	01	01	00	15	02	06	01	02	15	30
A. niger ATCC 16404	08	06	05	02	00	03	06	01	04	01	01	04	30
C. albicans ATCC 10231	06	06	06	00	02	02	05	00	07	01	00	13	30

Diameter of zone of inhibition is given in millimeters (mm).

Table 3. MIC Values in μg/mL of most potent compounds.

Compounds → Pathogens↓	5a	5b	5c	5g	5i	5l	Tetracycline	Fluconazole
S. typhi	60	80	150	120	350	320	20	NA
B. subtilis	340	450	220	300	900	450	35	NA
B. cereus	170	460	170	70	280	530	30	NA
E. coli	110	230	280	160	600	550	25	NA
S. aureus	530	490	330	150	570	190	20	NA
S. boydii	600	180	230	40	130	140	20	NA
S. cerevisiae	550	510	650	130	340	130	NA	12
A. niger	410	620	850	470	850	630	NA	08
C. albicans	560	610	720	520	370	290	NA	30

NA: Not applicable.

Minimum inhibitory concentration (MIC)

In this present study, the MIC was determined for the most potent selected antimicrobial compounds **5a**, **5b**, **5c**, **5 g**, **5i** and **5 l**. MIC was deduced by following the method and guidelines of Clinical and Laboratory Standard Institute (CLSI). The results are recorded in Table 3.

Docking analysis

Promising level of anti-tubercular activities demonstrated by the two compounds **5a** and **5i** in the *in vitro* cell-based assay prompted us to perform molecular docking studies to elucidate their plausible mechanism of antitubercular activity, which could serve as potential starting points for structure-based lead optimization. Mycobacterial enoyl-ACP-reductase (FabI/ENR/InhA) plays a crucial role in the fatty acids elongation cycle, a step essential for mycolic acid biosynthesis through the mycobacterial type II fatty acid biosynthesis pathway.[20] Mycolic acids are very long chain α-alkyl β-hydroxy fatty acids (C74-C90) covalently linked to arabino-galactan which forms the major component of the mycobacterial cell wall. These acids provide protection from commonly used antibiotics, and are also significantly responsible for mycobacterial virulence. Inhibition of InhA efficiently helps to kill *Mycobacterium tuberculosis* under aerobic and anaerobic conditions by blocking the biosynthesis of this vital cell wall component i.e. mycolic acid and consequential cell lysis.[27] Furthermore, literature survey demonstrated the potential of triazolyl scaffolds to inhibit mycobacterial InhA. This encourages the selection of target to evaluate the binding affinity of titled compounds toward the crucial cell wall.[28–32] Molecular docking study

was carried out using the standard protocol implemented in the GLIDE (Grid-based Ligand Docking with Energetics) module of the Schrodinger molecular modeling package[33] to predict the binding modes of **5a** and **5i** into the active site of InhA.[34–37] Firstly, the molecular docking protocol was validated by extracting the co-crystallized ligand from the protein complex and re-docked into the active site. An overlay of the docked pose over the X-ray conformation showed that molecular docking protocol could reproduce the experimental binding mode with an RMSD of less than 0.1 Å (Figure S1 in supporting information).

From the ensuing docked conformations, it is observed that both the triazole analogues (**5a** - Figure 2 and **5i** - Figure 3) are deeply embedded into the active site of InhA with significant affinity (docking score: −8.957 (**5a**) and −8.594 (**5i**)) engaging in multiple bonded and non-bonded interactions with the residues lining the active site. Interestingly, they could accommodate well at the same site as the co-crystallized ligand with similar network of non-bonded and bonded interactions (Figure S2 in supporting information). Quantitative estimates of the per-residue interactions (Table 4 in supporting information) reveal that both compounds are stabilized within the active site through an extensive network of significant Van der Waals interactions with Leu218, Ile215, Ile194, Pro193, Ala191, Tyr158, Ala157, Met155 and Met103 residues *via* biphenyl-4-yloxy methyl component while the 1,2,3-triazole nucleus showed similar interactions

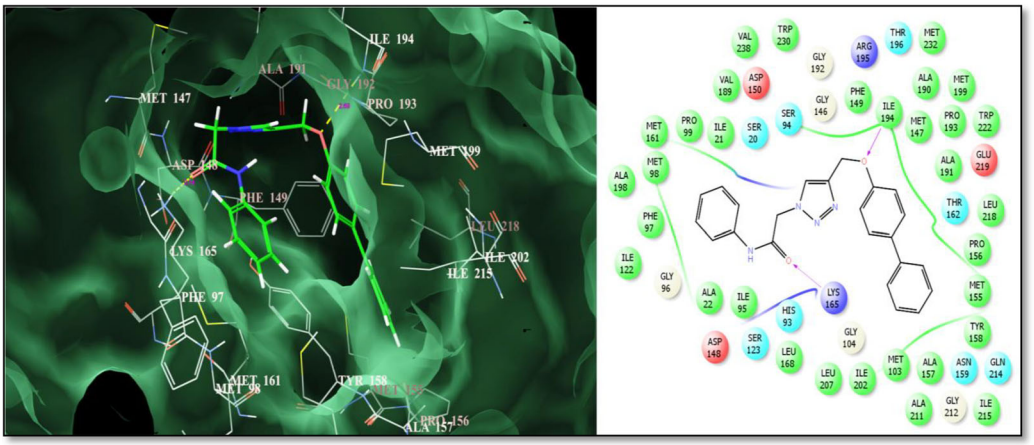


Figure 2. Binding mode of compound **5a** into the active site of mycobacterial enoyl reductase (InhA).

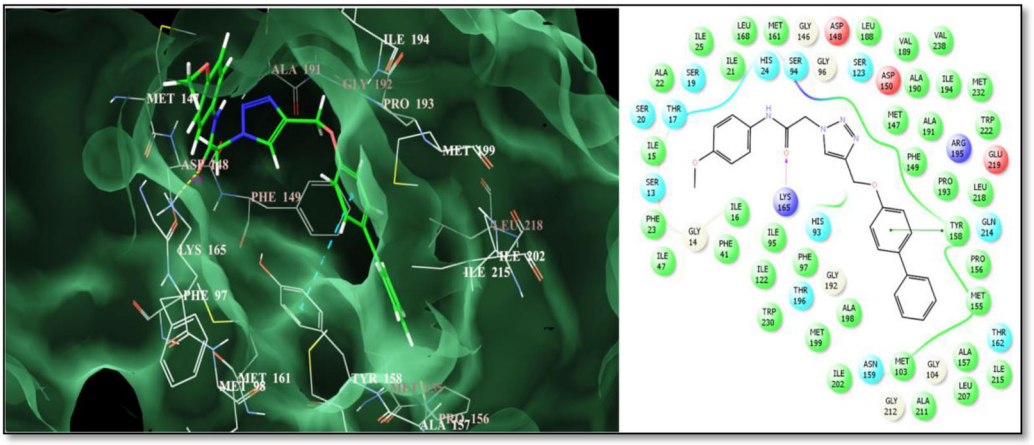


Figure 3. Binding mode of compound **5i** into the active site of mycobacterial enoyl reductase (InhA).

with Met199, Gly192, Phe149, Met147 and Ser94 residues. The *N*-phenyl acetamide side chain in compound **5a** and *N*-(4-methoxyphenyl) acetamide side of compound **5i** have shown significant Van der Waals interactions with Lys165, Met161, Asp148, Phe97, Gly96, Ile95, Ile21, Ser20 and Gly14 residues lining the active site of InhA. The enhanced binding affinity of these two compounds were also attributed to an equally significant array of electrostatic interactions observed with Glu220, Glu219, Glu210, Gly209, Gly192, Ala191, Lys165, Pro156 and Ser94 residues. These balanced set of steric and electrostatic interactions were major determinants in the binding of **5a** and **5i** to the active sites of InhA, which were further complimented by prominent hydrogen-bonding interactions observed between the amide oxygen (-CONH-) and Lys 165 residue. Compound **5a** showed an additional hydrogen bond with Ile94 through the ether linkage (-O-) while compound **5i** has displayed a close pi-pi (π- π) stacking interactions between the biphenyl component and the Tyr158 residue contributing additionally to the stability of **5a** and **5i** within the active site of InhA. These hydrogen-bonding and the pi-pi (π-π) stacking interactions serve as 'anchor' to guide the 3D orientation of ligand into the active site and facilitate the steric and electrostatic interactions with the enzyme. These results suggest that biphenyloxy tethered amide linked 1,2,3-triazoles possess promising binding affinity toward this crucial Mtb target InhA providing scope for structure-based lead optimization.

In silico ADME prediction

Good efficacy and an acceptable ADME (absorption, distribution, metabolism and excretion) profile are the most important properties of any successful drug. ADME properties prediction is one of the widely known pharmacokinetic parameters for the prediction of the oral bioavailability of any drug. Therefore, here we have predicted the in *silico* ADME properties of the newly synthesized 2-(4-(([1,1′-biphenyl]-4-yloxy)methyl)-1*H*-1,2,3-triazol-1-yl)-*N*-phenylacetamides (**5a-5l**).

In this study, we have calculated the aforementioned properties and Lipinski's rule of five[38] of newly synthesized compounds using Molinspiration online property calculation toolkit.[39] A compound is considered an orally active drug as well as obeys the Lipinski's rule of five if there is only one violation observed out of the following four criteria's: miLog P (octanol-water partition coefficient) $\leq$5, molecular weight $\leq$500, number of hydrogen bond acceptors $\leq$10 and number of hydrogen bond donors $\leq$5. Other than this absorption (% ABS) of all the derivatives of the series was calculated by the formula,[40]

$$\%\ \mathrm{ABS} = 109 - (0.345\ \times\ \mathrm{TPSA})$$

Table 4. Pharmacokinetic parameters for *in silico* ADME prediction of 1,2,3-triazoles (**5a-5l**).

Entry	% ABS[a]	TPSA[b] (A^2)	n-ROTB[c]	MV[d]	MW[e]	miLogP[f]	n-ON[g]	n-OH NH[h]	Lipinski violations[i]	Drug likeness model score
Rule	-	-	-	-	<500	≤5	<10	<5	≤1	–
5a	85.18	69.05	7	331.66	384.43	5.37	5	1	0	0.49
5b	85.18	69.05	7	345.19	398.46	6.21	5	1	0	0.77
5c	85.18	69.05	7	345.19	398.46	6.24	5	1	0	0.32
5d	85.18	69.05	7	345.19	398.46	6.05	5	1	0	0.42
5e	85.18	69.05	7	349.54	418.88	6.34	5	1	0	0.93
5f	85.18	69.05	7	349.54	418.88	6.37	5	1	0	0.49
5g	85.18	69.05	7	357.20	418.88	5.59	6	1	1	1.02
5h	81.99	78.28	8	357.20	414.46	5.43	6	1	0	0.34
5i	81.99	78.28	8	341.52	414.46	5.84	5	1	0	0.20
5j	85.18	69.05	7	381.34	402.42	7.00	5	1	0	0.78
5k	85.18	69.05	7	348.46	463.33	5.69	5	1	1	0.62
5l	85.18	69.05	6	353.39	378.42	5.85	5	1	0	0.34

[a]Percentage Absorption; [b]Topographical polar surface area; [c]Number of rotatable bonds; [d]Molecular volume; [e]Molecular Weight; [f]Lipophilicity; [g]No. of hydrogen bond acceptors; [h]No. of hydrogen bond acceptors; [i]Number of violations.

Furthermore, the drug-likeness model score (a collective property of physicochemical properties, pharmacokinetics and pharmacodynamics of a compound is represented by a numerical value) of synthesized compounds (**5a-5l**) were computed by MolSoft software.[41]

It was observed from Table 4 that most of the predictions were within the acceptable range. All the synthesized compounds exhibited very good % ABS ranging from 81.99 to 85.18% and results are shown in Table 4. Drug likeness score were also calculated in order to achieve biological activity of compound. Most of the compounds from the synthesized series showed positive drug likeness score. Results showed that the compounds possess average to good potential for the development as orally active drug molecules.

Conclusions

New 1,2,3-triazoles bearing biphenoloxymethyl and acetanilido moieties (**5a-5l**) have been successfully synthesized with good yields by following click chemistry. All the synthesized compounds were evaluated for their *in vitro* antimicrobial activity against nine and three different strains of bacterial and fungal pathogens, respectively. The bioactivity results shows that compounds **5a**, **5b**, **5c**, **5 g**, **5i** and **5 l** exhibited effective inhibition against various screened pathogens. In addition to this, we have also screened all the compounds for their *in vitro* antitubercular activity against *Mycobacterium tuberculosis* $H_{37}Rv$. Among the series, compounds **5a** and **5i** were acts as active antitubercular agent with MIC value 25 µg/mL. Furthermore, molecular docking investigation supports the most active compounds, which provides a valuable insight into the plausible mechanism of antitubercular action. Moreover, ADME properties of the synthesized compounds have shown good drug-like properties and therefore, the newly synthesized compounds can be acts as potent therapeutic agents.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

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साहित्य, कला आणि लोकसंस्कृतीला वाहिलेले त्रैमासिक

तिफण

वर्ष १४ वे, अंक - ४ था
जानेवारी - फेब्रुवारी - मार्च २०२३
भाग - १

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◆ संपादक ◆
डॉ. शिवाजी हुसे

पत्ता : संपादक, तिफण, 'शिवार' श्रीराम कॉलनी,हिवरखेडा रोड,
कन्नड, जि. औरंगाबाद - १३१४०३, मो. ९९०४००३९९८

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MAH MAR 34737/13/2009 - TC

वर्ष १४ वे, अंक - ४ था जानेवारी - फेब्रुवारी - मार्च २०२३

यशवंतराव चव्हाण विशेषांक

◆ संपादक ◆

डॉ. शिवाजी हुसे

◆ अतिथि संपादक ◆

प्राचार्य डॉ. राजेंद्र मोरे

डॉ. राजकुमार मरे

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डॉ. सर्जेराव जिगे	डॉ. ताहेर पठाण	डॉ. दिलिप बिरुटे
डॉ. सुभाष बागल	डॉ. रामचंद्र झाडे	डॉ. दत्तात्रय डुंबरे
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मूल्य : २५० रुपये

या अंकातील लेखकांच्या संपादक सहमत असतीलच असे नाही, या नियतकालिकास महाराष्ट्र राज्य साहित्य आणि संस्कृती मंडळाकडून अनुदान प्राप्त झाले आहे; परंतु या नियतकालिकात प्रसिद्ध झालेली मते मंडळास मान्य असतीलच असे नाही.

पत्ता : संपादक, तिफण, 'शिवार' श्रीराम कॉलनी,हिवरखेडा रोड,
कन्नड, जि. औरंगाबाद - १३१४०३, मो. ९९०४००३९९८

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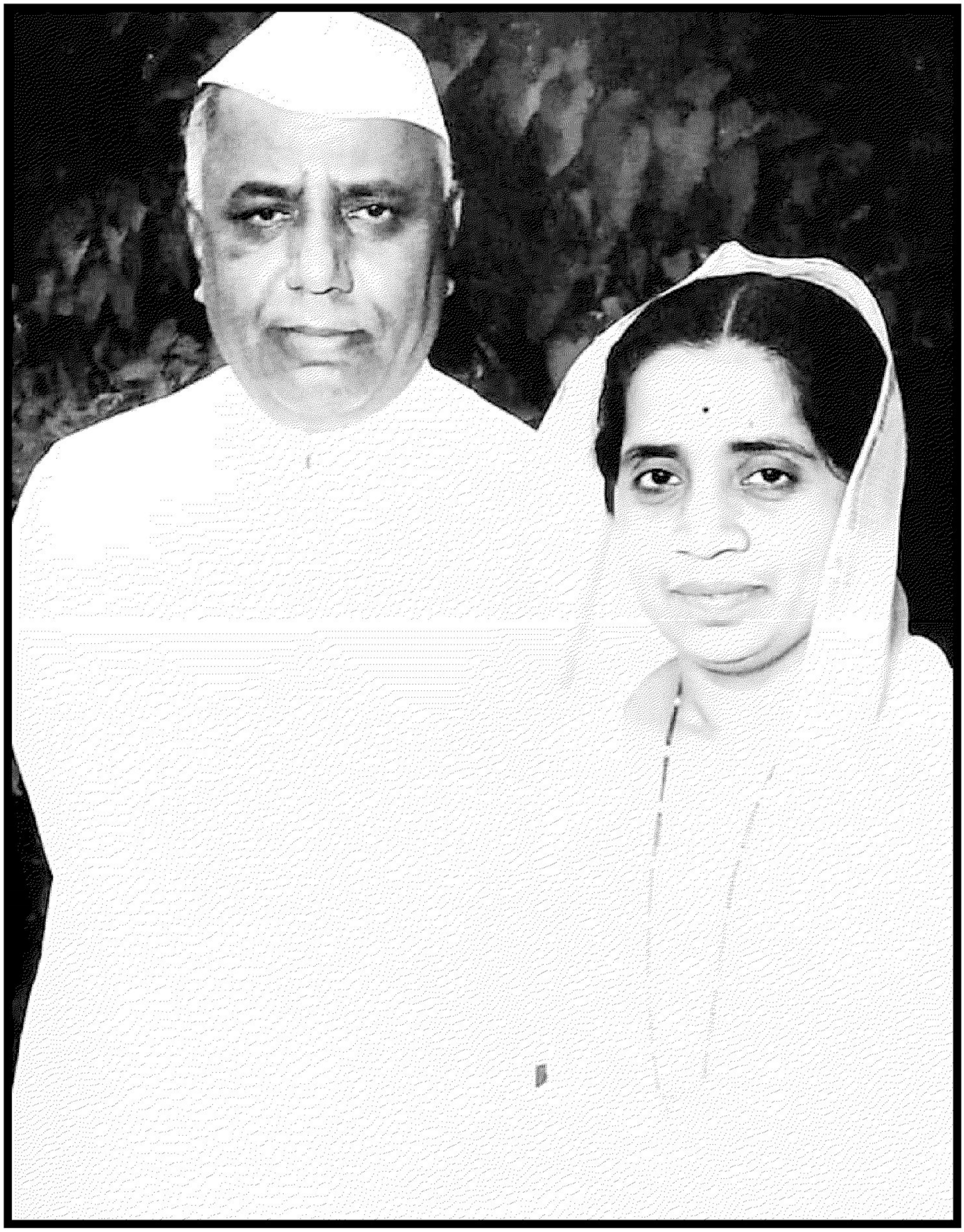

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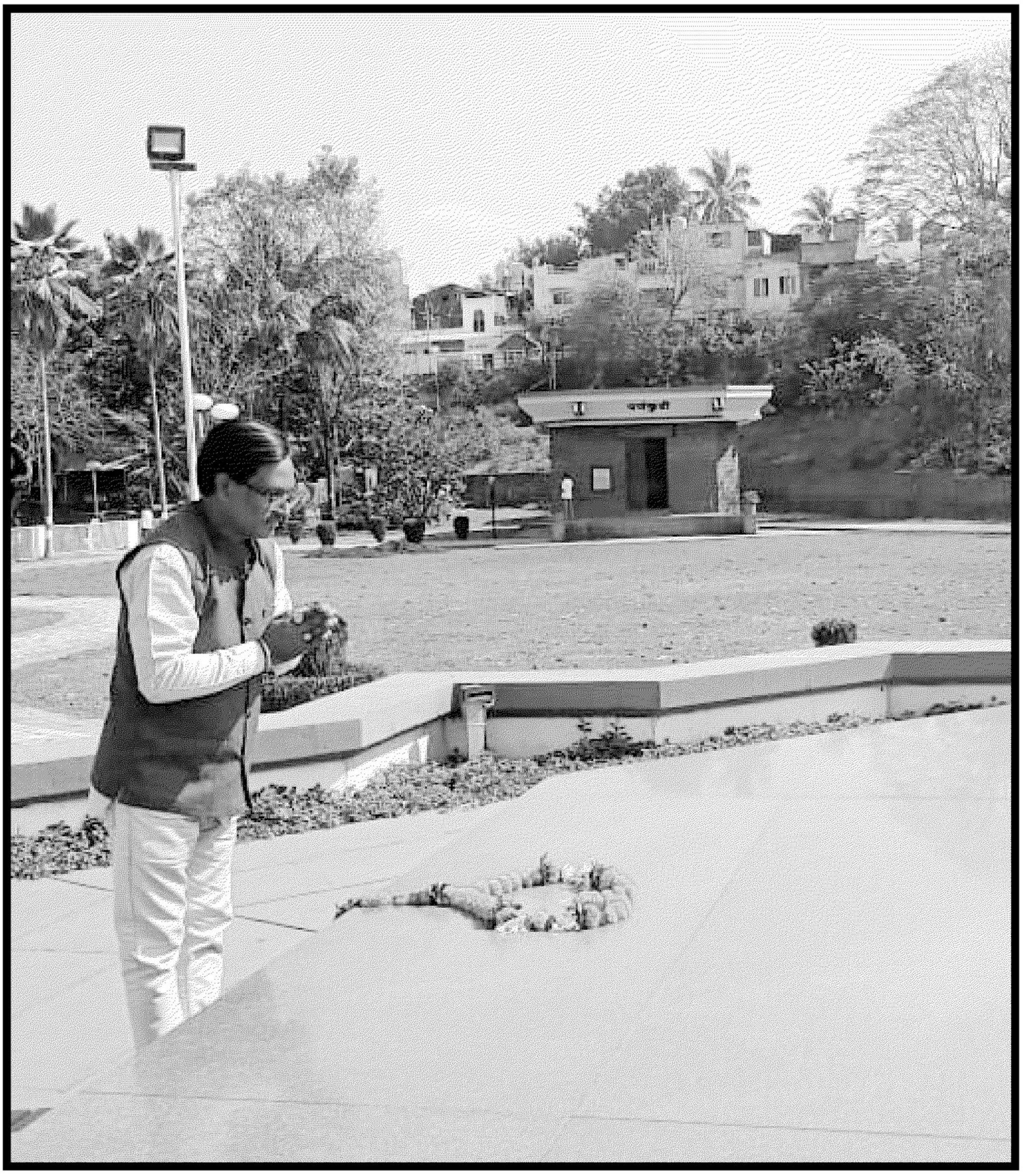

कराड येथील कृष्णा, कोयना प्रितिसंगमावर मा. यशवंतराव चव्हाण
यांच्या स्मारकास अभिवादन करतांना तिफणचे संपादक डॉ. शिवाजी हुसे

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नील जनार्धन नागभिडे

संशोधक विद्यार्थी, सहाय्यक प्राध्यापक व विभाग प्रमुख, इतिहास विभाग, रामकृष्ण परमहंस महाविद्यालय, उस्मानाबाद.

प्रा. डॉ. विष्णू बब्रुवान वाघमारे

प्रोफेसर व विभाग प्रमुख, पदवी व पदव्युत्तर इतिहास विभाग, श्री. शिवाजी महाविद्यालय, बार्शी, सोलापूर.

घोषवारा

यशवंतराव चव्हाण यांनी महाराष्ट्रामध्ये समताधिष्ठित एकजिनसी समाज निर्माण करण्याचे आपली जीवन उद्दिष्टे मानली होती, वेळोवेळी त्या अनुषंगाने विधिमंडळात, सभा- संमेलनात आणि लेखनाच्या माध्यमातून त्या भूमिकेचे प्रकटीकरण ते करत होते, व्दिभाषीक राज्याचे व नंतर मराठी भाषक संयुक्त महाराष्ट्राचे मुख्यमंत्री म्हणून येथील समाज व्यवस्थेने ज्यांना शेतको वर्ष उपेक्षित, वंचिततेच्या दास्य श्रृंखलेनी बंदिस्त करून ठेवली होती, त्या अस्पृश्य, नव दीक्षित बौद्ध समाजा संदर्भात मूलगामी सुधारणा करणारे प्रत्यक्ष कार्य व विचाराची मांडणी यशवंतरावांनी केली आहे. त्यांच्या विचारात सामाजिक समता व उद्याच्या महाराष्ट्रातील राज्य बहूजन राज्य असणार आहे हे वास्तव स्वप्न त्यांनी सांगली येथील 6 जानेवारी 1960 च्या भाषणात ' उद्याच्या महाराष्ट्रातील राज्य मराठा राज्य होणार नसून, ते मराठी राज्यच होईल', अशी भूमिका मांडली आणि 17 मार्च 1960 रोजी मुंबई राज्य पुनर्रचना विधेयकावर झालेल्या चर्चेस उत्तर देताना मुख्यमंत्री यशवंतराव चव्हाण यांनी दादासाहेब मल्हारराव शिर्के (शेडयूल्ड कास्ट फेडरेशन पक्षा तर्फे सन.1957 च्या सार्वत्रिक निवडणूकीत विधानसभेवर निवडून आले) यांच्या 'मराठी भाषिक राज्य होणार की मराठा राज्य होणार याची भीती वाटते...' या प्रश्नाला संबोधून असे म्हटले की, मी बाहेर बोलतो आणि विधानसभेत बोलत नाही असे म्हटले जाऊ शकते म्हणून '.....मी असे सांगू इच्छितो की, तसे होणार नाही आणि आम्ही तसे होऊ देणार नाही'. एकंदरीत यशवंतराव चव्हाण यांनी आपले कार्य व विचारांच्या माध्यमातून महाराष्ट्रात सामाजिक समता प्रस्थापित करण्याचे प्रयत्न करून डॉ. बाबासाहेब आंबेडकरांच्या विचार परंपरेचा वारसा चालवल्याचे दिसून पडतो.

महत्त्वाचे शब्द - सवर्ण, अस्पृश्यता, वर्ण व्यवस्था, महार वतन, बलुते, धर्मांतर, दीक्षाभूमी, भूमिहीन आंदोलन, राज्य पुनर्रचना विधेयक.

प्रस्तावना

कार्ल मार्क्सने एकदा लोकांना संबोधित असताना अशी भूमिका घेतली होती की, "माझे म्हणणे नाही की, जगातील सर्व माणसांची दु:खे नष्ट व्हायला पाहिजे, माझे केवळ, एवढेच म्हणणे आहे की, माणसांना माणसांची दु:खे असायला पाहिजे आणि भूक हे माणसाचे दु:ख नाही तर पशू-प्राण्यांचे दु:ख आहे." कार्ल मार्क्सने मानवी जीवनाचा आढावा घेताना, त्यांच्या वाटचालीचा निरीक्षण

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करताना त्यांनी ऐतिहासिक भौतिकवादी मीमांसा केली आहे. साध्या सोप्या भाषेत सांगायचे झाले तर पृथ्वीतलावर कोणत्याही खंडात, कोणत्याही भू-प्रदेशावरील मानवी समूहात निसर्गावस्थेपासून प्रामुख्याने दोन वर्ग असल्याचे निदर्शनास येते, एक शक्ती सामर्थ्यशाली लोकांचा आणि दुसरा शक्ती हीन, दुबळ्या व्यक्ती समूहाचा आणि वाटचालीच्या प्रत्येक टप्प्यात सामर्थ्यशाली समूहाने कमकुवत दुबळ्या व्यक्तींचे वेगवेगळ्या माध्यमातून शोषण केले आहे. मार्क्सचा हा वर्ग संघर्षाचा सिद्धांत प्रदेश- निहाय भिन्नत्व लाभलेल्या वा असलेल्या कोणत्याही समाजजीवनातील वा समाज व्यवस्थेतील लोकसमुहांना लागू पडतो.

हिंदुस्थानातील प्राचीन कालखंडापासून ते आजतागायत वा आधुनिक कालखंडापर्यंतच्या समाज व्यवस्थेचे विश्लेषण करू पाहता आपणास लक्षात येते की, प्राचीन समाज जीवन वा व्यवस्था चार वर्णावर आधारित होती, प्रथमत: कार्य विभाजन गुण व कर्मावर असून नंतर ती जन्मावर आधारित झाली. वर्णव्यवस्थेतील हे परिवर्तन – लवचिकते कडून परिदृढ होणे, वर्णाचे वर्ग-जातिसंस्थेत रूपांतर करण्याची प्रक्रिया घडवून आणली आणि परिणाम स्वरूप वर्ग-जाती बाह्य व्यक्ती समूहा संदर्भात तिरस्काराची, तुच्छतेची, हिनत्वाची भावना वृध्दींगत करून स्व- वर्ग जातीबाबत अभिनिवेश, अहंमता, श्रेष्ठत्वाची भावना निर्माण होण्यास चालना दिल्याचे आढळून येते. कालौघात वरील समूहातून एका जाती समूहास वर्ग - जाती बाह्य अर्थात अस्पृश्य म्हणून गावगाड्या बाहेर, गावतटाबाहेर फेकल्या गेले. जन्मत: प्रत्येक व्यक्ती समान, स्वतंत्र असून सुध्दा काहींच्या वाट्याला समाज व्यवस्थेकडून जाणीवपूर्वक उपेक्षा, वंचितता, अवहेलना लादल्या गेली.

हिंदूस्थानातील प्राचीन ते आजतागायत पर्यंतच्या समाज व्यवस्थेवर दृष्टीक्षेप टाकला तर आपणास लक्षात आल्यावाचून राहणार नाही की, येथील समाजजीवनात प्रत्येक टप्प्यात क्रांती आणि प्रतिक्रांती झालेली आहे. प्राचीन वैदिक समाजजीवनात कर्मकांड, अंधश्रध्दा, यज्ञ संस्थेचे वर्चस्व होते या माध्यमातून सर्वसामान्य लोकांचे जे शोषण केल्या जात होते त्या विरोधात म. बुध्दाची समतेची बौद्ध क्रांती घडली परंतु त्याविरोधात पुढे प्रतिगामी विचारांचे समर्थन करणारी, वर्ण व्यवस्थेतील वरिष्ठ वर्ण, जातीचे श्रेष्ठत्व, विशेषाधिकाराचे समर्थन करणारी मनुवादी विचारधारेची महा प्रतिक्रांती झाली आणि शतकोवर्षे ती समाजावर प्रभुत्व प्रस्थापित केल्याचे दिसून पडते.

मध्ययुगात सर्वसामान्यांचे काही अंशी दु:खे नष्ट करणारी वारकरी संतांची अध्यात्मिक क्रांती व सर्वसामान्यांना स्वधर्म, स्वाभिमान, समानतेची, स्वातंत्र्याची वागणूक देणारी छ. शिवाजी महाराज यांच्या नेतृत्वाखाली दक्खन प्रदेशात राजकीय क्रांती घडलेली दिसून येते परंतु छ. शिवाजी महाराजांच्या क्रांती नंतर जातिश्रेष्ठत्व-वर्चस्व, विशेषाधीकार प्रस्थापित करू पहाणारी, मनुवादी विषमता आधारित विचारधारा प्रस्थापित करू पहाणारी पेशवाईची प्रतिक्रांती झाली. तर एकोणिसाव्या आणि विसाव्या शतकाच्या पूर्वार्धात समाजातील माणसाला, माणूस म्हणून बघायला पाहिजे या फुले-शाहू-आंबेडकरी विचारधारेची महाक्रांती घडली आणि स्वातंत्र्याच्या उष:कालात स्वतंत्र भारतात व्यक्ती प्रतिष्ठा जपणारी, प्रगतीची समान संधी देणारी, विषमताधिष्ठित समाज व्यवस्था नष्ट करून समताधिष्ठीत नव-समाज रचना निर्माण करणारी, व्यक्ती माहात्म्य, विभुती पूजा नाकारणारी राज्यघटनारूपी क्रांती घडली परंतू मागील 75 वर्षांच्या समाज प्रवाहाचा आढावा घेतला तर जात वर्चस्व, विभूतिपूजा आधारित प्रतिक्रांतीकडे समाजमनाची वाटचाल होताना दिसून येते.

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या पार्श्वभूमीवर भारताच्या स्वातंत्र्या नंतर प्रथमत: व्दिभाषीक मुंबई राज्याचे व नंतर मराठी भाषकांच्या संयुक्त महाराष्ट्राचे प्रथम मुख्यमंत्री पदी विराजमान होणाऱ्या यशवंतराव चव्हाण यांची भारतीय समाज व्यवस्थेने शतकोवर्षे ज्यांच्या वाट्याला उपेक्षा, वंचितता, हिनत्व व स्वाभिमान शून्य जीवन लादले त्या पददलित, अस्पृश्य, नव-दीक्षित बौद्धांच्या प्रश्नांच्या अनुषंगाने कोणती धारणा, भूमिका होती व त्यांनी घेतलेली भूमिका नव स्वतंत्र भारता मधील इतर राज्यांना कशा प्रकारे दीपस्तंभ वा मार्गदर्शक ठरली याचा संक्षिप्त उहापोह या लेखाच्या माध्यमातून करण्याचा प्रयत्न आहे.

उद्दिष्टे

यशवंतराव चव्हाण यांनी अस्पृश्य व नवदीक्षित बौद्ध यांची सामाजिक व आर्थिक प्रश्न सोडविण्यासाठी केवळ राजकीय आश्वासने न देता प्रत्यक्ष कृती स्तरावर जी कायदे केले त्याचा आढावा घेणे.

1. डॉ. बाबासाहेब आंबेडकरांनी 'महार वतन' यास विसाव्या शतकातील गुलामगिरी संबोधले होते, ती गुलामगिरीची श्रृंखला सन. 1958 च्या कायद्यान्वये कशा प्रकारे नष्ट करण्यात आली याचे विश्लेषण करणे.
2. धर्मांतरानंतर महाराष्ट्रातील समाज जीवनात जे संघर्षात्मक वातावरण निर्माण झाले होते, त्या संदर्भात यशवंतरावांची भूमिका कोणती होती याचे मूल्यमापन करणे.

संशोधन पद्धती

यशवंतराव चव्हाण यांचे अस्पृश्य व नवदीक्षित बौद्धविषयीचे विचार व कार्य, या विषयावर संशोधन लेख लिहण्याकरिता ऐतिहासिक संशोधन आणि विश्लेषणात्मक संशोधन पद्धतीचा वापर करण्यात आला असून यासाठी उपलब्ध प्राथमिक व दुय्यम साधनांचा आधार घेण्यात आला आहे.

यशवंतराव चव्हाण यांची भूमिका

अस्पृश्य व नव-दीक्षित बौद्ध समाज : ग्रामीण भागात सामाजिक बहिष्कार, अत्याचार, छळ व हिंसा

वर्ष 1957 च्या 16 डिसेंबर रोजी व्दिभाषीक मुंबई राज्याच्या विधिमंडळात विरोधी पक्ष नेते एस. एम. जोशी यांनी 'सवर्ण हिंदू कडून मांग समाजातील लोकांवर झालेल्या हल्ल्यासंबंधी तहकूब सूचनेचा' ठराव मांडला. या तहकूब सूचनेच्या ठरावास शासन प्रमुख या नात्याने यशवंतराव चव्हाण उत्तर देताना जी भूमिका घेतली त्यातून आपणास यशवंतरावांच्या पुरोगामी दृष्टिकोनाचा प्रत्यय येतो. त्यांच्या मते, 'हिंदूस्थानातील एका विशिष्ट समाजावर शतकोवर्षांपासून अन्याय होत आहे. तो अन्याय करण्याची मनोवृत्ती उच्चवर्णीय समाजाच्या मनात खोलवर रूजल्या कारणाने त्या वर्गाकडून हे अमानुष कृत्य वारंवार होताना दिसत आहे. या मनोवृत्तीस अटकाव करणे, त्याचा विरोध करणे हे एक नागरिक व लोक प्रतिनिधी म्हणून आपले कर्तव्य आहे.'

यशवंतराव चव्हाणांनी वर्ष1957 च्या घटनेच्या अनुषंगाने केवळ शाब्दिक भूमिका न घेता प्रत्यक्षात अशा प्रकारचे प्रश्न म्हणजे दलित समाजावर एखाद्या ठिकाणी अन्याय होत आहे किंवा अन्याय झाला आहे, अशी तक्रार जर पोलीस प्रशासनाकडे आली तर याची चौकशी नि: पक्ष होण्यासाठी त्या घटनेची चौकशी स्थानिक पोलीस अधिकाऱ्याकडून न करता जिल्हा पोलीस अधिकाऱ्याकडून करणे व गरज पडली तर त्याच्याही वरचा अधिकाऱ्याने प्रत्यक्ष घटना स्थळी भेट देऊन तक्रार निवारण करण्याचे

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आदेश प्रशासन प्रमुख या नात्याने यशवंतराव देताना दिसतात. त्यांची अशी धारणा होती की, आज आपण विसाव्या शतकात राहत असलो तरी प्रत्यक्षात आपल्या आचरणात कर्मठ रूढी, प्रथा, परंपरा, चालीरिती, यास अधिक महत्त्व आहे. काहींमध्ये तर अतिरेकी जातीय अभिमान, अहंकार असल्याने त्या अंहकारास थोडासा जरी धक्का लागला तर त्या समूहाकडून हरिजन समुहासंदर्भात अत्याचार, हिंसात्मक घटना घडून येते. या घटनांची पुनरावृत्ती वारंवार का घडून येत आहे? या विषयी यशवंतराव चिंतन करताना दिसून येतात आणि ही परिस्थिती नाहीशी करावयाची असेल तर सर्वांनी एकत्र येऊन पक्षाची विचारसरणी व मर्यादेच्या चौकटी पलीकडे जाऊन या प्रश्नाविषयी विचार केला पाहिजे. सामाजिक समता प्रस्थापित करण्याचे प्रयत्न केला पाहिजे.

महार वतन – शोषणात्मक व्यवस्थेचे प्रतिक

महार समाजास गुलामगिरीच्या श्रृंखलांनी बंदिस्त करून ठेवू पाहणाऱ्या 'The Bombay Hereditary Offices Act, 1874' ज्यास 'The Bombay Act No. III of 1874' असे म्हणतात आणि सामान्य लोकांमध्ये 'वतनाचा कायदा' या नावाने हा कायदा ओळखला जातो. या कायद्या संदर्भात सन.1923 मध्ये शेवटची सुधारणा करण्यात आली होती. या कायद्यात असलेल्या महार वतन संदर्भातील कलमात काही सुधारणा करणे अपेक्षित असल्याने डॉ. बाबासाहेब आंबेडकरांनी वतन कायद्याचे दुरूस्तीचे 'बिल' वर्ष 1927 आणि 1937 मध्ये मुंबई कायदे मंडळात मांडले होते. परंतु शोषक मनोवृत्तीच्या सत्ताधारी वर्गांनी दोन्ही प्रसंगी डॉ. बाबासाहेबांच्या महार वतन संबंधी सुधारणेस यश मिळू दिले नाही. ज्या महार वतनास डॉ. बाबासाहेब आंबेडकरांनी 'विसाव्या शतकातील गुलामगिरी' असे संबोधले होते, ज्याची तुलना अमेरिकेतील निग्रो कृष्णवर्णीय व्यक्तींना श्वेत वर्णीय समूहाकडून मिळणाऱ्या परिस्थितीशी, गुलामगिरीशी केली होती. तेथील या निग्रोंची गुलामगिरी नष्ट करण्यासाठी विवेकी नागरिकांनी दुष्ट प्रवृत्तीच्या गुलामगिरी समर्थक व्यक्ती विरोधात रक्तरंजित यादवी संघर्ष करून तत्कालीन राष्ट्रपती अब्राहम लिंकनच्या नेतृत्वाखाली अधिकृतरित्या वर्ष 1863 ला निग्रोंची गुलामगिरी कायद्यान्वये नष्ट केली होती, तर भारतात अस्पृश्यांचे खरा सखा असलेल्या राजर्षि शाहू महाराजानी स्वत:च्या कोल्हापूर संस्थानात वर्ष 1921 च्या जूलै व ऑगस्ट मध्ये आदेशान्वये 'महार वतन' संपुष्टात आणले होते. परंतु मुंबई प्रांतातील डॉ. बाबासाहेबांच्या स्वप्नास सत्यात उतरण्यास 1958 चे वर्ष उजाडावे लागले. वर्ष 1958 ला व्दिभाषीक मुंबई राज्याचे मुख्यमंत्री या नात्याने यशवंतराव चव्हाण यांनी 'Bombay Inferior Village Watans Abolition Act, 1958' संमत करून विसाव्या शतकातील अमानुष गुलामगिरीच्या श्रृंखलेचे प्रतिक असलेली महार वतनाची व्यवस्था समूळ नष्ट करून पददलित, अस्पृश्य, नवदीक्षित बौद्ध समाजाच्या प्रगतीचा अवरूध्द, अडलेला मार्ग मोकळा केला. हे यशवंतरावांचे या समाजा संदर्भातील महत्त्वाचे कार्य आहे. तेव्हा मुळात शोषणात्मक व्यवस्था असलेली 'महार वतन' म्हणजे काय? याचा परिणाम अस्पृश्य, नवदीक्षित बौद्ध समाजावर कसा पडला? आणि बाबासाहेब आंबेडकरानी हे वतन नष्ट करण्याचे समर्थन का केले? हे बघितल्या शिवाय यशवंतराव चव्हाण यांच्या विचारांचे, कार्याचे महत्त्व आपणास लक्षात येणार नाही.

'The Bombay Hereditary Offices Act, 1874' च्या कायद्यानुसार वतन म्हणजे, 'कोणतीही वतनी माल मिळकत असल्यास ती व वंशपरंपरेचा हुद्दा व त्यासंबंधी हक्क व अधिकार हे मिळून वतन होते' वंशपरंपरेचा हुद्दा याचा अर्थ- सरकारी महसूल

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वसूल करण्यासंबंधी किंवा मूलकी कामाच्या इतर बाबीसंबंधी कामे करण्यासाठी वंशपरंपरेने धारण केलेला 'प्रत्येक हुद्दा' असा ठरविण्यात आला आहे.

पेशवाईच्या काळात वतनदारांच्या संख्येत वाढ झाली होती, परंतु ब्रिटिश अंमल मुंबई इलाख्यात प्रस्थापित झाल्या नंतर त्यांनी वतनदारांचे तीन वर्ग केले. 1)शासन आवश्यक वतनी गाव कामगार 2)रयत आवश्यक वतनी गाव कामगार 3)शासन व रयत अनावश्यक वतनी गाव कामगार – यापैकी दुसऱ्या व तिसऱ्या वतनी गाव कामगार च्या इनामी जमिनीवर कर बसवून त्यांना रयतेच्या लोकोपयोगी कामातून नाही परंतु सरकारी कामाच्या जबाबदारीतून मुक्त करण्यात आले होते, केवळ पहिल्या वर्गातील जे गाव कामगार सरकारी कारभार चालवण्यास आवश्यक आहेत त्यांच्याच अनुषंगाने सन.1874 चा कायदा संमत करण्यात आला होता. त्या कायद्यान्वये वतनी गाव कामगार म्हणून पाटील, कुळकर्णी, महार, जागले यांचा समावेश केला गेला.

सन. 1874 चा वतन कायदा : कलम – 4 अनुसार

'वतनदार म्हणजे वंशपरंपरेने सरकार उपयोगी कामे करणारा हक्कदार माणूस', याचाच अर्थ असा होतो की – गाव कामगार हा सरकारी कामे करण्यासच तो जबाबदार आहे. या वतनी गाव कामगारात पाटील, कुळकर्णी यांच्याबरोबर महार हा सरकार उपयोगी कामे करण्यासच जबाबदार आहे. परंतु महार समाजाच्या कार्या संदर्भात बदल झाले व त्यास रयतेचे काम करणे बंधन कारक झाल्याचे दिसून पडते, असे का घडले? याचे कारण ब्रिटिश पूर्व कालखंडात कोणत्याच प्रकारच्या गाव कामगार वतनदारांना कामाचा मोबदला हा नकद ऐवज मिळत नसे, त्याऐवजी त्यांना काळी व पांढरीचे हक्क असत, परंतु काळी – पांढरीच्या हक्कापोटी वतनी गाव कामगार पाटील, कुळकर्णी अधिकचा वाटा रयते कडून मिळवित होते, म्हणून त्यांचा बंदोबस्त करण्यासाठी ब्रिटिश अमदानीत सन.1839 व सन.1844 च्या कायद्यान्वये पाटील व कुळकर्णी यांचे पांढरी – काळीचे हक्क बंद करण्यात येऊन त्यांच्या कामाचा मोबदला नकद रुपात गावाच्या महसूलावर ठरवून ते सरकारी तिजोरीतून मिळवण्याची व्यवस्थाही करण्यात आली परंतु महार वतदारासंदर्भात सरकार कडून अशी व्यवस्था करण्यात आली नाही. त्यांच्या कामाचा मोबदला म्हणून त्यांना पडीक, शेतीस अयोग्य, इनामी जमिनी व रयते कडून बलुते घेण्याचा हक्क देण्यात आले आणि मुळात अशा प्रकारची उत्पन्नाची व्यवस्थाच महारांना गुलामगिरीच्या पाशात – श्रृंखलेत जखडून ठेवण्यास कारणीभूत ठरल्याचे दिसते.

महार वतनदार : कामाचे स्वरूप अनिश्चित

डॉ. बाबासाहेब आंबेडकरांनी 'महार आणि त्याचे वतन' या नावे बहिष्कृत भारतात वर्ष 1927ला अनुक्रमे तीन लेख लिहून या प्रश्नाचे स्वरूप, या प्रश्नांची दाहकता दाखविण्याचा प्रयत्न केला आहे. त्यांच्या मते, 'महार वतन म्हणजे दोन घरचा चाकर', त्यांच्या कामाचे स्वरूप अनिश्चित होते उदा. तालुकाच्या ठिकाणी किंवा अधिकारी सांगेल त्या ठिकाणी टपाल पोहचविणे, गोळा – जमा झालेला गावातील महसूल तालुक्याच्या ठिकाणी पोहचविणे, जन्म – मृत्यूची माहिती गोळा करणे, सरकारी अधिकारी गावात आला असता त्यांच्या राहण्याची व जेवणाची व्यवस्था पाहणे व संबंधित अधिकाऱ्याची इतर कामे करणे. या सरकारी कामाव्यतिरिक्त महारांना रयतेकडून बलुते मिळते म्हणून खाजगी कामे सुध्दा करावी लागत असे. उदा. गावातील एखाद्या घरचा व्यक्ती मृत्यू पावला असेल तर त्याची माहिती त्यांच्या इतर गावातील नातलगांना देणे, गावातील मेलेले गुरे – ढोरे यांचा विल्हेवाट लावणे, गावात

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स्वच्छता राखणे, लग्न प्रसंगी संबंधीतांच्या घरची लाकडे फोडणे इ. मुळात वतन कायदा – 1874 च्या कलम 4 अनुसार, वतनदार हा वंशपरंपरेने सरकार उपयोगी कामे करणारा हक्कदार माणूस, असे संबोधले असता महारांना गाव – गाड्यातील रयतेची कामे करणे बंधनकारक असण्याचे काही कारण नाही. ज्याप्रमाणे वतनी गाव कामगार पाटील, कुळकर्णी हे सरकारी कामाव्यतिरिक्त रयतेची खाजगी कामे करीत नाही त्याप्रमाणे महार वतनदारांनी सुध्दा न करणे अपेक्षित असताना आणि यास कायद्याचा आधार नसताना सुध्दा हे बंधनकारक करण्यात आले.

महारकीच्या कामाचे तास आणि कामावर किती महार कामगार असावे? स्पष्टतेचा अभाव

महारकीच्या कामाचे स्वरूप ज्या प्रमाणे स्पष्ट नव्हते त्याच प्रमाणे कामाचे तास सुध्दा स्पष्ट नाही. महार व्यक्ती हा दिवसातून चोवीस तास हा सरकार व रयतेच्या कामाकरिता उपलब्ध असायला पाहिजे. ऊन, पाऊस, वारा, रात्र असो वा दिवस या कशाचीही अडचण येऊ नये अशी सरकारी अधिकारी व ग्रामस्थ वरिष्ठ वर्णीय समाजाची अपेक्षा होती. एवढेच नव्हे तर सरकारी अधिकारी वा ग्रामस्थ यांच्या कामासाठी महारकीचा पुरूष उपलब्ध नसेल तर त्या ठिकाणी बदली माणूस म्हणून त्या घरची महिला जाणे किंवा महिला उपलब्ध नसेल तर मुलगा वा मुलगी आणि हे देखील उपलब्ध नसेल तर संबंधित घरातील वृध्द पुरूष किंवा वृध्द स्त्री यांनी ते जबाबदारी पार पाडावी अशी अपेक्षा होती. अशी ही माणसाला गुलामापेक्षाही निम्न वागणूक बहाल करणारी व्यवस्था दीर्घकाळ अस्तित्वात असण्याचे कारण काय?

इनाम जमीन – बलुते

गुलामगिरीच्या अवस्थेत राहण्यास दोन प्रमुख कारणे आपणास निदर्शीत करता येईल, ती म्हणजे महार वतनाचा मोबदला म्हणून महारास इनाम जमिनी दिल्या जात मुळात या इनाम जमिनी पावसाच्या पाण्यावर अवलंबून असलेल्या पठार शेत जमिनी होत्या परंतु चार वर्णावर आधारित समाज व्यवस्थेत व्यवसाय हा जात-जन्मावर आधारित असल्याने महार समाजाकडे स्व - प्रगती करण्याचे श्रेष्ठ उत्पन्नाचे साधने नव्हती परिणामी हा समाज महारकीचा मोबदला म्हणून जी पडीक शेत जमीन त्यांच्या वाट्याला येत होती त्यातच हा समाज समाधानी असल्याचे दिसून पडतो. त्याव्यतिरिक्त महारकीचा मोबदला म्हणून महारांना गावातील रयते कडून 'बलुते' घेण्याचा हक्क बहाल करण्यात आला होता, मुळात बलुते घेणे हा अस्पृश्य महार समाजाच्या अधोगतीचे प्रमुख कारण ठरते.

बलुते

महार समाजाच्या उत्पन्नाची दुसरी बाब म्हणजे सरकारी गाव कामगार असून सुध्दा शासनाकडून त्यांना पाटील, कुळकर्णी या गाव कामगारांप्रमाणे नकद पैशाच्या रुपात कामाचा मोबदला दिला जात नव्हता तर त्यांना रयते कडून बलुते घेण्याचा हक्क बहाल करण्यात आले. महारांनी रयते कडून जे बलुते घेण्याचा हक्क आहे तो त्यांच्या 'कामाचा मोबदला' आहे, असा समज रयत व महार यांचा होणे अपेक्षित असताना तसा तो न होता, बलुते म्हणजे भीक व महार म्हणजे भिकारी. महारांना आपण बलुत्याच्या माध्यमातून जगवितो, तो कनिष्ठ असून आपण श्रेष्ठ आहोत, तो याचक असून आपण दाता आहोत अशी भावना वरिष्ठ वर्गीय जाती समूहात बळावते व कालौघात ही भावना व्यक्तीच्या मनात खोलवर रूजली की वरिष्ठ समाजातील व्यक्तीस आपण श्रेष्ठ आहोत, आपण दाता

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असून कनिष्ठ समाजाने स्वत: होऊन आपणास महत्व व मान-सन्मान दिला पाहिजे आणि असे जर घडले नाही तर या तथाकथीत वरिष्ठ समाजाकडून यांचा छळ करण्याचा प्रकार घडतो.

स्वाभिमान शून्यत्वाची वृद्धी

बलुते घेण्याचा दुसरा महत्त्वाचा परिणाम म्हणजे महारकीची कामे करणाऱ्या लोकसमुहात स्वाभिमान शून्यत्व येते, त्यांना सांगतील ते काम करण्याची व वरिष्ठ समाज वागवतील त्या प्रमाणे वागण्याची सवय लागते. एकंदरीत जन्मापासून मृत्युपर्यंत जो लोक समूह स्वत:च्या जगण्याची जबाबदारी स्वत:वर न घेता दुसऱ्याच्या दिलेल्या अन्नावर जगू पाहतो, तेव्हा अशा लोक समूहात आत्मतेज – स्वाभिमान उद्भवने, निर्माण होणे अशक्य आहे. स्वत:चे जगणे सुंदर व सुसह्य करण्यासाठी परिस्थितीशी संघर्ष करणे, प्रयत्न करणे या जीवन संघर्षात स्वत:च्या सामर्थ्याची परीक्षा घेणे, या गोष्टी केल्याशिवाय व्यक्ती हा इतरांच्या आदरास पात्र ठरू शकत नाही. तेव्हा बलुतेरूपी भिकेचा आधार घेऊन जीवन व्यतीत करू पाहणाऱ्या लोकसमुहात स्वाभिमान, महत्वाकांक्षा उत्पन्न होऊ शकत नाही. कोणत्याही लोक समूहातील माणसास आपली प्रगती करून घेण्यासाठी दोन गोष्टींची गरज असते, ती म्हणजे संधी आणि महत्वाकांक्षा. वरिष्ठ जाती समूहातील व्यक्ती प्रशासनातील श्रेष्ठ अधिकारी पदांची वा इतर क्षेत्रातील श्रेष्ठ पदे मिळवण्याची महत्वाकांक्षा बाळगून प्रयत्न करीत असताना महार जाती समूहातील व्यक्ती 'आहे तेच बरे' अशा मानसिकतेत वावरताना दिसतात. कोणतेही यश मिळवण्यासाठी संधी नसली तरी जागृत भावनेच्या आधारावर प्रतिकूल परिस्थितीचे रूपांतर अनुकूल परिस्थितीत केल्या जाऊ शकते, संधी नसली तरी महत्वाकांक्षी व्यक्ती संधी निर्माण करते.

पराधीन जीवन

महार वतन पध्दतीमूळे महारांचे जगने पराधीन झाले व ज्याचे जगने दुसऱ्याच्या आधारावर असते तो व्यक्ती वा व्यक्ती समूह स्वत:च्या इच्छेनुसार स्वत:मध्ये सुधारणा करू शकत नाही. महार वतन व तदनुषंगिक बलुते म्हणजे एक मोह आहे आणि हाती असलेल्या या मोहाच्या प्रभावाखाली व्यक्ती दुसऱ्या गोष्टीचा विचार करू शकत नाही, तेव्हा ते हातचे मोह सुटल्या शिवाय पळत्याच्या पाठीमागे कोणी लागत नाही आणि पळत्याच्या पाठीमागे लागल्याशिवाय व्यक्तीची प्रगती होत नाही म्हणून आधी हातचे महार वतन सुटले पाहिजे त्याशिवाय महार समाजास स्व प्रगतीचे इतर मार्ग सुचणार नाही, लक्षात येणार नाही. या भूमिकेतून डॉ. बाबासाहेब आंबेडकरांनी बहिष्कृत भारताच्या आपल्या एका अग्रलेखात 'शेवगाच्या झाडावर' उपजीविका करणाऱ्या एका कुटुंबाची गोष्ट वर्णन करतात, त्यांच्या मते, 'एका कुटुंबात चार धडधाकट भाऊ असतात त्यांना समाजात मान, दर्जा असतो परंतु आर्थिक परिस्थिती हलाकीची असल्याने ते घराच्या अंगणातील शेवगाच्या झाडाचे शेवगा तोडून रात्री माळ्यास विकतात व त्या पैशात मोठ्या काटकसरीने उपासमार करीत जीवन व्यतीत करीत असताना एकदा त्यांच्या घरी सोयरा पाहुणा येतो आणि रात्रीला जेव्हा जेवायला बसतात तेव्हा घरातील लहान मुलांसोबत त्यास जेवण देऊन इतर मात्र भूक नसल्याचे कारण देत जेवणास बसत नाही. खरं म्हणजे जेवणास न बसण्याचे कारण जेवणाची कमतरता हे असते, तेव्हा रात्री पाहुणा झोपलेला आहे हे बघून नित्य नियमाप्रमाणे घरातील ज्येष्ठ बंधु अंगणातील शेवगाच्या झाडाचे शेवगा तोडतो आणि घरी आलेल्या माळ्यास तो विकून त्याच्याकडून जे मिळेल ते पैसे घेतो. हा प्रकार झोपेचे सोंग घेतलेला पाहुणा बघतो आणि मध्यरात्र झाल्यानंतर तो उठतो व अंगणातील त्या शेवगाच्या झाडाला बुडापासून

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तोडून कोणासही कल्पना न देता निघून जातो. सकाळ झाल्यानंतर शेवगाच्या झाडा संदर्भात झालेला प्रकार जेव्हा घरातील सर्वांच्या लक्षात येतो तेव्हा एकच संतापाची लाट, आरडाओरड होते आणि घरातील सर्वजन एकत्र येऊन विचार करतात की, आता आपणास कामाच्या शोधासाठी घर सोडणे भाग आहे, कारण ज्याच्या आधारावर आपली उपजीविका चालू होती ते शेवग्याचे झाड आता तोडल्या गेले आहे. आता उपजीविकेचे दुसरे साधन शोधावेच लागेल. सर्व चारही भाऊ कामासाठी गावाबाहेर पडतात आणि आर्थिक स्थिती सुधारल्या नंतर काही कालावधीने दिवाळीच्या सनासाठी पुन्हा गावात एकत्र जमतात तेव्हा हा पाहुणा पुन्हा त्यांच्या भेटीस जातो तेव्हा हे चारही भाऊ त्या पाहुण्याचे पाय धरतात आणि आपली चूक मान्य करतात'. अर्थात महार वतन म्हणजे महारांच्या दारातील शेवगा आहे, तो कापून टाकल्या शिवाय त्यांच्या जीवनात – आर्थिक परिस्थितीत क्रांती घडणार नाही.

एकंदरीत, सन. 1958च्या कायद्यान्वये महार वतन नष्ट करून, विसाव्या शतकातील आधुनिक गुलामगिरीच्या बंदीवासातून पददलित, अस्पृश्य व नवदीक्षित बौद्धाना मुक्त करण्याचे कार्य यशवंतराव चव्हाण यांनी केले या ऐतिहासिक सत्याची नोंद सुवर्ण अक्षरांनी आधुनिक महाराष्ट्राच्या इतिहास केल्या जाईल.

भूमिहीनांचे आंदोलन

दादासाहेब गायकवाड यांच्या नेतृत्वाखाली भूमिहीन अस्पृश्य, नव दीक्षित बौद्ध यांचे प्रचंड आंदोलन झाले, भूमिहीन आंदोलकांची प्रमुख मागणी होती की, 'आम्हाला जगण्याचे साधन म्हणून सरकारच्या ताब्यात असलेली पडीक शेती जमीन शेती करण्यासाठी देण्यात यावी', यशवंतराव चव्हाणांना स्वत:स ग्रामीण पार्श्वभूमी असल्याने अस्पृश्य, नवदीक्षित बौद्धांची आर्थिक परिस्थिती हलाखीची आहे, त्यांचा जगण्याचा प्रश्न कठीण आहे याची जाण होती, ग्रामीण जीवनात, गाव- गाड्यात अस्पृश्य व नवदीक्षित बौद्धांना धर्मांतरानंतर ज्या विरोधास, सामाजिक बहिष्कारास, सामूहिक अत्याचारास सामोरे जावे लागत होते आणि यामुळे त्यांच्या जगण्याचा प्रश्न गंभीर होत होता, या सर्व परिस्थितीची दखल घेऊन सामाजिक न्यायाचे तत्त्व व सामाजिक समता प्रस्थापित करण्यासाठी त्यांनी दादासाहेब गायकवाडांच्या नेतृत्वाखालील आंदोलनाची मागणी मान्य करून भूमिहीन अस्पृश्य, नवदीक्षित बौद्धांना शेत जमिनी उपलब्ध करून दिले.

दीक्षाभूमी मैदान – यशवंतराव चव्हाण

डॉ. बाबासाहेब आंबेडकर यांनी 14 ऑक्टोबर 1956 रोजी नागपूर येथे ज्या भूमीवर बौद्ध धम्माची दीक्षा घेतली त्या भूमीला नव- दीक्षित बौद्ध 'दीक्षाभूमी' असे म्हणतात. या भूमीवर बाबासाहेबांनी बौद्ध धम्माच्या पुनरूज्जीवनाची प्रक्रिया पुन्हा एकदा भारतात सुरू केली होती आणि बाबासाहेबांच्या महापरिनिर्वाणा नंतर नव-दीक्षित बौद्ध समाजाची या भूमीवर डॉ. बाबासाहेबांचे भव्यदीव्य स्मारक उभे करण्याची इच्छा होती त्या करिता त्यांनी महाराष्ट्र शासनास या मैदानाची मागणी केली असता प्रशासनातील काही अधिकारी वर्गाकडून या सरकारी मालकीच्या जमिनीचे हस्तांतरण करण्यास विरोध केला जात होता, असे असताना सुध्दा यशवंतराव चव्हाणांनी ही जमीन दीक्षाभूमी स्मारकासाठी उपलब्ध करून दिली. याविषयीची त्यांची भूमिका दि. 30 ऑगस्ट 1961च्या नागपूर मधील दीक्षाभूमी येथील भाषणात ते म्हणतात 'नागपूर येथील दीक्षाभूमीवर डॉ. बाबासाहेब आंबेडकरांचे स्मारक उभारल्या जात आहे याचा अभिमान महाराष्ट्र सरकारला वाटत आहे, डॉ. बाबासाहेब आंबेडकर हे महाराष्ट्राचे पुत्र आणि नागरिक आहेत. सरकारने दीक्षा

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मैदान दिले म्हणजे हा उपकार केलेले नाही, तर पवित्र कार्य पार पाडले आहे. येथे मालकीचा अथवा मेहरबानीची भावना नाही.' यशवंतराव चव्हाण यांची डॉ. बाबासाहेब आंबेडकरांविषयी श्रद्धा आहे, स्व- पक्षीय राजकीय विचारधारा, राजकीय मते काहीही असली तरी बाबासाहेबांचे मोठेपण ते मान्य करताना दिसतात.

निष्कर्ष

स्वातंत्र्या नंतर व्दिभाषीक मुंबई राज्याचे व मराठी भाषिकांच्या महाराष्ट्र राज्याचे मुख्यमंत्री पदी विराजमान होणाऱ्या यशवंतराव चव्हाण महाराष्ट्रास पुरोगामी दिशेने वाटचाल करण्यास प्रवृत्त केल्याचे दिसून येते. त्यांनी सामाजिक समरसता प्रस्थापित करण्याचा प्रयत्न केला आणि राजकीय विचारांची मत भिन्नता जरी असली तरी सर्वसामान्य लोकांच्या हितासाठी, प्रगतीसाठी आपले भिन्नत्व बाजूला ठेवून एकत्र येण्यास राजकीय विरोधकांनासुध्दा बाध्य केल्याचे दिसून येते. सन.1956 च्या बाबासाहेबांच्या बौद्ध धर्मांतरा नंतर अस्पृश्य, नवदीक्षित बौद्धा संदर्भात ग्रामीण भागात जो अन्याय, अत्याचार, हिंसा, गाव बहिष्काराच्या घटना घडत होत्या त्याचा त्यांनी शासन प्रमुख या नात्याने आणि पुरोगामी विचाराचा एक व्यक्ती या नात्याने उपरोक्त घटना होऊ नये यासाठी प्रयत्न केल्याचे दिसून येते या शिवाय अस्पृश्य, नवदीक्षित बौद्धाच्या सामाजिक, आर्थिक प्रश्नांच्या अनुषंगाने सुध्दा कार्य केल्याचे दिसून पडते. उदा. 'महार वतन' या गुलामीचे प्रतिक असलेली व्यवस्था त्यांनी कायद्याच्या माध्यमातून कायमचे नष्ट केले, तर धर्मांतरानंतर अस्पृश्यांच्या सवलती शासनाकडून बंद झाल्या होत्या त्या त्यांनी प्रथमत: महाराष्ट्रात पुन्हा सुरू केल्या, भूमिहीनास जमिनी उपलब्ध करून देऊन त्यांचा जगण्याचा प्रश्न काही अंशी का असेना मिटविला, नवदीक्षित बौद्धांची दीक्षाभूमी जागेची मागणी मान्य करणे एवढेच नाही तर डॉ. बाबासाहेब आंबेडकरांच्या जयंतीला शासकिय सुट्टी लागू करणे या सर्व घटनांचा आढावा घेतले असता आपणास यशवंतराव चव्हाण यांचे पददलीत, अस्पृश्य, नवदीक्षित बौद्धाविषयीचे पुरोगामी कार्य लक्षात येईल.

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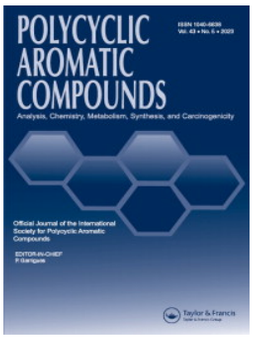

Polycyclic Aromatic Compounds

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Synthesis of New Amide Linked Biphenoloxy 1,2,3-Triazoles as Antitubercular and Antimicrobial Agents

Sambhaji T. Dhumal[a], Tejshri R. Deshmukh[b], Kishan P. Haval[c], Vagolu Siva Krishna[d], Dharmarajan Sriram[d], Vijay M. Khedkar[e], Naziya N. M. A. Rehman[f], Prashant P. Dixit[f], and Ramrao A. Mane[b]

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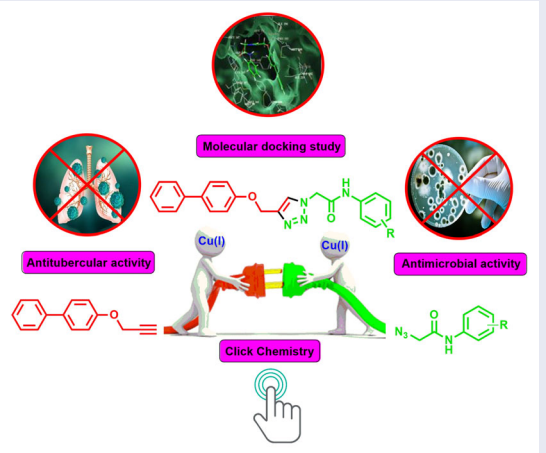
ABSTRACT

New 1,2,3-triazoles bearing biphenoloxymethyl and acetanilido moieties (**5a-5l**) have been synthesized, starting from 4-phenylphenol (**1**) following click chemistry approach. The synthesized compounds have been thoroughly characterized by their ^{1}H NMR, ^{13}C NMR and HRMS spectral data. These compounds were evaluated for their *in vitro* antitubercular activity against *Mycobacterium tuberculosis* $H_{37}Rv$ and antimicrobial activity against pathogenic microbia. Among the screened compounds, **5a** and **5i** have displayed notable antitubercular activity with MIC 25 μg/mL. Compounds **5a**, **5b**, **5c, 5 g**, **5i** and **5 l** have shown effective inhibition against most of tested pathogens. Molecular docking results of compounds **5a** and **5i** show the binding modes of the synthesized compounds into the active site of mycobacterial enoyl reductase. The synthesized compounds have also been analyzed for their ADME properties. By considering all these results, the present research work will offer a promising lead series for discovery of emerging potent antitubercular agents.



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Introduction

Tuberculosis (TB) is an infectious disease caused by pathogen, *Mycobacterium tuberculosis* (MTB).[1] Tuberculosis is now found in every corner of the globe and is the second largest infectious disease, creating severe public health problem. Tuberculosis primarily targets lungs and then other organs namely; intestine, meninges, bones, joints, and almost every other organ.[2] Despite its known etiology, tuberculosis still remains one of the most threatening health problems globally, claiming more than two million fatalities each year with almost nine million new cases.[3] The currently practised DOTS (Directly observed Treatment, short-term) therapy needs longer duration for treatment and therefore, the pathogenic strains, responsible for tuberculosis have acquired resistance to drugs.[4] New forms of tuberculosis like multi drug-resistant tuberculosis (MDR-TB), extensively drug-resistant tuberculosis (XDR-TB) and totally drug-resistant tuberculosis (TDR-TB) have emerged.[5] Therefore, most of the chemists focuses on the syntheses of library of new analogues of existing drugs or new chemical entities with hope to obtain better antitubercular activity.

In search of potent antitubercular agents, nitrogen-containing heterocycles particularly, 1,2,3-triazoles are gaining immense importance due to their broad spectrum applications in different areas such as bioconjugations, surface sciences, polymers, biochemical, supramolecular chemistry and pharmaceuticals.[6] Among the various 1,2,3-triazoles, 1,4-disubstituted-1,2,3-triazole derivatives have been receiving serious attention because of their diverse pharmacological activities such as antimicrobial,[7] antibacterial,[8] antitubercular,[9] antidiabetic,[10] anticancer,[11] and antiviral.[12] Literature survey also revealed that 1,2,3-Triazole and its derivatives have also been used as various enzyme inhibitors against histone deacetylase, alkaline phosphatase, cysteine protease and acetylcholinesterase.[6] 1,2,3-Triazole scaffold is an attractive prototype, as it is remarkably stable under oxidative/reductive conditions, enzymatic degradation and is capable to exhibit hydrogen bonding, dipole-dipole moments and π-stacking interactions.[13] These unique features of 1,2,3-triazole have increased its importance in the field of medicinal chemistry as they bind with the biological targets with high affinity due to its improved solubility.[14]

1,2,3-triazole is also reported as a core structural moiety in several important antifungal agents *viz*. Fluconazole, Itraconazole, Voriconazole and Ketoconazole.[15] These aforementioned broad and potent activities of triazole and its derivatives have established them as pharmacologically active scaffolds.

Owing to the therapeutic significance of 1,2,3-triazoles, in recent years a library of 1,2,3-triazoles have been synthesized and their antitubercular and antimicrobial activities reported.[16–19] Some molecules possessing antitubercular activity are shown in Figure 1.

Keeping in view the therapeutic significance of triazoles for developing new leads possessing excellent antitubercular and antimicrobial activities,[20–25] here, we have decided to design and synthesize the titled compounds, 2-(4-(([1,1′-biphenyl]-4-yloxy)methyl)-1*H*-1,2,3-triazol-1-yl)-*N*-phenylacetamides (**5a-5l**) and to evaluate them for *in vitro* antitubercular activity against *Mycobacterium tuberculosis* $H_{37}Rv$ and antimicrobial activity against potent bacterial and fungal pathogens.

Experimental

General

Chemicals and solvents were procured from Merck and S. D. fine chem. Melting points were determined in open capillary and are uncorrected. Reactions were monitored by thin layer chromatography (TLC) on silica gel plates (GF 254) using UV light to visualize the course of the reactions. ^{1}H NMR spectra and ^{13}C NMR spectra were recorded on Bruker Avance 300–500 (FT-NMR) and Bruker DRX-300 instruments, respectively, using $CDCl_3$ and DMSO-d_6 as solvent.

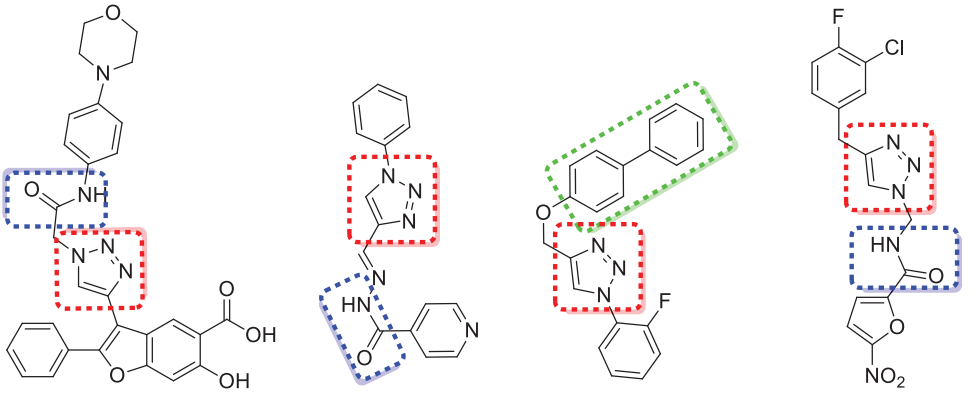


Figure 1. 1,2,3-triazoles containing Bioactive molecules.

Chemical shifts are reported in δ ppm with TMS as internal standard. High-resolution mass spectra (HRMS) were obtained using the Agilent 6520 (Q-TOF) ESI-HRMS instrument. Routine monitoring of reaction was performed by TLC using 0.25 mm E. Merck precoated silica gel TLC plates (60 F254) hexane:ethyl acetate as eluent.

Synthesis of 4-(prop-2-yn-1-yloxy)-1,1′-biphenyl (1)[18]

Off white solid, yield 82%, M.P.: 83–85 °C.

General procedure for the synthesis of 2-(4-(([1,1′-biphenyl]-4-loxy)methyl)-1H-1,2,3-triazol-1-yl)-N-phenylacetamides (5a-5l)

In a round bottom flask, 4-(prop-2-yn-1-yloxy)-1,1′-biphenyl (**1**) (0.0024 mol) and freshly prepared substituted 2-azido-*N*-phenylacetamides (**2a-2l**) (0.0024 mol) were stirred in presence of copper sulfate (20 mol%) and sodium ascorbate (20 mol%) in PEG-400: H_2O (1:1). The progress of the reaction was monitored by thin layer chromatography using ethyl acetate: hexane (3:7) as solvents. After stirring for 4h, the reaction mass was poured in ice cold water. The obtained solid was filtered, washed with water and crystalized from ethanol:DMF.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-phenylacetamide (5a)

White solid, yield 93%, M.P.: 240–241 °C; IR (KBr) cm^{-1}: 3390, 2870, 2354, 1665, 1365, 1225, 1032, 852, 691; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 5.23 (s, 2H, NCH_2), 5.36 (s, 2H, OCH_2), 7.07–7.63 (m, 14H, merged signals, Ar-H), 8.28 (s, 1H, triazolyl-H), 10.46 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 52.8 (NCH_2), 61.7 (OCH_2), 115.8, 119.8, 124.9, 126.8, 126.8, 127.3, 128.3, 129.4, 129.4, 133.4, 139.0, 140.4, 143.1, 156.3, 164.7 (C = O); HRMS $(ESI)^+$ calcd. for $C_{23}H_{21}N_4O_2$ $[M+H]^+$: 385.1620, found 385.1130.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(2-tolyl)acetamide (5b)

White solid, yield 90%, M.P.: 260–262 °C; IR (KBr) cm^{-1}: 3250, 2980, 2354, 1670, 1604, 1492, 1224, 996, 745, 562; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 2.24 (s, 3H, CH_3), 5.23 (s, 2H, NCH_2), 5.41 (s, 2H, OCH_2), 7.11–7.62 (m, 13H, merged signals, Ar-H), 8.28 (s, 1H, triazolyl-H), 9.79 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 18.4 (CH_3), 52.6 (NCH_2), 61.7 (OCH_2), 115.8, 125.3, 126.1, 126.6, 126.8, 126.8, 127.3, 128.3, 129.4, 131.0, 132.2, 133.5,

136.1, 140.7, 143.1, 158.3, 164.9 (C = O); HRMS (ESI)$^+$ calcd. for $C_{24}H_{23}N_4O_2$ $[M+H]^+$: 399.1776, found 399.1818.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(3-tolyl)acetamide (5c)

White solid, yield 89%, M.P.: 210–211 °C; IR (KBr) cm^{-1}: 3351, 2972, 2361, 1662, 1586, 1348, 1214, 1028, 728, 580; ^{1}H NMR (400 MHz, DMSO-d$_6$) δ ppm = 2.28 (s, 3H, CH_3), 5.23 (s, 2H, NCH_2), 5.34 (s, 2H, OCH_2), 6.90–7.63 (m, 13H, merged signals, Ar-H), 8.27 (s, 1H, triazolyl-H), 10.38 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d$_6$) δ ppm = 21.7 (CH_3), 49.2 (NCH_2), 61.7 (OCH_2), 115.7, 117.0, 120.8, 125.1, 126.8, 127.2, 127.3, 128.3, 129.3, 129.4, 133.5, 138.7, 138.9, 140.4, 143.7, 158.3, 164.7 (C = O); HRMS (ESI)$^+$ calcd. for $C_{24}H_{23}N_4O_2$ $[M+H]^+$: 399.1776, found 399.1824.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(4-tolyl)acetamide (5d)

Off white solid, yield 92%, M.P.: 240–242 °C; IR (KBr) cm^{-1}: 3136, 2868, 2361, 1661, 1496, 1214, 1028, 1006, 819, 506; ^{1}H NMR (400 MHz, DMSO-d$_6$) δ ppm = 2.26 (s, 3H, CH_3), 5.23 (s, 2H, NCH_2), 5.35 (s, 2H, OCH_2), 7.13–7.64 (m, 13H, merged signals, Ar-H), 8.28 (s, 1H, triazolyl-H), 10.40 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d$_6$) δ ppm = 21.0 (CH_3), 52.8 (NCH_2), 61.7 (OCH_2), 115.7, 119.8, 126.8, 126.9, 127.3, 128.4, 129.5, 129.9, 133.4, 133.4, 136.4, 140.3, 143.1, 158.3, 164.5 (C = O); HRMS (ESI)$^+$ calcd. for $C_{24}H_{23}N_4O_2$ $[M+H]^+$: 399.1776, found 399.1794.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(2-chlorophenyl)acetamide (5e)

White solid, yield 87%, M.P.: 224–225 °C; IR (KBr) cm^{-1}: 3146, 2960, 2354, 1668, 1593, 1261, 1168, 1045, 790, 685, 556; ^{1}H NMR (400 MHz, DMSO-d$_6$) δ ppm = 5.25 (s, 2H, NCH_2), 5.48 (s, 2H, OCH_2), 7.15–7.78 (m, 13H, merged signals, Ar-H), 8.28 (s, 1H, triazolyl-H), 10.02 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d$_6$) δ ppm = 52.6 (NCH_2), 61.7 (OCH_2), 115.8, 126.5, 126.8, 126.8, 126.9, 127.3, 128.1, 128.3, 129.4, 130.2, 133.5, 134.8, 140.4, 143.2, 143.4, 158.3, 164.5 (C = O); HRMS (ESI)$^+$ calcd. for $C_{23}H_{19}ClN_4O_2$ $[M+H]^+$: 419.1230, found 419.1276.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(3-chlorophenyl) acetamide (5f)

White solid, yield 85%, M.P.: 165–168 °C; IR (KBr) cm^{-1}: 3146, 2970, 2354, 1679, 1598, 1377, 1220, 1168, 1022, 824, 528; ^{1}H NMR (400 MHz, DMSO-d$_6$) δ ppm = 5.25 (s, 2H, NCH_2), 5.40 (s, 2H, OCH_2), 7.09–7.80 (m, 13H, merged signals, Ar-H), 8.30 (s, 1H, triazolyl-H), 10.69 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d$_6$) δ ppm = 52.6 (NCH_2), 70.2 (OCH_2), 115.6, 118.1, 119.2, 124.0, 126.6, 126.7, 127.2, 128.2, 129.2, 131.1, 133.3, 133.6, 140.2, 140.2, 143.0, 158.1, 165.1 (C = O); HRMS (ESI)$^+$ calcd. for $C_{23}H_{19}ClN_4O_2$ $[M+H]^+$: 419.1230, found 419.1273.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(4-chlorophenyl)acetamide (5 g)

Pale yellow solid, yield 92%, M.P.: 225–227 °C; IR (KBr) cm^{-1}: 3252, 2945, 2361, 1668, 1605, 1504, 1377, 1220, 1168, 1022, 824, 528; ^{1}H NMR (400 MHz, DMSO-d$_6$) δ ppm = 5.24 (s, 2H, NCH_2), 5.37 (s, 2H, OCH_2), 7.15–7.64 (m, 13H, merged signals, Ar-H), 8.28 (s, 1H, triazolyl-H), 10.61 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d$_6$) δ ppm = 57.5 (NCH_2), 75.1 (OCH_2), 120.5, 126.2, 131.5, 131.7, 132.1, 132.6, 132.9, 133.1, 134.2, 134.2, 138.2, 142.6, 145.1, 163.0, 169.7 (C = O); HRMS (ESI)$^+$ calcd. for $C_{23}H_{19}ClN_4O_2$ $[M+H]^+$: 419.1230, found 419.1279.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(3-methoxyphenyl) acetamide (5h)
White solid, yield 86%, M.P.: 192–194 °C; IR (KBr) cm^{-1}: 3306, 2937, 2354, 1674, 1598, 1502, 1220, 999, 790, 533; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 3.73 (s, 3H, OCH_3), 5.23 (s, 2H, NCH_2), 5.36 (s, 2H, OCH_2), 6.66–7.63 (m, 13H, merged signals, Ar-H), 8.29 (s, 1H, triazolyl-H), 10.47 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 55.6, 61.7 (NCH_2), 70.4 (OCH_2), 105.6, 109.9, 112.1, 115.7, 126.8, 126.9, 127.3, 128.3, 129.4, 130.3, 133.5, 140.2, 143.2, 158.3, 160.2, 164.2 (C = O); HRMS (ESI)$^+$ calcd. for $C_{24}H_{22}N_4O_3$ $[M+H]^+$: 415.1725, found 415.1782.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(4-methoxyphenyl) acetamide (5i)
Off white solid, yield 91%, M.P.: 242–244 °C; IR (KBr) cm^{-1}: 3203, 3134, 2354, 1668, 1604, 1523, 1220, 1040, 795, 533; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 3.73 (s, 3H, OCH_3), 5.23 (s, 2H, NCH_2), 5.33 (s, 2H, OCH_2), 6.90–6.93 (d, 2H, J = 8Hz, Ar-H), 7.15–7.17 (d, 2H, J = 8Hz, Ar-H), 7.49–8.28 (m, 9H, merged signals, Ar-H), 8.32 (s, 1H, triazolyl-H), 10.37 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 57.7, 61.6 (NCH_2), 79.7 (OCH_2), 114.6, 115.7, 121.4, 126.8, 127.3, 128.4, 129.5, 132.1, 133.4, 140.3, 143.0, 156.1, 158.3, 164.2 (C = O); HRMS (ESI)$^+$ calcd. for $C_{24}H_{22}N_4O_3$ $[M+H]^+$: 415.1725, found 415.1768.

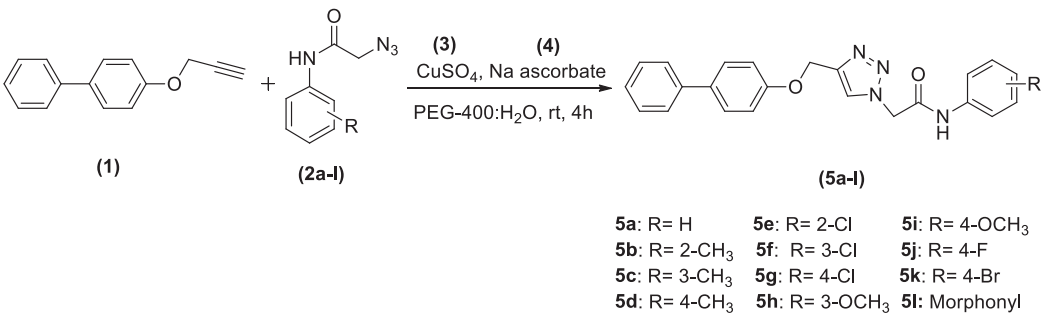
2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(4-fluorophenyl)acetamide (5j)
Off white solid, yield 88%, M.P.: 223–225 °C; IR (KBr) cm^{-1}: 3146, 2971, 2354, 1668, 1502, 1231, 1027, 824, 790, 533; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 5.23 (s, 2H, NCH_2), 5.36 (s, 2H, OCH_2), 7.15–7.70 (m, 13H, merged signals, Ar-H), 8.32 (s, 1H, triazolyl-H), 10.55 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 52.7 (NCH_2), 61.7 (OCH_2), 115.7, 116.2, 121.6, 121.7, 126.8, 126.8, 127.3, 128.3, 129.4, 133.4, 140.3, 143.1, 158.3, 164.7 (C = O); HRMS (ESI)$^+$ calcd. for $C_{23}H_{19}FN_4O_2$ $[M+H]^+$: 403.1526, found 403.1568.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-N-(4-bromophenyl)acetamide (5k)
Pale yellow solid, yield 89%, M.P.: 222–223 °C; IR (KBr) cm^{-1}: 3150, 2966, 2354, 1668, 1604, 1372, 1226, 1034, 830, 790, 539; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 5.23 (s, 2H, NCH_2), 5.37 (s, 2H, OCH_2), 7.14–7.63 (m, 13H, merged signals, Ar-H), 8.29 (s, 1H, triazolyl-H), 10.65 (s, 1H, amido-NH); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 52.8 (NCH_2), 61.6 (OCH_2), 115.7, 116.0, 121.8, 126.8, 126.8, 127.3, 128.3, 129.5, 132.3, 133.4, 138.3, 140.3, 143.1, 158.3, 165.0 (C = O); HRMS (ESI)$^+$ calcd. for $C_{23}H_{19}BrN_4O_2$ $[M+H]^+$: 463.0725 and found 463.0770.

2-(4-(([1,1′-Biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-1-morpholino ethanone (5 l)
Green solid, yield 80%, M.P.: 268–270 °C; IR (KBr) cm^{-1}: 3152, 2983, 2356, 1668, 1598, 1220, 1068, 998, 790, 558; ^{1}H NMR (400 MHz, DMSO-d_6) δ ppm = 3.46–3.47 (m, 2H, morphinyl ring-H), 3.51–3.54 (m, 2H, morphinyl ring-H), 3.58–3.59 (m, 2H, morphinyl ring-H), 3.64–3.65 (m, 2H, morphinyl ring-H), 5.21 (s, 2H, NCH_2), 5.49 (s, 2H, OCH_2), 7.13–7.63 (m, 9H, merged signals, Ar-H), 8.13 (s, 1H, triazolyl-H); ^{13}C NMR (100 MHz, DMSO-d_6) δ ppm = 45.3, 51.2 (NCH_2), 61.8 (OCH_2), 66.5, 115.8, 126.8, 126.9, 127.3, 128.3, 129.4, 133.4, 140.4, 143.0, 158.3, 165.0 (C = O); HRMS (ESI)$^+$ calcd. for $C_{21}H_{23}N_4O_3$ $[M+H]^+$: 379.1725, found 379.1773.

Results and discussion

A convenient synthetic path has been developed to obtain the titled compounds, 2-(4-(([1,1′-biphenyl]-4-yloxy)methyl)-1H-1,2,3-triazol-1-yl)-*N*-phenylacetamides (**5a-5l**), starting from



Scheme 1. Synthesis of new 2-(4-(([1,1′-biphenyl]-4-yloxy)methyl)-1*H*-1,2,3-triazol-1-yl)-*N*-phenylacetamides (**5a-5l**).

4-phenylphenol by following click chemistry. 4-Phenylphenol has been condensed with propargyl bromide in the presence of K_2CO_3 in DMF to afford desired starting material biphenyloxymethyl ethyne (**1**). It was then allowed to interact with substituted 2-azido-*N*-phenylacetamides **(2a-2l)** in the presence of $CuSO_4$ **(3)** and sodium ascorbate **(4)** as catalyst in PEG-400: H_2O (1:1) for 4 h to yield the cyclo addition titled products, 2-(4-(([1,1′-biphenyl]-4-loxy)methyl)-1*H*-1,2,3-triazol-1-yl)-*N*-phenylacetamides (**5a-5l**) (Scheme 1) with better to excellent yields. The physical data of the compounds (**5a-5l**) is recorded in Table 1.

These synthesized compounds were thoroughly characterized by their ^{1}H NMR, ^{13}C NMR and HRMS spectral data. The IR spectrum of compound **5a** has shown characteristic peak at 1566 cm^{-1} which corresponds to the C = N bond. The ^{1}H NMR spectrum of one of the representative compound **5a** displays peaks at δ 5.23, 5.36, 8.28 and 10.46 ppm, as four singlets due to the NCH_2, OCH_2, triazolyl-H and amido-NH, respectively, and a multiplet in the region δ 7.07 to 7.63 ppm due to the merged signals of 14 aromatic-H. The presence of three characteristics carbon signals are observed at δ 52.8, 61.7 and 164.7 ppm in ^{13}C NMR spectrum of compound **5a**, owing to the signals of NCH_2, OCH_2 and amido carbon group, respectively. The HRMS spectrum of compound 2-(4-(([1,1′-biphenyl]-4-yloxy)methyl)-1*H*-1,2,3-triazol-1-yl)-*N*-phenylacetamide **5a** showing $[M+H]^+$ ion peak at m/z 385.1130 for its molecular formula $C_{23}H_{20}N_4O_2$, confirming the formation of a 1,2,3-triazole ring. The detailed experimental procedures and spectral data of all the new compounds (**5a-5l**) are given in the supplementary materials.

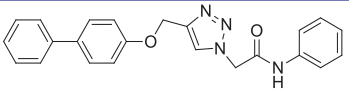
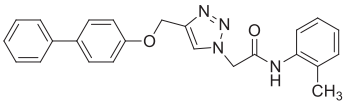
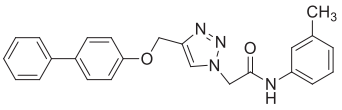
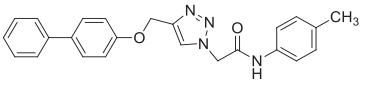
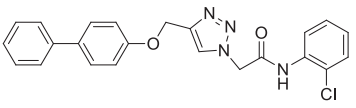
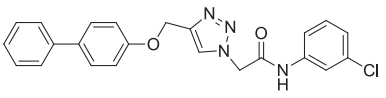
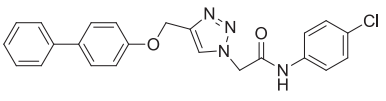
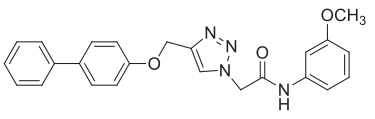
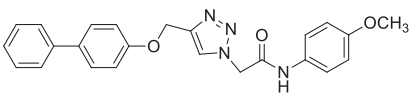
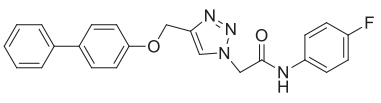
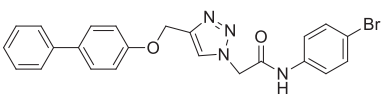
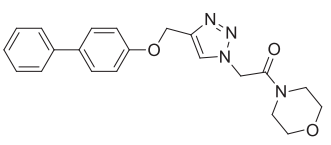
Antitubercular activity

The newly synthesized compounds (**5a-5l**) were evaluated for their *in vitro* antitubercular evaluation against *Mycobacterium tuberculosis* H_{37}Rv. It is evident from Table 1 that most of synthesized compounds have shown moderate antitubercular activity compared to standard drug, rifampicin. Among the newly synthesized compounds **5a** and **5i** were found to be active against *Mycobacterium tuberculosis* H_{37}Rv. The compound **5a** have phenyl acetamido moiety shown MIC 25 µg/mL. The compound **5i** with 4-methoxy phenyl acetamido moiety has also displayed moderate inhibitory activity with MIC 25 µg/mL.

Antimicrobial activity

The antimicrobial activity of the synthesized compounds (**5a-5l**) was evaluated against potent bacterial and fungal pathogens. The antimicrobial activity of the synthesized compounds was determined by the agar well diffusion method.[26] Fluconazole and tetracycline were used as internal references for antifungal and antibacterial activities, respectively. Among the synthesized compounds, **5a**, **5b**, **5c**, **5 g,** **5i** and **5 l** have shown effective inhibition against all pathogens. Activity

Table 1. Physical data and antitubercular activity of newly synthesized compounds (**5a-5l**).

Compound	Structures	M. P. (o C)	Yields (%)	MIC (μg/mL)
5a		240–241	93	25
5b		260–262	90	>25
5c		210–211	89	>25
5d		240–242	92	>25
5e		224–225	87	>25
5f		165–168	85	>25
5g		225–227	92	>25
5h		192–194	86	>25
5i		242–244	91	25
5j		223–225	88	>25
5k		222–223	89	>25
5l		268–270	80	>25

MIC values of Isoniazid and Rifampicin is 0.1 and 0.2 μg/mL, respectively.

of compounds **5b** and **5 g** against *E. coli*, *S. typhi* and *S. boydii* was noteworthy. Compound **5l** also showed good activity against *S. boydii* and *S. cerevisiae*. Compound **5l** was found to be active against fungal pathogens, *S. cervisiae* and *C. albicans* (Table 2).

Table 2. Antibacterial and antifungal activities of synthesized 1,2,3-triazoles (**5a-5l**).

Compounds→Bacterial Pathogens↓	5a	5b	5c	5d	5e	5f	5g	5h	5i	5j	5k	5l	Tetracycline as Standard (mm)
S. typhi ATCC 9207	26	16	12	06	02	01	14	06	06	03	03	10	33
E. aerogenes ATCC 13048	15	06	10	01	00	10	15	02	05	00	01	06	29
B. subtilis ATCC 6633	07	05	13	00	00	00	09	01	04	00	00	06	32
B. cereus ATCC 1177	12	05	14	01	03	08	20	06	10	01	00	05	33
P. aerogenosa ATCC 9027	05	06	09	02	00	01	10	00	09	02	01	06	32
S. abony NCTC 6017	07	07	12	02	00	05	13	02	06	00	02	06	32
E. coli ATCC 8739	16	09	08	01	01	10	14	00	05	02	03	05	29
S. aureus ATCC 6538	06	06	10	03	03	02	14	08	05	01	00	13	29
S. boydii ATCC 12034	05	11	13	02	00	15	23	03	14	02	00	15	34
Compounds→Fungal Pathogens↓	**5a**	**5b**	**5c**	**5d**	**5e**	**5f**	**5g**	**5h**	**5i**	**5j**	**5k**	**5l**	**Fluconazole as Standard (mm)**
S. cerevisiae ATCC 9763	05	07	06	01	01	00	15	02	06	01	02	15	30
A. niger ATCC 16404	08	06	05	02	00	03	06	01	04	01	01	04	30
C. albicans ATCC 10231	06	06	06	00	02	02	05	00	07	01	00	13	30

Diameter of zone of inhibition is given in millimeters (mm).

Table 3. MIC Values in μg/mL of most potent compounds.

Compounds → Pathogens↓	5a	5b	5c	5g	5i	5l	Tetracycline	Fluconazole
S. typhi	60	80	150	120	350	320	20	NA
B. subtilis	340	450	220	300	900	450	35	NA
B. cereus	170	460	170	70	280	530	30	NA
E. coli	110	230	280	160	600	550	25	NA
S. aureus	530	490	330	150	570	190	20	NA
S. boydii	600	180	230	40	130	140	20	NA
S. cerevisiae	550	510	650	130	340	130	NA	12
A. niger	410	620	850	470	850	630	NA	08
C. albicans	560	610	720	520	370	290	NA	30

NA: Not applicable.

Minimum inhibitory concentration (MIC)

In this present study, the MIC was determined for the most potent selected antimicrobial compounds **5a**, **5b**, **5c**, **5 g**, **5i** and **5 l**. MIC was deduced by following the method and guidelines of Clinical and Laboratory Standard Institute (CLSI). The results are recorded in Table 3.

Docking analysis

Promising level of anti-tubercular activities demonstrated by the two compounds **5a** and **5i** in the *in vitro* cell-based assay prompted us to perform molecular docking studies to elucidate their plausible mechanism of antitubercular activity, which could serve as potential starting points for structure-based lead optimization. Mycobacterial enoyl-ACP-reductase (FabI/ENR/InhA) plays a crucial role in the fatty acids elongation cycle, a step essential for mycolic acid biosynthesis through the mycobacterial type II fatty acid biosynthesis pathway.[20] Mycolic acids are very long chain α-alkyl β-hydroxy fatty acids (C74-C90) covalently linked to arabino-galactan which forms the major component of the mycobacterial cell wall. These acids provide protection from commonly used antibiotics, and are also significantly responsible for mycobacterial virulence. Inhibition of InhA efficiently helps to kill *Mycobacterium tuberculosis* under aerobic and anaerobic conditions by blocking the biosynthesis of this vital cell wall component i.e. mycolic acid and consequential cell lysis.[27] Furthermore, literature survey demonstrated the potential of triazolyl scaffolds to inhibit mycobacterial InhA. This encourages the selection of target to evaluate the binding affinity of titled compounds toward the crucial cell wall.[28–32] Molecular docking study

was carried out using the standard protocol implemented in the GLIDE (Grid-based Ligand Docking with Energetics) module of the Schrodinger molecular modeling package[33] to predict the binding modes of **5a** and **5i** into the active site of InhA.[34–37] Firstly, the molecular docking protocol was validated by extracting the co-crystallized ligand from the protein complex and re-docked into the active site. An overlay of the docked pose over the X-ray conformation showed that molecular docking protocol could reproduce the experimental binding mode with an RMSD of less than 0.1 Å (Figure S1 in supporting information).

From the ensuing docked conformations, it is observed that both the triazole analogues (**5a** - Figure 2 and **5i** - Figure 3) are deeply embedded into the active site of InhA with significant affinity (docking score: −8.957 (**5a**) and −8.594 (**5i**)) engaging in multiple bonded and non-bonded interactions with the residues lining the active site. Interestingly, they could accommodate well at the same site as the co-crystallized ligand with similar network of non-bonded and bonded interactions (Figure S2 in supporting information). Quantitative estimates of the per-residue interactions (Table 4 in supporting information) reveal that both compounds are stabilized within the active site through an extensive network of significant Van der Waals interactions with Leu218, Ile215, Ile194, Pro193, Ala191, Tyr158, Ala157, Met155 and Met103 residues *via* biphenyl-4-yloxy methyl component while the 1,2,3-triazole nucleus showed similar interactions

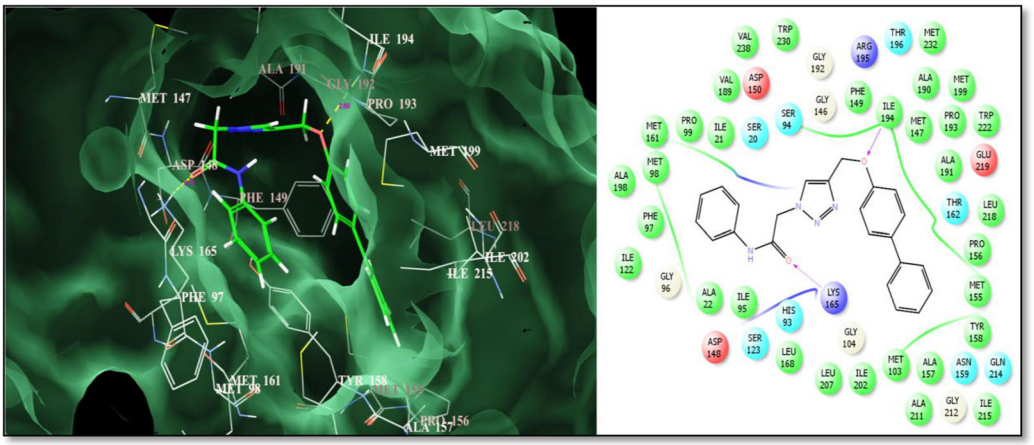


Figure 2. Binding mode of compound **5a** into the active site of mycobacterial enoyl reductase (InhA).

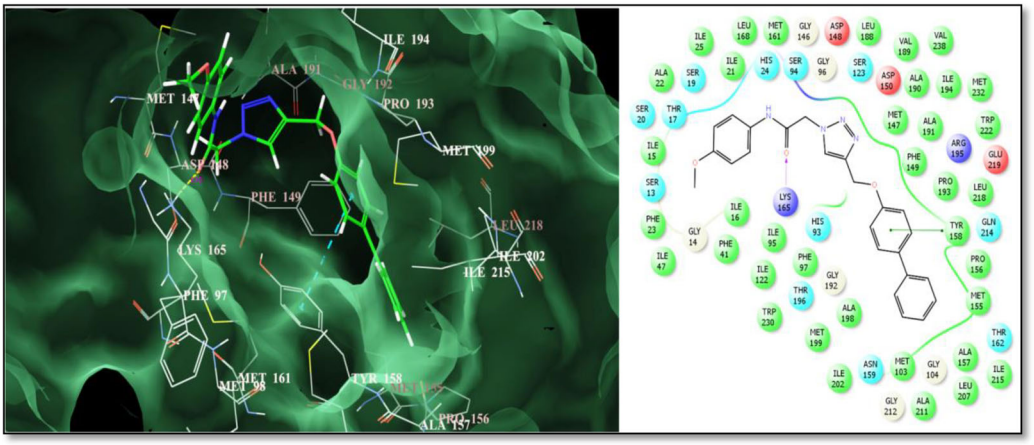


Figure 3. Binding mode of compound **5i** into the active site of mycobacterial enoyl reductase (InhA).

with Met199, Gly192, Phe149, Met147 and Ser94 residues. The *N*-phenyl acetamide side chain in compound **5a** and *N*-(4-methoxyphenyl) acetamide side of compound **5i** have shown significant Van der Waals interactions with Lys165, Met161, Asp148, Phe97, Gly96, Ile95, Ile21, Ser20 and Gly14 residues lining the active site of InhA. The enhanced binding affinity of these two compounds were also attributed to an equally significant array of electrostatic interactions observed with Glu220, Glu219, Glu210, Gly209, Gly192, Ala191, Lys165, Pro156 and Ser94 residues. These balanced set of steric and electrostatic interactions were major determinants in the binding of **5a** and **5i** to the active sites of InhA, which were further complimented by prominent hydrogen-bonding interactions observed between the amide oxygen (-CONH-) and Lys 165 residue. Compound **5a** showed an additional hydrogen bond with Ile94 through the ether linkage (-O-) while compound **5i** has displayed a close pi-pi (π- π) stacking interactions between the biphenyl component and the Tyr158 residue contributing additionally to the stability of **5a** and **5i** within the active site of InhA. These hydrogen-bonding and the pi-pi (π-π) stacking interactions serve as 'anchor' to guide the 3D orientation of ligand into the active site and facilitate the steric and electrostatic interactions with the enzyme. These results suggest that biphenyloxy tethered amide linked 1,2,3-triazoles possess promising binding affinity toward this crucial Mtb target InhA providing scope for structure-based lead optimization.

In silico ADME prediction

Good efficacy and an acceptable ADME (absorption, distribution, metabolism and excretion) profile are the most important properties of any successful drug. ADME properties prediction is one of the widely known pharmacokinetic parameters for the prediction of the oral bioavailability of any drug. Therefore, here we have predicted the in *silico* ADME properties of the newly synthesized 2-(4-(([1,1′-biphenyl]-4-yloxy)methyl)-1*H*-1,2,3-triazol-1-yl)-*N*-phenylacetamides (**5a-5l**).

In this study, we have calculated the aforementioned properties and Lipinski's rule of five[38] of newly synthesized compounds using Molinspiration online property calculation toolkit.[39] A compound is considered an orally active drug as well as obeys the Lipinski's rule of five if there is only one violation observed out of the following four criteria's: miLog P (octanol-water partition coefficient) $\leq$5, molecular weight $\leq$500, number of hydrogen bond acceptors $\leq$10 and number of hydrogen bond donors $\leq$5. Other than this absorption (% ABS) of all the derivatives of the series was calculated by the formula,[40]

$$\%\ \mathrm{ABS} = 109 - (0.345\ \times\ \mathrm{TPSA})$$

Table 4. Pharmacokinetic parameters for *in silico* ADME prediction of 1,2,3-triazoles (**5a-5l**).

Entry	% ABS[a]	TPSA[b] (A^2)	n-ROTB[c]	MV[d]	MW[e]	miLogP[f]	n-ON[g]	n-OH NH[h]	Lipinski violations[i]	Drug likeness model score
Rule	-	-	-	-	<500	≤5	<10	<5	≤1	–
5a	85.18	69.05	7	331.66	384.43	5.37	5	1	0	0.49
5b	85.18	69.05	7	345.19	398.46	6.21	5	1	0	0.77
5c	85.18	69.05	7	345.19	398.46	6.24	5	1	0	0.32
5d	85.18	69.05	7	345.19	398.46	6.05	5	1	0	0.42
5e	85.18	69.05	7	349.54	418.88	6.34	5	1	0	0.93
5f	85.18	69.05	7	349.54	418.88	6.37	5	1	0	0.49
5g	85.18	69.05	7	357.20	418.88	5.59	6	1	1	1.02
5h	81.99	78.28	8	357.20	414.46	5.43	6	1	0	0.34
5i	81.99	78.28	8	341.52	414.46	5.84	5	1	0	0.20
5j	85.18	69.05	7	381.34	402.42	7.00	5	1	0	0.78
5k	85.18	69.05	7	348.46	463.33	5.69	5	1	1	0.62
5l	85.18	69.05	6	353.39	378.42	5.85	5	1	0	0.34

[a]Percentage Absorption; [b]Topographical polar surface area; [c]Number of rotatable bonds; [d]Molecular volume; [e]Molecular Weight; [f]Lipophilicity; [g]No. of hydrogen bond acceptors; [h]No. of hydrogen bond acceptors; [i]Number of violations.

Furthermore, the drug-likeness model score (a collective property of physicochemical properties, pharmacokinetics and pharmacodynamics of a compound is represented by a numerical value) of synthesized compounds (**5a-5l**) were computed by MolSoft software.[41]

It was observed from Table 4 that most of the predictions were within the acceptable range. All the synthesized compounds exhibited very good % ABS ranging from 81.99 to 85.18% and results are shown in Table 4. Drug likeness score were also calculated in order to achieve biological activity of compound. Most of the compounds from the synthesized series showed positive drug likeness score. Results showed that the compounds possess average to good potential for the development as orally active drug molecules.

Conclusions

New 1,2,3-triazoles bearing biphenoloxymethyl and acetanilido moieties (**5a-5l**) have been successfully synthesized with good yields by following click chemistry. All the synthesized compounds were evaluated for their *in vitro* antimicrobial activity against nine and three different strains of bacterial and fungal pathogens, respectively. The bioactivity results shows that compounds **5a**, **5b**, **5c**, **5 g**, **5i** and **5 l** exhibited effective inhibition against various screened pathogens. In addition to this, we have also screened all the compounds for their *in vitro* antitubercular activity against *Mycobacterium tuberculosis* $H_{37}Rv$. Among the series, compounds **5a** and **5i** were acts as active antitubercular agent with MIC value 25 µg/mL. Furthermore, molecular docking investigation supports the most active compounds, which provides a valuable insight into the plausible mechanism of antitubercular action. Moreover, ADME properties of the synthesized compounds have shown good drug-like properties and therefore, the newly synthesized compounds can be acts as potent therapeutic agents.

Acknowledgments

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Disclosure statement

No potential conflict of interest was reported by the author(s).

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ROLE OF UGC & NAAC IN UPLIFTMENT OF HIGHER EDUCATION

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Higher education institutions are responsible for fulfilling academic and non-academic qualifications. Students have a great responsibility to develop reasoning, questioning skills for a better society. UGC and NAAC are two very important organizations for maintaining standards and quality. Initiatives to evaluate colleges and universities improve the education system thereby ensuring quality maintenance and continuous evaluation process and ensuring participation of all stakeholders in the day-to-day activities of the college. This paper tries to bring out the objectives of UGC and NAAC and its benefits to higher education institutions.

Keywords: *NAAC, UGC, Higher Education*

INTRODUCTION

In India, a statutory authority known as the University Grants Commission (UGC) was founded in 1956. Its main duties include directing and coordinating the growth of higher education in the nation and giving financial aid to accredited universities and colleges. The UGC's history is intertwined with the history of Indian higher education because of the pivotal role it has played in defining the higher education landscape in India.

Establishment of UGC

The University Grants Commission Act of 1956 was the vehicle by which the UGC was created

by the Indian government. The basis for the establishment of a national organization in charge of the coordination and advancement of higher education in India was provided by this act. The UGC was created to be similar to the UK's University Grants Committee (UGC), which supported institutions there financially and administratively, served as a model for the UGC. The UGC in India was created with the intention of advancing and upholding the country's higher education standards while also offering financial support to universities and colleges.

Early Years of UGC:

The UGC first concentrated on giving money to universities and colleges so they could upgrade their faculty, facilities, and infrastructure. The introduction of fresh research and training initiatives, as well as the creation of new courses and programmes, were all supported by the UGC. Additionally, the UGC offered funding to help new colleges and universities open up, particularly in rural areas with limited access to higher education.

Higher Education Expansion:

The UGC was instrumental in increasing access to higher education in India during the 1970s and 1980s.The UGC developed new initiatives with the goal of boosting enrollment of students from underserved communities and raising educational standards. The UGC also provided financing for the construction of new structures, the acquisition of new equipment, and the development of new facilities for colleges and universities, particularly in rural and distant locations.

Higher Education Reforms:

The UGC was crucial to India's higher education reform in the 1990s and 2000s. A variety of projects were launched by the UGC with the goals of enhancing educational quality, expanding access to higher education, and fostering research andHigher Education Reforms: The UGC was crucial to India's higher education reform in the 1990s and 2000s. The UGC unveiled a number of programmes designed to raise educational standards, widen access to higher education, and foster creativity and research.

Additionally, the UGC funded new initiatives and programmes and promoted the establishment of new institutions and universities. The UGC was also instrumental in the creation of new projects and programmes targeted at raising the standard of higher education in India. As an illustration, the UGC established the Distant Education Council (DEC), which was in charge of creating and overseeing distance education programmes in India. The National Assessment and Accreditation Council was also introduced by the UGC (NAAC),It was in charge of evaluating and accrediting Indian universities and colleges.

The Chairmen of India's University Grants Commission (UGC) are listed below:

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The NAAC was created to be a standalone organization that would function independently from the UGC and other governmental organizations. The NAAC uses a comprehensive and multi-disciplinary approach to evaluate institutions of higher education, taking into account a number of elements including governance, research, infrastructure, and processes for teaching, learning, and evaluation.

The NAAC has contributed significantly to the advancement of higher education quality in India since its founding. It has become a reputable and trusted quality assurance organization by accrediting thousands of institutions of higher learning across the nation.The NAAC has also built a strong mechanism for ongoing improvement, offering institutions advice and feedback to assist them raise their standards. In conclusion, the NAAC is an essential part of India's higher education system, helping to promote quality and guarantee that institutions of higher learning are providing highly effective, inclusive, and relevant instruction.

NAAC organization

The University Grants Commission (UGC) in India houses the National Assessment and Accreditation Council (NAAC), an autonomous entity. It has a hierarchical structure made up of a number of crucial elements that cooperate to fulfil its objective of advancing quality in higher education.

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Merits of NAAC:

- **Accreditation and evaluation of educational standards:** NAAC offers an organised and thorough evaluation of the educational standards in colleges and institutions. This aids in identifying areas for development and upholding high standards.
- **Promotes self-evaluation:** NAAC supports ongoing improvement and self-evaluation in higher education institutions. This motivates colleges and universities to evaluate their own performance on a frequent basis and try to improve it.
- **Enhances accountability and transparency:** The accreditation process makes sure that higher education institutions operate with accountability and transparency. This makes it easier to guarantee that the schools are giving their students a high-quality education.
- **Enhances reputation:** NAAC accreditation improves a college or university's standing and aids in its ability to draw in additional faculty and students.
- **Promotes best practices and innovation:** The accreditation procedure supports colleges and institutions to adopt innovative teaching methods and best practices in education.

Demerits of NAAC:

- **Limited scope:** NAAC does not evaluate the quality of other types of educational institutions; it only accredits colleges and universities in India.
- **Resource-intensive:** For schools and universities, the accrediting process may be costly and time-consuming.
- **Lack of consistency:** Because the evaluation procedure is carried out by many teams of assessors at various times, there may be a lack of consistency.
- **Institutional burden:** Because colleges and universities are obliged to disclose extensive information on how they operate and perform, the accrediting process can be difficult for them.
- **Limited worldwide recognition:** The NAAC accreditation is only valid in India and

might not be as well-known abroad.

In conclusion, NAAC offers a thorough evaluation of the standard of instruction in Indian higher education institutions. While accreditation offers advantages, it also has drawbacks, therefore schools and universities should carefully consider the costs and advantages of accreditation before pursuing it.

Limited worldwide recognition: The NAAC accreditation is only valid in India and might not be as well-known abroad. The NAAC process has come under fire in recent years, with certain stakeholders alleging that it is not objective and that the standards are not always applicable. Some contend that accreditation is costly and overshadows its advantages since it sets a heavy load on schools and institutions. Nevertheless, despite these concerns, the NAAC continues to be a highly regarded certifying agency in India, and its ratings are frequently used to determine the calibre of institutions of higher learning.

Conclusion:

Over the past many decades, the University Grants Commission (UGC) has been instrumental in the growth of higher education in India. Through a number of initiatives and projects, the UGC has backed the development of access to higher education and promoted the value of education. The UGC has also been crucial in enhancing education quality and fostering research and innovation as part of India's reform of higher education. The UGC's history demonstrates its dedication to promoting and upholding the standards of higher education in the nation, and it continues to play a significant role in the growth of higher education in India. In conclusion, NAAC offers a thorough evaluation of the standard of instruction in Indian higher education institutions. While accreditation offers advantages, it also has drawbacks, therefore schools and universities should carefully consider the costs and advantages of accreditation before pursuing it. To evaluate the NAAC certification process's performance and find areas for improvement, more study is required.

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- Professor Ved Prakash (2007-2010)
- Professor H. Devaraj (2010-2013)
- Professor M. P. Poonia (2013-2016)
- Professor P. S. Athawale (2016-2019)
- Professor SukhadeoThorat (2019-2022)

Merits of NAAC:

- **Accreditation and evaluation of educational standards:** NAAC offers an organised and thorough evaluation of the educational standards in colleges and institutions. This aids in identifying areas for development and upholding high standards.
- **Promotes self-evaluation:** NAAC supports ongoing improvement and self-evaluation in higher education institutions. This motivates colleges and universities to evaluate their own performance on a frequent basis and try to improve it.
- **Enhances accountability and transparency:** The accreditation process makes sure that higher education institutions operate with accountability and transparency. This makes it easier to guarantee that the schools are giving their students a high-quality education.
- **Enhances reputation:** NAAC accreditation improves a college or university's standing and aids in its ability to draw in additional faculty and students.
- **Promotes best practices and innovation:** The accreditation procedure supports colleges and institutions to adopt innovative teaching methods and best practices in education.

Demerits of NAAC:

- **Limited scope:** NAAC does not evaluate the quality of other types of educational institutions; it only accredits colleges and universities in India.
- **Resource-intensive:** For schools and universities, the accrediting process may be costly and time-consuming.
- **Lack of consistency:** Because the evaluation procedure is carried out by many teams of assessors at various times, there may be a lack of consistency.
- **Institutional burden:** Because colleges and universities are obliged to disclose extensive information on how they operate and perform, the accrediting process can be difficult for them.
- **Limited worldwide recognition:** The NAAC accreditation is only valid in India and

might not be as well-known abroad.

In conclusion, NAAC offers a thorough evaluation of the standard of instruction in Indian higher education institutions. While accreditation offers advantages, it also has drawbacks, therefore schools and universities should carefully consider the costs and advantages of accreditation before pursuing it.

Limited worldwide recognition: The NAAC accreditation is only valid in India and might not be as well-known abroad. The NAAC process has come under fire in recent years, with certain stakeholders alleging that it is not objective and that the standards are not always applicable. Some contend that accreditation is costly and overshadows its advantages since it sets a heavy load on schools and institutions. Nevertheless, despite these concerns, the NAAC continues to be a highly regarded certifying agency in India, and its ratings are frequently used to determine the calibre of institutions of higher learning.

Conclusion:

Over the past many decades, the University Grants Commission (UGC) has been instrumental in the growth of higher education in India. Through a number of initiatives and projects, the UGC has backed the development of access to higher education and promoted the value of education. The UGC has also been crucial in enhancing education quality and fostering research and innovation as part of India's reform of higher education. The UGC's history demonstrates its dedication to promoting and upholding the standards of higher education in the nation, and it continues to play a significant role in the growth of higher education in India. In conclusion, NAAC offers a thorough evaluation of the standard of instruction in Indian higher education institutions. While accreditation offers advantages, it also has drawbacks, therefore schools and universities should carefully consider the costs and advantages of accreditation before pursuing it. To evaluate the NAAC certification process's performance and find areas for improvement, more study is required.

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NATIONAL EDUCATION POLICY 2020 FOR HIGHER EDUCATION IN INDIA

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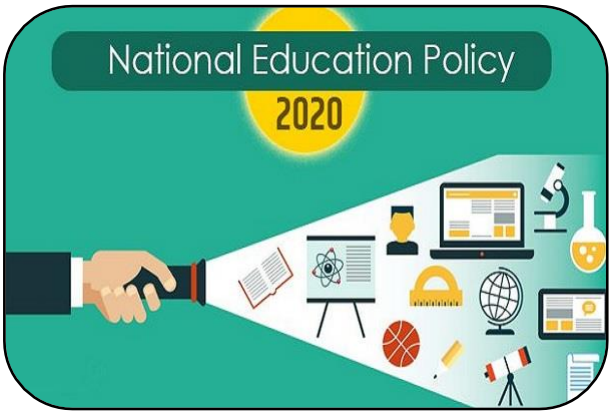

Abstract:

Education has an important and decisive role in this emergency situation. The National Education Policy 2020 has become the framework for this reform, which can help create a new education system in the country besides strengthening those economic and social indicators. It still needs to be improved. NEP 2020 provides quality higher education through multidisciplinary universities and autonomous colleges. We have critically examined the policy in this paper and suggested changes to maintain unbroken continuity with its predecessor to enhance its relevance. The present paper describes the analysis of NEP 2020 provisions and requirements of management practices at university level. Recommendations are made for the design and implementation of NEPs nationally and at HEIs (higher education levels).

Keywords: *Education Policy, Higher Education*

INTRODUCTION

Achieving one's full potential, building a just and equitable society, and fostering national development all depend on education. The key to India's continued ascent and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation is providing universal access to high-quality education. The best strategy for developing and maximizing our nation's abundant talents and resources for the benefit of the individual, society, country, and world is to provide

high-quality education to all students. Over the next ten years, India will have the highest number of young people in the world. Our ability to provide them with high-quality educational opportunities will determine our nation's future.

India adopted Goal 4 (SDG4) of the 2030 Agenda for Sustainable Development in 2015, which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030. This is a reflection of the global education development agenda. In order to achieve all of the essential targets and goals (SDGs) of the 2030 Agenda for Sustainable Development, such a lofty objective will necessitate a reorganization of the entire educational system in order to support and encourage learning.

The world's knowledge landscape is undergoing rapid change. Many unskilled jobs may be taken over by machines as a result of dramatic scientific and technological advancements like the rise of big data, machine learning, and artificial intelligence. At the same time, there will be an increasing demand for skilled workers with multidisciplinary skills across the sciences, social sciences, and humanities as well as skills in mathematics, computer science, and data science. There will be a significant shift in how we meet the world's needs for energy, water, food, and sanitation as a result of climate change, rising pollution, and depleting natural resources. This will again necessitate the hiring of new skilled labor, particularly in the fields of biology, chemistry, physics, agriculture, climate science, and social science. Collaboration in infectious disease management and vaccine development will be required as epidemics and pandemics worsen, and the ensuing social issues highlight the importance of multidisciplinary education. As India progresses toward becoming a developed nation with one of the world's three largest economies, there will be an increasing demand for art and the humanities.

Indeed, in light of the rapidly shifting employment landscape and global ecosystem, it is becoming increasingly important for children to not only learn, but also learn how to learn. As a result, education must focus less on content and more on learning how to think critically, solve problems, be creative and multidisciplinary, innovate, adapt, and absorb new information in new and evolving fields. Education must become more experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centered, flexible, and, of course, enjoyable through the evolution of pedagogy. In order to develop all aspects and capabilities of learners, the curriculum must include fundamental arts, crafts, humanities, games, sports, and fitness, languages, literature, culture, and values; and make education more comprehensive, useful, and satisfying for students. Students must be able to be ethical, rational, compassionate, and caring through education, which must also prepare them for rewarding employment.

Through major reforms that bring the highest quality, equity, and integrity into the system, from early childhood care and education to higher education, the gap between the current state of learning outcomes and what is required must be bridged.

By 2040, India must have an unparalleled education system with equal access to the highest quality education for all students, regardless of social or economic status.

The first education policy of the 21st century, this National Education Policy 2020 aims to address our nation's numerous growing developmental imperatives. In order to create a new system that is in line with the aspirational goals of education in the 21st century, including

SDG4, while also building upon India's traditions and value systems, this Policy proposes the revision and overhaul of all aspects of the education structure, including its regulation and governance. The National Education Policy places a special emphasis on helping each person realize their creative potential. It is based on the idea that education should help students develop not only their cognitive abilities (such as literacy and numeracy's "foundational capacities" and "higher-order" cognitive abilities like problem-solving and critical thinking) but also their social, ethical, and emotional dispositions as well.

The rich legacy of old and everlasting Indian information and thought has been a directing light for this Strategy. In Indian thought and philosophy, knowledge (Jnan), wisdom (Pragyaa), and truth (Satya) were always regarded as the highest human objective. In ancient India, education was not just about getting knowledge to prepare for life in this world or life after school, but also about fully realizing and freeing oneself. In ancient India, world-class institutions like Takshashila, Nalanda, Vikramshila, and Vallabhi hosted scholars and students from all over the world and set the highest standards for multidisciplinary teaching and research. Charaka, Susruta, Aryabhata, Varahamihira, Bhaskaracharya, Brahmagupta, Chanakya, Chakrapani Datta, Madhava, Panini, Patanjali, Nagarjuna, Gautama, Pingala, Sankardev, Maitreyi, Gargi, and Thiruvalluvar, among others, were great scholars who made significant contributions to world knowledge in a variety of the philosophy and culture of India have had a significant impact on the world. In addition to nurturing and preserving these extensive world heritage legacies for future generations, our educational system should also be used for research, enhancement, and new application.

The education system's fundamental reforms must center on the teacher. Because they truly shape our next generation of citizens, the new education policy needs to assist in reestablishing teachers at all levels as the most revered and essential members of our society. It must do everything in its power to empower teachers and assist them in performing their duties as efficiently as possible. By instilling in the system fundamental methods of quality control and accountability, the new education policy must assist in recruiting the very best and brightest to enter the teaching profession at all levels. It must also guarantee autonomy, respect, dignity, and livelihood.

A quality education system must be provided to all students, regardless of where they live, by the new education policy, with an emphasis on historically underrepresented, disadvantaged, and marginalized groups. The best method for achieving equality, inclusion, and economic and social mobility is education, which acts as a leveling agent. There must be plans in place to make sure that all students from these groups have a chance to enter and succeed in the educational system, despite the challenges they face.

These aspects must be incorporated with respect for and consideration for the country's rich cultural diversity and local and global requirements. For the purposes of national pride, self-confidence, self-knowledge, cooperation, and integration, it is considered essential to instill in India's young people knowledge of its diverse social, cultural, and technological requirements, as well as its distinctive artistic, language, and knowledge traditions and strong ethics.

Previous Policies

Prior education policies have primarily dealt with issues of equity and accessibility. This policy appropriately addresses the unfinished agenda of the National Policy on Education of 1986,

which was amended in 1992 (NPE 1986/92). The Right of Children to Free and Compulsory Education Act of 2009, which established the legal foundations for achieving universal elementary education, has been a significant development since the previous Policy of 1986/92.

Principles of this Policy

The education system's goal is to make good people who can think and act rationally, have compassion and empathy, are brave and resilient, have a scientific temper and a creative imagination with solid ethical moorings. For the purpose of constructing a society that is equitable, inclusive, and pluralistic in accordance with our Constitution, it aims to produce citizens who are engaged, productive, and contribute positively.

A good educational establishment is one where every student is welcomed and cared for, where there is a secure and stimulating learning environment, where there is a wide range of learning experiences, and where all students have access to good physical infrastructure and the right resources for learning. Every educational establishment must aim to develop students with these characteristics. However, there must also be seamless integration and coordination across all educational stages and institutions.

The Vision of this Policy

By providing high-quality education to all students and making India a global knowledge superpower, this National Education Policy envisions an education system rooted in Indian ethos that directly contributes to transforming India, or Bharat, sustainably into an equitable and vibrant knowledge society. According to the Policy, our educational institutions' curricula and methods must instill in students a deep respect for the Fundamental Duties and Constitutional values, a sense of national pride, and an awareness of one's roles and responsibilities in a changing world. The Policy's goal is to help students develop knowledge, skills, values, and dispositions that support a responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen, and to instill a deep-rooted pride in being Indian in thought, spirit, intellect, and deed.

HIGHER EDUCATION

In developing India into the democratic, just, socially conscious, cultured, and humane nation envisioned in its Constitution, which upholds liberty, equality, fraternity, and justice for all, higher education plays a crucial role in promoting human and societal well-being. The nation's economic growth and sustainable livelihoods are significantly aided by higher education. Young Indians are likely to become more interested in pursuing higher education as India moves toward becoming a society and economy based on knowledge.

Quality higher education must aim to cultivate good, thoughtful, well-rounded, and creative individuals in light of the requirements of the 21st century. A person's character, ethical and Constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service, and 21st-century capabilities across a variety of disciplines, including the sciences, social sciences, arts, humanities, languages, as well as professional, technical, and vocational subjects, must all be developed through this program. In addition, it must enable an individual to study one or more specialized areas of interest at a deep level. A good higher education should make it possible for students to achieve personal success and enlightenment, engage constructively with the public, and make useful contributions to society. It must enable

economic independence and prepare students for lives and careers that are more meaningful and satisfying.

At every stage of education, from preschool to higher education, an identified set of skills and values must be incorporated in order to foster holistic individuals.Higher education must help create a nation that is educated, socially conscious, knowledgeable, and skilled enough to identify and implement effective solutions to its own problems on a societal level. In order to contribute to the expansion of the national economy, higher education must serve as the foundation for knowledge creation and innovation. As a result, quality higher education serves more than merely to increase individual employment opportunities. It is the key to communities that are more active, socially engaged, and cooperative, as well as to a nation that is happier, more cohesive, productive, innovative, progressive, and prosperous. The following are some of the major issues that India's higher education system is currently dealing with:

a. a highly fragmented system of higher education;
b. less emphasis on learning outcomes and the development of cognitive skills;
c. a strict division of the academic fields, with early specialization and the streamlining of students into specific fields of study;
d. limited access, particularly in economically disadvantaged areas, with few higher education institutions offering instruction in local languages;
e. restricted autonomy for teachers and institutions;
f. inadequate mechanisms for faculty and institutional leaders' merit-based career management and advancement;
g. The majority of colleges and universities place less emphasis on research and don't provide competitive funding for peer-reviewed research across disciplines;
h. inadequate HEI leadership and governance;
i. a regulatory system that isn't working; and
j. large affiliated universities with low undergraduate education standards.

In order to address these issues and provide equitable and inclusive higher education, this policy envisions a comprehensive overhaul of the educational system. The policy's vision includes the following significant modifications to the existing system:

a. moving toward a higher education system with large, multidisciplinary colleges and universities, at least one in each district, and more HEIs across India that teach in local or Indian languages as the medium of instruction or offer programs in those languages;
b. moving toward an undergraduate education that is more multidisciplinary;
c. moving toward institutional and faculty autonomy;
d. improving student experiences by revamping the curriculum, pedagogy, assessment, and student support;
e. reaffirming the integrity of faculty and institutional leadership positions through merit-based appointments and advancement based on service, research, and teaching;
f. the establishment of a National Research Foundation to actively encourage research in universities and colleges and to support high-quality, peer-reviewed research;
g. high-qualified, independent boards with academic and administrative autonomy oversee HEIs;
h. a single regulator's "light but tight" regulation of higher education;
i. a variety of measures to improve access, equity, and inclusion, including more opportunities for excellent public education; scholarships offered by private or

charitable universities to students from underprivileged and disadvantaged backgrounds; open distance education (ODL) and online education; and all educational resources and infrastructure are accessible to students with disabilities.

j. Institutional Restructuring and Consolidation

By transforming higher education institutions into large, multidisciplinary universities, colleges, and HEI clusters/Knowledge Hubs, each of which will aim to have 3,000 or more students, this policy on higher education aims to end the fragmentation of higher education. This would enable students to become well-rounded across disciplines, including artistic, creative, and analytical subjects as well as sports, develop active research communities across disciplines, including cross-disciplinary research, and increase resource efficiency across higher education, both material and human. It would also help break down harmful silos.

As a result, this policy's highest recommendation for the structure of higher education is to move toward large clusters of HEIs and universities with a variety of academic disciplines. The ancient Indian universities of Takshashila, Nalanda, Vallabhi, and Vikramshila, which had thousands of students from all over the world studying in vibrant multidisciplinary settings, clearly demonstrated the kind of enormous success that large multidisciplinary research and teaching universities could bring. India urgently needs to restore this great Indian tradition, which is already transforming other nations' educational and economic systems and producing individuals who are well-rounded and innovative.

A new conceptual perception and understanding of what constitutes a higher education institution (HEI), also known as a college or university, is particularly necessary for this vision of higher education. A university is a multidisciplinary educational establishment with undergraduate and graduate programs, high-quality teaching, research, and community service. As a result, the definition of a university will allow for a range of institutions, from research-intensive universities that place equal emphasis on teaching and research to teaching-intensive universities that still conduct significant research. In contrast, an autonomous degree-granting college (AC) is a large, multidisciplinary institution of higher education that primarily focuses on undergraduate teaching and awards undergraduate degrees, though it is not required to do so and is typically smaller than a typical university.

Through a transparent graded accreditation system, a stage-by-stage mechanism for granting colleges graded autonomy will be established. Colleges will be supported, encouraged, rewarded, and mentored as they work toward meeting the minimum standards for each level of accreditation. It is anticipated that each college will either become an autonomous degree-granting college over time or a constituent college of a university, in which case it will be fully integrated into the university. If they so desire, autonomous degree-granting colleges could transform into research- or teaching-intensive universities with the appropriate accreditations.

It is imperative that it be made abundantly clear that these three broad categories of institutions do not naturally fall into a rigid, exclusionary category; rather, they lie along a continuum. Based on their plans, actions, and effectiveness, HEIs will have the autonomy and freedom to move gradually from one category to another. The focus of these institutions' goals and work will be the most noticeable indicator. Across this assortment of HEIs, the Accreditation System will develop and implement appropriately diverse and pertinent standards. However, all HEIs will have the same high standards for education and teaching-learning quality.

Higher education institutions (HEIs) will have a number of important responsibilities beyond teaching and research, which they will carry out with the right resources, incentives, and structures. Support for school education, community involvement and service, contributions to various fields of practice, faculty development for the higher education system, and support for other HEIs are just a few examples.

In order to make the most of available infrastructure and resources and to foster vibrant multidisciplinary communities, all higher education institutions (HEIs) must aim to become multidisciplinary by 2040 and have larger student enrollments, preferably in the thousands. All higher education institutions will first plan to become multidisciplinary by 2030 and then gradually increase student strength to the desired levels because this process will take time.

In order to guarantee full access, equity, and inclusion, more HEIs will be established and developed in underserved areas. Every district should have at least one large, multidisciplinary HEI by 2030. The establishment of high-quality public and private higher education institutions with instruction in both local and Indian languages or bilingually is to be pursued. By 2035, the objective will be to raise the Gross Enrollment Ratio in higher education, which includes vocational education, from 26.3% in 2018 to 50%. While some brand-new institutions may be established to achieve these objectives, existing higher education institutions will be consolidated, significantly expanded, and enhanced for the majority of capacity creation.

Both public and private institutions will expand, with a strong emphasis on the creation of numerous outstanding public institutions. The process for determining increased levels of public funding support for public higher education institutions will be fair and transparent. All public institutions will have equal opportunities for growth and development under this system, which is based on transparent, pre-announced criteria from the Accreditation System's accreditation standards. In accordance with the policy, higher education institutions (HEIs) will be encouraged to increase their capacity.

Open Distance Learning (ODL) and online programs will be available to institutions that are accredited to offer them in order to improve access, increase GER, and provide opportunities for lifelong learning (SDG 4). All ODL courses and their components that lead to a diploma or degree will be of the same high quality as the best courses offered by HEIs on their campuses. Online courses of high quality will be encouraged and supported by leading ODL-accredited institutions. Online courses of this quality will be well-integrated into HEI curriculums, and blended learning will be preferred.

In order to facilitate and promote high-quality cross- and multidisciplinary teaching and research across fields, single-stream higher education institutions (HEIs) will be phased out over time and all will shift toward becoming vibrant multidisciplinary institutions or components of vibrant multidisciplinary HEI clusters. Departments in a variety of fields will be added to single-stream HEIs to strengthen the single stream they currently serve. In order to facilitate this vibrant culture, all HEIs will gradually move toward full autonomy, both academically and administratively, by obtaining appropriate accreditations. Stability and sufficient public funding will support public institutions' autonomy. It will be encouraged to support private institutions that have a public-spirited commitment to a high-quality, equitable education.

By gradually phasing out the system of "affiliated colleges" over a period of fifteen years through a system of graded autonomy and to be carried out in a challenge mode, the new regulatory system envisioned by this Policy will foster this overall culture of empowerment and autonomy to innovate. Mentoring affiliated colleges will be the responsibility of each existing affiliating university to help them grow and meet minimum academic and curricular standards; instruction and evaluation; changes to governance; financial stability; and efficiency in administration. Over time, all colleges that are currently affiliated with a university must meet the required standards in order to obtain the required accreditation standards and eventually become independent colleges that offer degrees. This will be accomplished through a coordinated national effort that includes appropriate mentoring and government support.

The overall sector of higher education will strive for an integrated system that includes professional and vocational education. All HEIs in all current streams will be covered by this policy and its approach, which will eventually unite them into a single, cohesive higher education ecosystem.

An international university is a multidisciplinary educational establishment that offers undergraduate, graduate, and doctoral degrees. D programs and conducts high-quality research and teaching. If the HEIs in the country meet the standards, they will no longer be referred to as "unitary universities," "deemed to be universities," "affiliating universities," or "affiliating technical universities."
Optimal Learning Environments and Support for Students

Effective learning requires a comprehensive approach that involves appropriate curriculum, engaging pedagogy, continuous formative assessment, and adequate student support. The curriculum must be interesting and relevant, and updated regularly to align with the latest knowledge requirements and to meet specified learning outcomes. High-quality pedagogy is then necessary to successfully impart the curricular material to students; pedagogical practices determine the learning experiences that are provided to students, thus directly influencing learning outcomes. The assessment methods must be scientific, designed to continuously improve learning and test the application of knowledge. Last but not least, the development of capacities that promote student wellness such as fitness, good health, psycho-social well-being, and sound ethical grounding are also critical for high-quality learning.

Thus, curriculum, pedagogy, continuous assessment, and student support are the cornerstones for quality learning. Along with providing suitable resources and infrastructure, such as quality libraries, classrooms, labs, technology, sports/recreation areas, student discussion spaces, and dining areas, a number of initiatives will be required to ensure that learning environments are engaging and supportive, and enable all students to succeed.

First, in order to promote creativity, institutions and faculty will have the autonomy to innovate on matters of curriculum, pedagogy, and assessment within a broad framework of higher education qualifications that ensures consistency across institutions and programmes and across the ODL, online, and traditional ‘in-class’ modes. Accordingly, curriculum and pedagogy will be designed by institutions and motivated faculty to ensure a stimulating and engaging learning experience for all students, and continuous formative assessment will be used to further the goals of each programme. All assessment systems shall also be decided by the HEI, including those that lead to final certification. The Choice Based Credit

System (CBCS) will be revised for instilling innovation and flexibility. HEIs shall move to a criterion-based grading system that assesses student achievement based on the learning goals for each programme, making the system fairer and outcomes more comparable. HEIs shall also move away from high-stakes examinations towards more continuous and comprehensive evaluation.

Second, each institution will integrate its academic plans ranging from curricular improvement to quality of classroom transaction - into its larger Institutional Development Plan (IDP). Each institution will be committed to the holistic development of students and create strong internal systems for supporting diverse student cohorts in academic and social domains both inside and outside formal academic interactions in the classroom. For example, all HEIs will have mechanisms and opportunities for funding of topic-centred clubs and activities organized by students with the help of faculty and other experts as needed, such as clubs and events dedicated to science, mathematics, poetry, language, literature, debate, music, sports, etc. Over time, such activities could be incorporated into the curriculum once appropriate faculty expertise and campus student demand is developed. Faculty will have the capacity and training to be able to approach students not just as teachers, but also as mentors and guides.

Third, students from socio-economically disadvantaged backgrounds require encouragement and support to make a successful transition to higher education. Universities and colleges will thus be required to set up high-quality support centres and will be given adequate funds and academic resources to carry this out effectively. There will also be professional academic and career counselling available to all students, as well as counsellors to ensure physical, psychological and emotional well-being.
Fourth, ODL and online education provide a natural path to increase access to quality higher education. In order to leverage its potential completely, ODL will be renewed through concerted, evidence-based efforts towards expansion while ensuring adherence to clearly articulated standards of quality. ODL programmes will aim to be equivalent to the highest quality in-class programmes available. Norms, standards, and guidelines for systemic development, regulation, and accreditation of ODL will be prepared, and a framework for quality of ODL that will be recommendatory for all HEIs will be developed.

Finally, all programmes, courses, curricula, and pedagogy across subjects, including those in-class, online, and in ODL modes as well as student support will aim to achieve global standards of quality.

Teacher Education

The development of a pool of schoolteachers who will shape the next generation relies heavily on teacher education. The activity of teacher preparation necessitates the formation of dispositions and values, the development of practice under the best mentors, and multidisciplinary perspectives and knowledge. Teachers must be well-versed in the most recent developments in education and pedagogy while also being grounded in Indian values, languages, knowledge, ethos, and traditions, including tribal traditions.

The majority of stand-alone TEIs—more than 10,000 in total—are essentially selling degrees for a price, as stated by the Justice J. S. Verma Commission (2012), which was established by the Supreme Court. Instead, these TEIs are not even attempting to provide serious teacher education. In fact, regulatory efforts have hindered the expansion of excellence and innovation

in the sector and have not been able to curb systemic malpractices or enforce fundamental quality standards. In order to raise standards and restore integrity, credibility, efficacy, and high quality to the teacher education system, the sector and its regulatory system require urgent revitalization through radical action.

The Regulatory System shall be empowered to take stringent action against substandard and dysfunctional teacher education institutions (TEIs) that do not meet basic educational criteria, after providing one year for remedy of the breaches, in order to improve and reach the levels of integrity and credibility required to restore the teaching profession's prestige. By 2030, only programs for teacher education that are educationally sound, multidisciplinary, and integrated will be in place.

All teacher education programs must be held in composite multidisciplinary institutions because they require inputs from multiple disciplines and instruction in both pedagogy and high-quality content. In order to accomplish this, all multidisciplinary colleges and universities will strive to establish education departments that will not only offer B.Ed. programs but also conduct cutting-edge research on a variety of education-related topics. programs, working with other departments like psychology, philosophy, sociology, neuroscience, Indian languages, arts, music, history, literature, physical education, science, and mathematics, among others. Additionally, since they will be required to offer the four-year integrated teacher preparation program, all stand-alone TEIs will be required to transform into multidisciplinary institutions by 2030.

The integrated four-year B.Ed. By 2030, these multidisciplinary higher education institutions' offerings will be the minimum degree requirement for school teachers. The integrated four-year B.Ed. will be a holistic bachelor's degree with a dual major in education and a specialized subject like language, history, music, math, computer science, chemistry, economics, art, physical education, etc. The teacher education will include instruction in cutting-edge pedagogy, as well as sociology, history, science, psychology, early childhood care and education, foundational literacy and numeracy, and knowledge of India's values, ethos, art, and traditions, among other subjects. The HEI that provides the integrated four-year B.Ed. could also offer a two-year B.Ed., for students who already hold a Bachelor's degree in a particular field. A year-long B.Ed. may also be provided to applicants with a four-year undergraduate degree in a specialized field. In order to attract outstanding candidates to the 4-year, 2-year, and 1-year B.Ed. programs, scholarships will be established for deserving students. programmes.

Higher education institutions that offer teacher education programs will guarantee the availability of specialists in a variety of education-related and related fields. Each higher education institution will collaborate closely with a network of government and private schools, where potential teachers will student-teach and engage in other activities like community service, adult and vocational education, and so on. Pre-service teacher preparation programs will be admitted based on standardized subject and aptitude tests administered by the National Testing Agency in consideration of the country's linguistic and cultural diversity in order to maintain uniform standards for teacher education. The diversity of the faculty profile in Departments of Education will inevitably be a goal, but teaching, research, and field experience will be highly valued. In order to strengthen the multidisciplinary education of teachers and provide rigor in conceptual development, teacher education institutions will

attract and retain faculty from science education, mathematics education, social science education, and language education programs with training in areas of the social sciences that are directly relevant to school education, such as psychology, child development, linguistics, sociology, philosophy, economics, and political science.

Courses in teaching, education, pedagogy, and writing related to their chosen Ph.D. will be required of all new Ph.D. applicants, regardless of their field. D subject matter throughout their doctoral training. Since many research scholars will go on to become faculty or public representatives or communicators of their chosen fields, exposure to pedagogical practices, curriculum design, credible evaluation systems, and communication, among other topics, will be guaranteed. Ph. Additionally, D students will have at least a certain number of actual teaching hours gained through teaching assistantships and other sources. For this purpose, Ph.D. programs at universities all over the country will be reoriented.

Through the existing institutional arrangements and ongoing initiatives, college and university teachers will continue to receive continuous in-service professional development; In order to satisfy the requirements of enhanced teaching-learning processes for high-quality education, these will be significantly strengthened and expanded. Teachers will be encouraged to use technology platforms like SWAYAM and DIKSHA for online training so that standardized training programs can be given to a large number of teachers quickly.

A large pool of outstanding senior and retired faculty, including those with the ability to teach in Indian languages, who are willing to provide short- and long-term mentoring and professional support to university and college teachers will be gathered into a National Mission for Mentoring and innovators from various fields will oversee the NRF independently of the government.

Transforming the Regulatory System of Higher Education

For decades, higher education regulation has been excessively stringent; Too many attempts have been made to regulate without much success. Fundamental issues like excessive concentrations of power within a few bodies, conflicts of interest among these bodies, and a lack of accountability have plagued the mechanistic and disempowering regulatory system. In order to reenergize and enable the higher education sector to thrive, the regulatory system must be completely overhauled.

The regulatory system for higher education will ensure that distinct, independent, and empowered bodies will perform the various functions of regulation, accreditation, funding, and academic standard setting in order to address the aforementioned issues. This is deemed necessary to eliminate power concentrations, minimize conflicts of interest, and establish checks and balances within the system. to make sure that the four institutional structures that carry out these four essential functions both independently and simultaneously collaborate to achieve common objectives. The Higher Education Commission of India (HECI) will serve as the umbrella organization for these four structures, which will be established as four distinct verticals.

The National Higher Education Regulatory Council (NHERC) will be HECI's first vertical. It will act as a single, unified regulator for the higher education sector, including teacher education but excluding medical and legal education. As a result, it will eliminate the duplication and

disjunction of regulatory efforts that are currently carried out by multiple regulatory agencies. To enable this single point of regulation, it will require a new look, the repeal of existing laws, and the reorganization of various regulatory bodies. Financial probity, good governance, and the complete online and offline public self-disclosure of all finances, audits, procedures, infrastructure, faculty/staff, courses, and educational outcomes will all be very effectively regulated by NHERC, which will be set up to regulate in a "light but tight" and facilitative manner. All higher education institutions will be required to make this information available on a public website maintained by NHERC as well as on their own websites, where it will need to be kept current and accurate. NHERC will decide on any grievances or complaints made by stakeholders and others regarding the public domain information. Each HEI will solicit online feedback from randomly selected students, including students with disabilities, to ensure valuable input on a regular basis.

Accreditation will be the primary means by which such regulation can be implemented. As a result, the National Accreditation Council (NAC) will serve as the "meta-accrediting body" for HECI's second vertical. An independent ecosystem of accrediting institutions under the supervision and supervision of NAC will carry out the accreditation of institutions, which will be primarily based on fundamental norms, public self-disclosure, good governance, and outcomes. NAC will assign the responsibility of being a recognized accreditor to a sufficient number of institutions. All higher education institutions will be required to meet predetermined standards of quality, self-governance, and autonomy through the implementation of a robust graded accreditation system in the near future. Through their Institutional Development Plans (IDPs), each HEI will, in turn, strive to become self-governing degree-granting institutions or clusters through accreditation at the highest level within the next 15 years. According to current global practice, accreditation will eventually become a binary procedure.

The Higher Education Grants Council (HEGC) will be the third HECI vertical. It will fund and finance higher education based on transparent criteria, such as the institutions' IDPs and their progress toward implementation. The distribution of scholarships and development funds for the establishment of new focus areas and the expansion of high-quality program offerings at higher education institutions across disciplines and fields will be delegated to HEGC.

The General Education Council (GEC), which will define expected learning outcomes for higher education programs, also known as "graduate attributes," will be the fourth vertical of HECI. To facilitate the integration of vocational education into higher education, the GEC will develop a National Higher Education Qualification Framework (NHEQF) that will be compatible with the National Skills Qualifications Framework (NSQF). The NHEQF will describe higher education qualifications that lead to a degree, diploma, or certificate in terms of these learning outcomes. In addition, the GEC is obligated to establish facilitating standards for issues like credit transfer, equivalence, and other similar ones. by means of the NHEQF. In order to prepare well-rounded students with skills for the 21st century, the GEC will be required to identify specific skills that students must acquire during their academic programs.

The professional councils, such as the Indian Council for Agricultural Research (ICAR), the Veterinary Council of India (VCI), the National Council for Teacher Education (NCTE), the Council of Architecture (CoA), and so on, will perform the function of Professional Standards Setting Bodies (PSSBs). They will be invited to join the GEC and will play a significant role in higher education. As PSSBs, these organizations will continue to create curricula, establish

academic standards, and coordinate teaching, research, and field development within their respective fields as GEC members. They would assist in defining the curriculum framework within which HEIs can develop their own curricula as GEC members. As a result, PSSBs would also establish standards or expectations in particular learning and practice areas without acting as regulators. All higher education institutions will determine, among other things, how their educational programs comply with these standards. If necessary, they will also be able to seek assistance from these standard-setting bodies or PSSBs.

By eliminating conflicts of interest between roles, such a system architecture will guarantee the principle of functional separation. It will also try to give HEIs more power while making sure that only the most important things get done. The HEIs will receive responsibility and accountability concurrently. These expectations shall not distinguish between public and private HEIs.

For this to happen, existing structures and institutions will need to be rethought and undergo some sort of evolution. As a result of the separation of functions, each vertical within HECI would assume a unique role that is relevant, meaningful, and significant in the new regulatory framework.

All of the autonomous verticals for Regulation (NHERC), Accreditation (NAC), Funding (HEGC), and Academic Standard Setting (GEC), as well as the overarching autonomous umbrella body (HECI), will operate on the basis of open public disclosure. They will also make extensive use of technology to reduce the amount of human interaction in their work in order to guarantee efficiency and openness. A technology-based, faceless regulatory intervention will serve as the guiding principle. In order to ensure that higher education institutions adhere to the fundamental minimum norms and standards, strict compliance measures with stringent action, including penalties for false disclosure of mandated information, will be implemented. HECI will settle disputes between the four verticals. Each vertical in HECI will be its own independent entity, made up of people with a demonstrated track record of public service, integrity, and high expertise in the relevant fields. The integrity and efficient operation of HECI will be overseen and monitored by a small, independent body of public-spirited experts in higher education. Within HECI, appropriate mechanisms will be developed to carry out its functions, including adjudication.

The regulatory framework will also make it much simpler to establish new high-quality HEIs. It will also ensure with great efficiency that these institutions are established in the spirit of public service and with adequate financial backing for long-term stability. The governments of the Central and State will assist exceptionally successful higher education institutions in expanding their facilities, enabling them to attract a larger number of students, faculty, and programs. In order to further broaden access to high-quality higher education, models of the Public Philanthropic Partnership for HEIs may also be tested.

Effective Governance and Leadership for Higher Education Institutions

A culture of excellence and innovation in higher education institutions is made possible by effective governance and leadership. Strong self-governance and outstanding merit-based appointments of institutional leaders have indeed been the defining characteristics of all world-class institutions, including India.

All higher education institutions in India will strive to become autonomous, self-governing institutions pursuing innovation and excellence through a suitable system of graded autonomy and graded accreditation over a 15-year period. At all higher education institutions, efforts will be made to foster an environment of excellence and ensure the highest possible standard of leadership. A Board of Governors (BoG) of highly qualified, competent, and dedicated individuals with demonstrated capabilities and a strong sense of commitment to the institution will be established once the institution has received the appropriate graded accreditations that indicate that it is ready for such a move. An institution's BoG will be able to make all appointments, including the institution's head, and make all governance-related decisions without interference from outsiders. The Constitution, Appointment, Modalities of Functioning, Rules and Regulations, and Roles and Responsibilities of the BoG shall be established by an Overarching Legislation that shall supersede any contravening provisions of any other earlier Legislation. A Board-appointed expert committee shall select new Board members; Additionally, the BoG will be responsible for selecting new members. When selecting members, equity considerations will also be taken into account. Throughout this process, it is anticipated that all higher education institutions will be encouraged, supported, and mentored. The goal is for them to become autonomous and have such an empowered BoG by 2035.

Through open self-disclosure of all relevant records, the BoG shall be accountable to the stakeholders. Through the National Higher Education Regulatory Council (NHERC), it will be accountable for adhering to all regulatory guidelines established by HECI. People with strong academic credentials, demonstrated leadership and administrative skills, and the ability to handle difficult situations will be considered for all positions of leadership and institution heads. A strong social commitment, a belief in teamwork, pluralism, the capacity to work with diverse people, and a positive outlook are all traits that leaders of an HEI should possess in addition to demonstrating a strong alignment with the institution's overall vision and the Constitutional values. An Eminent Expert Committee (EEC) constituted by the BoG will lead the rigorous, impartial, merit-based, and competency-based selection process. While tenure stability is essential for the establishment of a suitable culture, careful planning will be taken to ensure that good practices that define an institution's processes do not end as a result of a change in leadership; In order to guarantee smooth transitions, leadership changes will occur with sufficient overlaps and not remain vacant. A succession of leadership roles will allow for the early identification and development of outstanding leaders.

All higher education institutions will, in turn, demonstrate commitment to institutional excellence, engagement with their local communities, and the highest standards of financial probity and accountability while receiving adequate funding, legislative enablement, and autonomy in a phased manner. Each institution will develop a strategic Institutional Development Plan on the basis of which it will develop initiatives, evaluate its own progress, and achieve the goals outlined in the plan. This plan may later serve as the foundation for additional funding from the public. Members of the Board, institutional leaders, faculty, students, and staff are all expected to collaborate on the preparation of the IDP.

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NATIONAL EDUCATION POLICY 2020 FOR HIGHER EDUCATION IN INDIA

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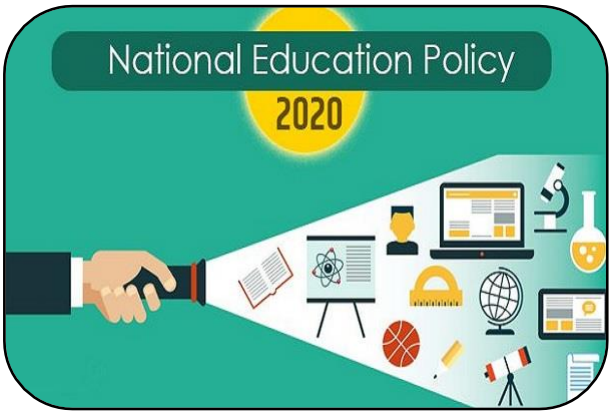

Abstract:

Education has an important and decisive role in this emergency situation. The National Education Policy 2020 has become the framework for this reform, which can help create a new education system in the country besides strengthening those economic and social indicators. It still needs to be improved. NEP 2020 provides quality higher education through multidisciplinary universities and autonomous colleges. We have critically examined the policy in this paper and suggested changes to maintain unbroken continuity with its predecessor to enhance its relevance. The present paper describes the analysis of NEP 2020 provisions and requirements of management practices at university level. Recommendations are made for the design and implementation of NEPs nationally and at HEIs (higher education levels).

Keywords: *Education Policy, Higher Education*

INTRODUCTION

Achieving one's full potential, building a just and equitable society, and fostering national development all depend on education. The key to India's continued ascent and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation is providing universal access to high-quality education. The best strategy for developing and maximizing our nation's abundant talents and resources for the benefit of the individual, society, country, and world is to provide

high-quality education to all students. Over the next ten years, India will have the highest number of young people in the world. Our ability to provide them with high-quality educational opportunities will determine our nation's future.

India adopted Goal 4 (SDG4) of the 2030 Agenda for Sustainable Development in 2015, which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030. This is a reflection of the global education development agenda. In order to achieve all of the essential targets and goals (SDGs) of the 2030 Agenda for Sustainable Development, such a lofty objective will necessitate a reorganization of the entire educational system in order to support and encourage learning.

The world's knowledge landscape is undergoing rapid change. Many unskilled jobs may be taken over by machines as a result of dramatic scientific and technological advancements like the rise of big data, machine learning, and artificial intelligence. At the same time, there will be an increasing demand for skilled workers with multidisciplinary skills across the sciences, social sciences, and humanities as well as skills in mathematics, computer science, and data science. There will be a significant shift in how we meet the world's needs for energy, water, food, and sanitation as a result of climate change, rising pollution, and depleting natural resources. This will again necessitate the hiring of new skilled labor, particularly in the fields of biology, chemistry, physics, agriculture, climate science, and social science. Collaboration in infectious disease management and vaccine development will be required as epidemics and pandemics worsen, and the ensuing social issues highlight the importance of multidisciplinary education. As India progresses toward becoming a developed nation with one of the world's three largest economies, there will be an increasing demand for art and the humanities.

Indeed, in light of the rapidly shifting employment landscape and global ecosystem, it is becoming increasingly important for children to not only learn, but also learn how to learn. As a result, education must focus less on content and more on learning how to think critically, solve problems, be creative and multidisciplinary, innovate, adapt, and absorb new information in new and evolving fields. Education must become more experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centered, flexible, and, of course, enjoyable through the evolution of pedagogy. In order to develop all aspects and capabilities of learners, the curriculum must include fundamental arts, crafts, humanities, games, sports, and fitness, languages, literature, culture, and values; and make education more comprehensive, useful, and satisfying for students. Students must be able to be ethical, rational, compassionate, and caring through education, which must also prepare them for rewarding employment.

Through major reforms that bring the highest quality, equity, and integrity into the system, from early childhood care and education to higher education, the gap between the current state of learning outcomes and what is required must be bridged.

By 2040, India must have an unparalleled education system with equal access to the highest quality education for all students, regardless of social or economic status.

The first education policy of the 21st century, this National Education Policy 2020 aims to address our nation's numerous growing developmental imperatives. In order to create a new system that is in line with the aspirational goals of education in the 21st century, including

SDG4, while also building upon India's traditions and value systems, this Policy proposes the revision and overhaul of all aspects of the education structure, including its regulation and governance. The National Education Policy places a special emphasis on helping each person realize their creative potential. It is based on the idea that education should help students develop not only their cognitive abilities (such as literacy and numeracy's "foundational capacities" and "higher-order" cognitive abilities like problem-solving and critical thinking) but also their social, ethical, and emotional dispositions as well.

The rich legacy of old and everlasting Indian information and thought has been a directing light for this Strategy. In Indian thought and philosophy, knowledge (Jnan), wisdom (Pragyaa), and truth (Satya) were always regarded as the highest human objective. In ancient India, education was not just about getting knowledge to prepare for life in this world or life after school, but also about fully realizing and freeing oneself. In ancient India, world-class institutions like Takshashila, Nalanda, Vikramshila, and Vallabhi hosted scholars and students from all over the world and set the highest standards for multidisciplinary teaching and research. Charaka, Susruta, Aryabhata, Varahamihira, Bhaskaracharya, Brahmagupta, Chanakya, Chakrapani Datta, Madhava, Panini, Patanjali, Nagarjuna, Gautama, Pingala, Sankardev, Maitreyi, Gargi, and Thiruvalluvar, among others, were great scholars who made significant contributions to world knowledge in a variety of the philosophy and culture of India have had a significant impact on the world. In addition to nurturing and preserving these extensive world heritage legacies for future generations, our educational system should also be used for research, enhancement, and new application.

The education system's fundamental reforms must center on the teacher. Because they truly shape our next generation of citizens, the new education policy needs to assist in reestablishing teachers at all levels as the most revered and essential members of our society. It must do everything in its power to empower teachers and assist them in performing their duties as efficiently as possible. By instilling in the system fundamental methods of quality control and accountability, the new education policy must assist in recruiting the very best and brightest to enter the teaching profession at all levels. It must also guarantee autonomy, respect, dignity, and livelihood.

A quality education system must be provided to all students, regardless of where they live, by the new education policy, with an emphasis on historically underrepresented, disadvantaged, and marginalized groups. The best method for achieving equality, inclusion, and economic and social mobility is education, which acts as a leveling agent. There must be plans in place to make sure that all students from these groups have a chance to enter and succeed in the educational system, despite the challenges they face.

These aspects must be incorporated with respect for and consideration for the country's rich cultural diversity and local and global requirements. For the purposes of national pride, self-confidence, self-knowledge, cooperation, and integration, it is considered essential to instill in India's young people knowledge of its diverse social, cultural, and technological requirements, as well as its distinctive artistic, language, and knowledge traditions and strong ethics.

Previous Policies

Prior education policies have primarily dealt with issues of equity and accessibility. This policy appropriately addresses the unfinished agenda of the National Policy on Education of 1986,

which was amended in 1992 (NPE 1986/92). The Right of Children to Free and Compulsory Education Act of 2009, which established the legal foundations for achieving universal elementary education, has been a significant development since the previous Policy of 1986/92.

Principles of this Policy

The education system's goal is to make good people who can think and act rationally, have compassion and empathy, are brave and resilient, have a scientific temper and a creative imagination with solid ethical moorings. For the purpose of constructing a society that is equitable, inclusive, and pluralistic in accordance with our Constitution, it aims to produce citizens who are engaged, productive, and contribute positively.

A good educational establishment is one where every student is welcomed and cared for, where there is a secure and stimulating learning environment, where there is a wide range of learning experiences, and where all students have access to good physical infrastructure and the right resources for learning. Every educational establishment must aim to develop students with these characteristics. However, there must also be seamless integration and coordination across all educational stages and institutions.

The Vision of this Policy

By providing high-quality education to all students and making India a global knowledge superpower, this National Education Policy envisions an education system rooted in Indian ethos that directly contributes to transforming India, or Bharat, sustainably into an equitable and vibrant knowledge society. According to the Policy, our educational institutions' curricula and methods must instill in students a deep respect for the Fundamental Duties and Constitutional values, a sense of national pride, and an awareness of one's roles and responsibilities in a changing world. The Policy's goal is to help students develop knowledge, skills, values, and dispositions that support a responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen, and to instill a deep-rooted pride in being Indian in thought, spirit, intellect, and deed.

HIGHER EDUCATION

In developing India into the democratic, just, socially conscious, cultured, and humane nation envisioned in its Constitution, which upholds liberty, equality, fraternity, and justice for all, higher education plays a crucial role in promoting human and societal well-being. The nation's economic growth and sustainable livelihoods are significantly aided by higher education. Young Indians are likely to become more interested in pursuing higher education as India moves toward becoming a society and economy based on knowledge.

Quality higher education must aim to cultivate good, thoughtful, well-rounded, and creative individuals in light of the requirements of the 21st century. A person's character, ethical and Constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service, and 21st-century capabilities across a variety of disciplines, including the sciences, social sciences, arts, humanities, languages, as well as professional, technical, and vocational subjects, must all be developed through this program. In addition, it must enable an individual to study one or more specialized areas of interest at a deep level. A good higher education should make it possible for students to achieve personal success and enlightenment, engage constructively with the public, and make useful contributions to society. It must enable

economic independence and prepare students for lives and careers that are more meaningful and satisfying.

At every stage of education, from preschool to higher education, an identified set of skills and values must be incorporated in order to foster holistic individuals.Higher education must help create a nation that is educated, socially conscious, knowledgeable, and skilled enough to identify and implement effective solutions to its own problems on a societal level. In order to contribute to the expansion of the national economy, higher education must serve as the foundation for knowledge creation and innovation. As a result, quality higher education serves more than merely to increase individual employment opportunities. It is the key to communities that are more active, socially engaged, and cooperative, as well as to a nation that is happier, more cohesive, productive, innovative, progressive, and prosperous. The following are some of the major issues that India's higher education system is currently dealing with:

a. a highly fragmented system of higher education;
b. less emphasis on learning outcomes and the development of cognitive skills;
c. a strict division of the academic fields, with early specialization and the streamlining of students into specific fields of study;
d. limited access, particularly in economically disadvantaged areas, with few higher education institutions offering instruction in local languages;
e. restricted autonomy for teachers and institutions;
f. inadequate mechanisms for faculty and institutional leaders' merit-based career management and advancement;
g. The majority of colleges and universities place less emphasis on research and don't provide competitive funding for peer-reviewed research across disciplines;
h. inadequate HEI leadership and governance;
i. a regulatory system that isn't working; and
j. large affiliated universities with low undergraduate education standards.

In order to address these issues and provide equitable and inclusive higher education, this policy envisions a comprehensive overhaul of the educational system. The policy's vision includes the following significant modifications to the existing system:

a. moving toward a higher education system with large, multidisciplinary colleges and universities, at least one in each district, and more HEIs across India that teach in local or Indian languages as the medium of instruction or offer programs in those languages;
b. moving toward an undergraduate education that is more multidisciplinary;
c. moving toward institutional and faculty autonomy;
d. improving student experiences by revamping the curriculum, pedagogy, assessment, and student support;
e. reaffirming the integrity of faculty and institutional leadership positions through merit-based appointments and advancement based on service, research, and teaching;
f. the establishment of a National Research Foundation to actively encourage research in universities and colleges and to support high-quality, peer-reviewed research;
g. high-qualified, independent boards with academic and administrative autonomy oversee HEIs;
h. a single regulator's "light but tight" regulation of higher education;
i. a variety of measures to improve access, equity, and inclusion, including more opportunities for excellent public education; scholarships offered by private or

charitable universities to students from underprivileged and disadvantaged backgrounds; open distance education (ODL) and online education; and all educational resources and infrastructure are accessible to students with disabilities.

j. Institutional Restructuring and Consolidation

By transforming higher education institutions into large, multidisciplinary universities, colleges, and HEI clusters/Knowledge Hubs, each of which will aim to have 3,000 or more students, this policy on higher education aims to end the fragmentation of higher education. This would enable students to become well-rounded across disciplines, including artistic, creative, and analytical subjects as well as sports, develop active research communities across disciplines, including cross-disciplinary research, and increase resource efficiency across higher education, both material and human. It would also help break down harmful silos.

As a result, this policy's highest recommendation for the structure of higher education is to move toward large clusters of HEIs and universities with a variety of academic disciplines. The ancient Indian universities of Takshashila, Nalanda, Vallabhi, and Vikramshila, which had thousands of students from all over the world studying in vibrant multidisciplinary settings, clearly demonstrated the kind of enormous success that large multidisciplinary research and teaching universities could bring. India urgently needs to restore this great Indian tradition, which is already transforming other nations' educational and economic systems and producing individuals who are well-rounded and innovative.

A new conceptual perception and understanding of what constitutes a higher education institution (HEI), also known as a college or university, is particularly necessary for this vision of higher education. A university is a multidisciplinary educational establishment with undergraduate and graduate programs, high-quality teaching, research, and community service. As a result, the definition of a university will allow for a range of institutions, from research-intensive universities that place equal emphasis on teaching and research to teaching-intensive universities that still conduct significant research. In contrast, an autonomous degree-granting college (AC) is a large, multidisciplinary institution of higher education that primarily focuses on undergraduate teaching and awards undergraduate degrees, though it is not required to do so and is typically smaller than a typical university.

Through a transparent graded accreditation system, a stage-by-stage mechanism for granting colleges graded autonomy will be established. Colleges will be supported, encouraged, rewarded, and mentored as they work toward meeting the minimum standards for each level of accreditation. It is anticipated that each college will either become an autonomous degree-granting college over time or a constituent college of a university, in which case it will be fully integrated into the university. If they so desire, autonomous degree-granting colleges could transform into research- or teaching-intensive universities with the appropriate accreditations.

It is imperative that it be made abundantly clear that these three broad categories of institutions do not naturally fall into a rigid, exclusionary category; rather, they lie along a continuum. Based on their plans, actions, and effectiveness, HEIs will have the autonomy and freedom to move gradually from one category to another. The focus of these institutions' goals and work will be the most noticeable indicator. Across this assortment of HEIs, the Accreditation System will develop and implement appropriately diverse and pertinent standards. However, all HEIs will have the same high standards for education and teaching-learning quality.

Higher education institutions (HEIs) will have a number of important responsibilities beyond teaching and research, which they will carry out with the right resources, incentives, and structures. Support for school education, community involvement and service, contributions to various fields of practice, faculty development for the higher education system, and support for other HEIs are just a few examples.

In order to make the most of available infrastructure and resources and to foster vibrant multidisciplinary communities, all higher education institutions (HEIs) must aim to become multidisciplinary by 2040 and have larger student enrollments, preferably in the thousands. All higher education institutions will first plan to become multidisciplinary by 2030 and then gradually increase student strength to the desired levels because this process will take time.

In order to guarantee full access, equity, and inclusion, more HEIs will be established and developed in underserved areas. Every district should have at least one large, multidisciplinary HEI by 2030. The establishment of high-quality public and private higher education institutions with instruction in both local and Indian languages or bilingually is to be pursued. By 2035, the objective will be to raise the Gross Enrollment Ratio in higher education, which includes vocational education, from 26.3% in 2018 to 50%. While some brand-new institutions may be established to achieve these objectives, existing higher education institutions will be consolidated, significantly expanded, and enhanced for the majority of capacity creation.

Both public and private institutions will expand, with a strong emphasis on the creation of numerous outstanding public institutions. The process for determining increased levels of public funding support for public higher education institutions will be fair and transparent. All public institutions will have equal opportunities for growth and development under this system, which is based on transparent, pre-announced criteria from the Accreditation System's accreditation standards. In accordance with the policy, higher education institutions (HEIs) will be encouraged to increase their capacity.

Open Distance Learning (ODL) and online programs will be available to institutions that are accredited to offer them in order to improve access, increase GER, and provide opportunities for lifelong learning (SDG 4). All ODL courses and their components that lead to a diploma or degree will be of the same high quality as the best courses offered by HEIs on their campuses. Online courses of high quality will be encouraged and supported by leading ODL-accredited institutions. Online courses of this quality will be well-integrated into HEI curriculums, and blended learning will be preferred.

In order to facilitate and promote high-quality cross- and multidisciplinary teaching and research across fields, single-stream higher education institutions (HEIs) will be phased out over time and all will shift toward becoming vibrant multidisciplinary institutions or components of vibrant multidisciplinary HEI clusters. Departments in a variety of fields will be added to single-stream HEIs to strengthen the single stream they currently serve. In order to facilitate this vibrant culture, all HEIs will gradually move toward full autonomy, both academically and administratively, by obtaining appropriate accreditations. Stability and sufficient public funding will support public institutions' autonomy. It will be encouraged to support private institutions that have a public-spirited commitment to a high-quality, equitable education.

By gradually phasing out the system of "affiliated colleges" over a period of fifteen years through a system of graded autonomy and to be carried out in a challenge mode, the new regulatory system envisioned by this Policy will foster this overall culture of empowerment and autonomy to innovate. Mentoring affiliated colleges will be the responsibility of each existing affiliating university to help them grow and meet minimum academic and curricular standards; instruction and evaluation; changes to governance; financial stability; and efficiency in administration. Over time, all colleges that are currently affiliated with a university must meet the required standards in order to obtain the required accreditation standards and eventually become independent colleges that offer degrees. This will be accomplished through a coordinated national effort that includes appropriate mentoring and government support.

The overall sector of higher education will strive for an integrated system that includes professional and vocational education. All HEIs in all current streams will be covered by this policy and its approach, which will eventually unite them into a single, cohesive higher education ecosystem.

An international university is a multidisciplinary educational establishment that offers undergraduate, graduate, and doctoral degrees. D programs and conducts high-quality research and teaching. If the HEIs in the country meet the standards, they will no longer be referred to as "unitary universities," "deemed to be universities," "affiliating universities," or "affiliating technical universities."
Optimal Learning Environments and Support for Students

Effective learning requires a comprehensive approach that involves appropriate curriculum, engaging pedagogy, continuous formative assessment, and adequate student support. The curriculum must be interesting and relevant, and updated regularly to align with the latest knowledge requirements and to meet specified learning outcomes. High-quality pedagogy is then necessary to successfully impart the curricular material to students; pedagogical practices determine the learning experiences that are provided to students, thus directly influencing learning outcomes. The assessment methods must be scientific, designed to continuously improve learning and test the application of knowledge. Last but not least, the development of capacities that promote student wellness such as fitness, good health, psycho-social well-being, and sound ethical grounding are also critical for high-quality learning.

Thus, curriculum, pedagogy, continuous assessment, and student support are the cornerstones for quality learning. Along with providing suitable resources and infrastructure, such as quality libraries, classrooms, labs, technology, sports/recreation areas, student discussion spaces, and dining areas, a number of initiatives will be required to ensure that learning environments are engaging and supportive, and enable all students to succeed.

First, in order to promote creativity, institutions and faculty will have the autonomy to innovate on matters of curriculum, pedagogy, and assessment within a broad framework of higher education qualifications that ensures consistency across institutions and programmes and across the ODL, online, and traditional ‘in-class’ modes. Accordingly, curriculum and pedagogy will be designed by institutions and motivated faculty to ensure a stimulating and engaging learning experience for all students, and continuous formative assessment will be used to further the goals of each programme. All assessment systems shall also be decided by the HEI, including those that lead to final certification. The Choice Based Credit

System (CBCS) will be revised for instilling innovation and flexibility. HEIs shall move to a criterion-based grading system that assesses student achievement based on the learning goals for each programme, making the system fairer and outcomes more comparable. HEIs shall also move away from high-stakes examinations towards more continuous and comprehensive evaluation.

Second, each institution will integrate its academic plans ranging from curricular improvement to quality of classroom transaction - into its larger Institutional Development Plan (IDP). Each institution will be committed to the holistic development of students and create strong internal systems for supporting diverse student cohorts in academic and social domains both inside and outside formal academic interactions in the classroom. For example, all HEIs will have mechanisms and opportunities for funding of topic-centred clubs and activities organized by students with the help of faculty and other experts as needed, such as clubs and events dedicated to science, mathematics, poetry, language, literature, debate, music, sports, etc. Over time, such activities could be incorporated into the curriculum once appropriate faculty expertise and campus student demand is developed. Faculty will have the capacity and training to be able to approach students not just as teachers, but also as mentors and guides.

Third, students from socio-economically disadvantaged backgrounds require encouragement and support to make a successful transition to higher education. Universities and colleges will thus be required to set up high-quality support centres and will be given adequate funds and academic resources to carry this out effectively. There will also be professional academic and career counselling available to all students, as well as counsellors to ensure physical, psychological and emotional well-being.
Fourth, ODL and online education provide a natural path to increase access to quality higher education. In order to leverage its potential completely, ODL will be renewed through concerted, evidence-based efforts towards expansion while ensuring adherence to clearly articulated standards of quality. ODL programmes will aim to be equivalent to the highest quality in-class programmes available. Norms, standards, and guidelines for systemic development, regulation, and accreditation of ODL will be prepared, and a framework for quality of ODL that will be recommendatory for all HEIs will be developed.

Finally, all programmes, courses, curricula, and pedagogy across subjects, including those in-class, online, and in ODL modes as well as student support will aim to achieve global standards of quality.

Teacher Education

The development of a pool of schoolteachers who will shape the next generation relies heavily on teacher education. The activity of teacher preparation necessitates the formation of dispositions and values, the development of practice under the best mentors, and multidisciplinary perspectives and knowledge. Teachers must be well-versed in the most recent developments in education and pedagogy while also being grounded in Indian values, languages, knowledge, ethos, and traditions, including tribal traditions.

The majority of stand-alone TEIs—more than 10,000 in total—are essentially selling degrees for a price, as stated by the Justice J. S. Verma Commission (2012), which was established by the Supreme Court. Instead, these TEIs are not even attempting to provide serious teacher education. In fact, regulatory efforts have hindered the expansion of excellence and innovation

in the sector and have not been able to curb systemic malpractices or enforce fundamental quality standards. In order to raise standards and restore integrity, credibility, efficacy, and high quality to the teacher education system, the sector and its regulatory system require urgent revitalization through radical action.

The Regulatory System shall be empowered to take stringent action against substandard and dysfunctional teacher education institutions (TEIs) that do not meet basic educational criteria, after providing one year for remedy of the breaches, in order to improve and reach the levels of integrity and credibility required to restore the teaching profession's prestige. By 2030, only programs for teacher education that are educationally sound, multidisciplinary, and integrated will be in place.

All teacher education programs must be held in composite multidisciplinary institutions because they require inputs from multiple disciplines and instruction in both pedagogy and high-quality content. In order to accomplish this, all multidisciplinary colleges and universities will strive to establish education departments that will not only offer B.Ed. programs but also conduct cutting-edge research on a variety of education-related topics. programs, working with other departments like psychology, philosophy, sociology, neuroscience, Indian languages, arts, music, history, literature, physical education, science, and mathematics, among others. Additionally, since they will be required to offer the four-year integrated teacher preparation program, all stand-alone TEIs will be required to transform into multidisciplinary institutions by 2030.

The integrated four-year B.Ed. By 2030, these multidisciplinary higher education institutions' offerings will be the minimum degree requirement for school teachers. The integrated four-year B.Ed. will be a holistic bachelor's degree with a dual major in education and a specialized subject like language, history, music, math, computer science, chemistry, economics, art, physical education, etc. The teacher education will include instruction in cutting-edge pedagogy, as well as sociology, history, science, psychology, early childhood care and education, foundational literacy and numeracy, and knowledge of India's values, ethos, art, and traditions, among other subjects. The HEI that provides the integrated four-year B.Ed. could also offer a two-year B.Ed., for students who already hold a Bachelor's degree in a particular field. A year-long B.Ed. may also be provided to applicants with a four-year undergraduate degree in a specialized field. In order to attract outstanding candidates to the 4-year, 2-year, and 1-year B.Ed. programs, scholarships will be established for deserving students. programmes.

Higher education institutions that offer teacher education programs will guarantee the availability of specialists in a variety of education-related and related fields. Each higher education institution will collaborate closely with a network of government and private schools, where potential teachers will student-teach and engage in other activities like community service, adult and vocational education, and so on. Pre-service teacher preparation programs will be admitted based on standardized subject and aptitude tests administered by the National Testing Agency in consideration of the country's linguistic and cultural diversity in order to maintain uniform standards for teacher education. The diversity of the faculty profile in Departments of Education will inevitably be a goal, but teaching, research, and field experience will be highly valued. In order to strengthen the multidisciplinary education of teachers and provide rigor in conceptual development, teacher education institutions will

attract and retain faculty from science education, mathematics education, social science education, and language education programs with training in areas of the social sciences that are directly relevant to school education, such as psychology, child development, linguistics, sociology, philosophy, economics, and political science.

Courses in teaching, education, pedagogy, and writing related to their chosen Ph.D. will be required of all new Ph.D. applicants, regardless of their field. D subject matter throughout their doctoral training. Since many research scholars will go on to become faculty or public representatives or communicators of their chosen fields, exposure to pedagogical practices, curriculum design, credible evaluation systems, and communication, among other topics, will be guaranteed. Ph. Additionally, D students will have at least a certain number of actual teaching hours gained through teaching assistantships and other sources. For this purpose, Ph.D. programs at universities all over the country will be reoriented.

Through the existing institutional arrangements and ongoing initiatives, college and university teachers will continue to receive continuous in-service professional development; In order to satisfy the requirements of enhanced teaching-learning processes for high-quality education, these will be significantly strengthened and expanded. Teachers will be encouraged to use technology platforms like SWAYAM and DIKSHA for online training so that standardized training programs can be given to a large number of teachers quickly.

A large pool of outstanding senior and retired faculty, including those with the ability to teach in Indian languages, who are willing to provide short- and long-term mentoring and professional support to university and college teachers will be gathered into a National Mission for Mentoring and innovators from various fields will oversee the NRF independently of the government.

Transforming the Regulatory System of Higher Education

For decades, higher education regulation has been excessively stringent; Too many attempts have been made to regulate without much success. Fundamental issues like excessive concentrations of power within a few bodies, conflicts of interest among these bodies, and a lack of accountability have plagued the mechanistic and disempowering regulatory system. In order to reenergize and enable the higher education sector to thrive, the regulatory system must be completely overhauled.

The regulatory system for higher education will ensure that distinct, independent, and empowered bodies will perform the various functions of regulation, accreditation, funding, and academic standard setting in order to address the aforementioned issues. This is deemed necessary to eliminate power concentrations, minimize conflicts of interest, and establish checks and balances within the system. to make sure that the four institutional structures that carry out these four essential functions both independently and simultaneously collaborate to achieve common objectives. The Higher Education Commission of India (HECI) will serve as the umbrella organization for these four structures, which will be established as four distinct verticals.

The National Higher Education Regulatory Council (NHERC) will be HECI's first vertical. It will act as a single, unified regulator for the higher education sector, including teacher education but excluding medical and legal education. As a result, it will eliminate the duplication and

disjunction of regulatory efforts that are currently carried out by multiple regulatory agencies. To enable this single point of regulation, it will require a new look, the repeal of existing laws, and the reorganization of various regulatory bodies. Financial probity, good governance, and the complete online and offline public self-disclosure of all finances, audits, procedures, infrastructure, faculty/staff, courses, and educational outcomes will all be very effectively regulated by NHERC, which will be set up to regulate in a "light but tight" and facilitative manner. All higher education institutions will be required to make this information available on a public website maintained by NHERC as well as on their own websites, where it will need to be kept current and accurate. NHERC will decide on any grievances or complaints made by stakeholders and others regarding the public domain information. Each HEI will solicit online feedback from randomly selected students, including students with disabilities, to ensure valuable input on a regular basis.

Accreditation will be the primary means by which such regulation can be implemented. As a result, the National Accreditation Council (NAC) will serve as the "meta-accrediting body" for HECI's second vertical. An independent ecosystem of accrediting institutions under the supervision and supervision of NAC will carry out the accreditation of institutions, which will be primarily based on fundamental norms, public self-disclosure, good governance, and outcomes. NAC will assign the responsibility of being a recognized accreditor to a sufficient number of institutions. All higher education institutions will be required to meet predetermined standards of quality, self-governance, and autonomy through the implementation of a robust graded accreditation system in the near future. Through their Institutional Development Plans (IDPs), each HEI will, in turn, strive to become self-governing degree-granting institutions or clusters through accreditation at the highest level within the next 15 years. According to current global practice, accreditation will eventually become a binary procedure.

The Higher Education Grants Council (HEGC) will be the third HECI vertical. It will fund and finance higher education based on transparent criteria, such as the institutions' IDPs and their progress toward implementation. The distribution of scholarships and development funds for the establishment of new focus areas and the expansion of high-quality program offerings at higher education institutions across disciplines and fields will be delegated to HEGC.

The General Education Council (GEC), which will define expected learning outcomes for higher education programs, also known as "graduate attributes," will be the fourth vertical of HECI. To facilitate the integration of vocational education into higher education, the GEC will develop a National Higher Education Qualification Framework (NHEQF) that will be compatible with the National Skills Qualifications Framework (NSQF). The NHEQF will describe higher education qualifications that lead to a degree, diploma, or certificate in terms of these learning outcomes. In addition, the GEC is obligated to establish facilitating standards for issues like credit transfer, equivalence, and other similar ones. by means of the NHEQF. In order to prepare well-rounded students with skills for the 21st century, the GEC will be required to identify specific skills that students must acquire during their academic programs.

The professional councils, such as the Indian Council for Agricultural Research (ICAR), the Veterinary Council of India (VCI), the National Council for Teacher Education (NCTE), the Council of Architecture (CoA), and so on, will perform the function of Professional Standards Setting Bodies (PSSBs). They will be invited to join the GEC and will play a significant role in higher education. As PSSBs, these organizations will continue to create curricula, establish

academic standards, and coordinate teaching, research, and field development within their respective fields as GEC members. They would assist in defining the curriculum framework within which HEIs can develop their own curricula as GEC members. As a result, PSSBs would also establish standards or expectations in particular learning and practice areas without acting as regulators. All higher education institutions will determine, among other things, how their educational programs comply with these standards. If necessary, they will also be able to seek assistance from these standard-setting bodies or PSSBs.

By eliminating conflicts of interest between roles, such a system architecture will guarantee the principle of functional separation. It will also try to give HEIs more power while making sure that only the most important things get done. The HEIs will receive responsibility and accountability concurrently. These expectations shall not distinguish between public and private HEIs.

For this to happen, existing structures and institutions will need to be rethought and undergo some sort of evolution. As a result of the separation of functions, each vertical within HECI would assume a unique role that is relevant, meaningful, and significant in the new regulatory framework.

All of the autonomous verticals for Regulation (NHERC), Accreditation (NAC), Funding (HEGC), and Academic Standard Setting (GEC), as well as the overarching autonomous umbrella body (HECI), will operate on the basis of open public disclosure. They will also make extensive use of technology to reduce the amount of human interaction in their work in order to guarantee efficiency and openness. A technology-based, faceless regulatory intervention will serve as the guiding principle. In order to ensure that higher education institutions adhere to the fundamental minimum norms and standards, strict compliance measures with stringent action, including penalties for false disclosure of mandated information, will be implemented. HECI will settle disputes between the four verticals. Each vertical in HECI will be its own independent entity, made up of people with a demonstrated track record of public service, integrity, and high expertise in the relevant fields. The integrity and efficient operation of HECI will be overseen and monitored by a small, independent body of public-spirited experts in higher education. Within HECI, appropriate mechanisms will be developed to carry out its functions, including adjudication.

The regulatory framework will also make it much simpler to establish new high-quality HEIs. It will also ensure with great efficiency that these institutions are established in the spirit of public service and with adequate financial backing for long-term stability. The governments of the Central and State will assist exceptionally successful higher education institutions in expanding their facilities, enabling them to attract a larger number of students, faculty, and programs. In order to further broaden access to high-quality higher education, models of the Public Philanthropic Partnership for HEIs may also be tested.

Effective Governance and Leadership for Higher Education Institutions

A culture of excellence and innovation in higher education institutions is made possible by effective governance and leadership. Strong self-governance and outstanding merit-based appointments of institutional leaders have indeed been the defining characteristics of all world-class institutions, including India.

All higher education institutions in India will strive to become autonomous, self-governing institutions pursuing innovation and excellence through a suitable system of graded autonomy and graded accreditation over a 15-year period. At all higher education institutions, efforts will be made to foster an environment of excellence and ensure the highest possible standard of leadership. A Board of Governors (BoG) of highly qualified, competent, and dedicated individuals with demonstrated capabilities and a strong sense of commitment to the institution will be established once the institution has received the appropriate graded accreditations that indicate that it is ready for such a move. An institution's BoG will be able to make all appointments, including the institution's head, and make all governance-related decisions without interference from outsiders. The Constitution, Appointment, Modalities of Functioning, Rules and Regulations, and Roles and Responsibilities of the BoG shall be established by an Overarching Legislation that shall supersede any contravening provisions of any other earlier Legislation. A Board-appointed expert committee shall select new Board members; Additionally, the BoG will be responsible for selecting new members. When selecting members, equity considerations will also be taken into account. Throughout this process, it is anticipated that all higher education institutions will be encouraged, supported, and mentored. The goal is for them to become autonomous and have such an empowered BoG by 2035.

Through open self-disclosure of all relevant records, the BoG shall be accountable to the stakeholders. Through the National Higher Education Regulatory Council (NHERC), it will be accountable for adhering to all regulatory guidelines established by HECI. People with strong academic credentials, demonstrated leadership and administrative skills, and the ability to handle difficult situations will be considered for all positions of leadership and institution heads. A strong social commitment, a belief in teamwork, pluralism, the capacity to work with diverse people, and a positive outlook are all traits that leaders of an HEI should possess in addition to demonstrating a strong alignment with the institution's overall vision and the Constitutional values. An Eminent Expert Committee (EEC) constituted by the BoG will lead the rigorous, impartial, merit-based, and competency-based selection process. While tenure stability is essential for the establishment of a suitable culture, careful planning will be taken to ensure that good practices that define an institution's processes do not end as a result of a change in leadership; In order to guarantee smooth transitions, leadership changes will occur with sufficient overlaps and not remain vacant. A succession of leadership roles will allow for the early identification and development of outstanding leaders.

All higher education institutions will, in turn, demonstrate commitment to institutional excellence, engagement with their local communities, and the highest standards of financial probity and accountability while receiving adequate funding, legislative enablement, and autonomy in a phased manner. Each institution will develop a strategic Institutional Development Plan on the basis of which it will develop initiatives, evaluate its own progress, and achieve the goals outlined in the plan. This plan may later serve as the foundation for additional funding from the public. Members of the Board, institutional leaders, faculty, students, and staff are all expected to collaborate on the preparation of the IDP.

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NAAC BASED BEST PRACTICES IN ACADEMIC LIBRARIES AND KNOWLEDGE RESOURCE CENTRES: AT A GLANCE

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Abstract : *This paper is mainly focused on various best practices to be followed by academic library. It discusses importance of introducing best practices in academic library to enable it to improve its process and activities, optimize resource utilization and deliver high quality, efficient services to library users.The article throws light on the various best practices to be followed in Academic Libraries and Information Centers. The present paper also highlight NAAC best practices. Paper also mention IT based best practices like Web page, Blogs, Wikis Virtual library tour, E-alert services, etc. Paper also mentions General Library practices & Library extension services. This paper will be useful guide to other libraries to get an idea about various ways & practices can be adopted in their libraries for creating an effective library management.*

Keywords : *Academic Libraries, Knowledge Resource Centers, College Library, Best Practices, National Board of Accreditation and Assessment (NAAC), E-resources and Library services.*

Introduction :

In the present day scenario the fast- accelerate educational innovations become necessary for continuous review and improvement of the overall functions of the library and information centers. In the present age of information explosion the libraries and information resource centre play not just an important learning-support function, but the library itself has been emerging as a site of learning, sometimes more important than even the class -room.

College form the integral part of Higher Education and libraries in colleges are the primary source for learning process. The college library is a connecting link between teaching and learning as well as place which supplements its resources what is beyond scope of class room. Academic Libraries and Information Centers play an important role in the educational history of both the students as well as faculty members. It serves the users by providing specific information to the user. But how far the Academic Libraries and Information Centers are successful in implementing their goals into its reality is a big question. There must be some agency to have a proper vigilance to rectify the emerging needs, and for this kind of purpose. NAAC was established for maintaining quality education of the institutions.

Information and communication technologies (ICT) have made a tremendous impact on the functions of the academic libraries and knowledge resource centre. The developments

and changes in the ICT have changed the user's expectations from the academic libraries in different ways. The ways to build a library collection and offer services to the end users vary from the recent to past exercises.

1. Definition Of Best Practices :

ODLIS (Online Dictionary of Library and Information Science) describes best practices as follows: "In the application of theory to real-life situations, procedures that, when properly applied, consistently yield superior results and are therefore used as reference points in evaluating the effectiveness of alternative methods of accomplishing the same task. Best practices are identified by examining empirical evidence of success."

Need for best practices in Library :

Best practices are developed in the library for following purpose.

- ❖ To execute the five laws of library science.
- ❖ To magnetize & meet the user demand.
- ❖ To maximize the utilization of library.
- ❖ To identify the needs of the users.
- ❖ To market library services and products.

According to National Board of Accreditation and Assessment (NAAC) "Best practice may be innovative and be a philosophy, policy, strategy, program, process or practice that solve a problem or create new opportunities and positively impact on organizations. Institutional excellence is the aggregate of the best practices followed in different areas of institutional activities."

From above definition, best practice means, it is a method or technique used to improve the current workflow of an organization to obtain its objectives effectively & with predetermined standards.

2. NAAC Based Best Practices in Library :

The best practices suggested by the NAAC in its quality indicators in Library and Information services are as listed below.

- ☼ Computerization of Library with standard Software.
- ☼ Inclusion of Sufficient information about the library in the college prospectus.
- ☼ Compiling user statistics.
- ☼ Displaying newspaper clipping on the notice board periodically.
- ☼ Career/ Employment information services.
- ☼ Internet facilities to different user groups.
- ☼ Information Literacy programs.
- ☼ Suggestion box and timely response.
- ☼ Displaying new arrivals and circulating a list of those to academic departments.
- ☼ Conducting book exhibitions on different occasions.

- ☼ Organizing book talks.
- ☼ Instituting Annual Best User Award for students.
- ☼ Organizing competitions annually.
- ☼ Conducting user surveys periodically.

3.1 General Best Practices :

Following are additional practices to be conducted in library as a routine practice.

- ❖ Regular Library Advisory Committee Meeting.
- ❖ Binding of books & periodical Volumes.
- ❖ Inclusive of Library Information in prospects & College Websites.
- ❖ Intercom facility for easy communication among various departments.
- ❖ Pasting of barcode, spine label and stamping in a definite place on the books.
- ❖ Question sets of previous examinations.
- ❖ Library Calendar of Activity & Events.
- ❖ Use of pesticides for keeping away book worm & damage of books.

3.2 Benefits of Internet Facility in the Library :

- The readers are provided with available up-to-date knowledge with Internet facility. Their educational needs have fulfilled.
- The readers are benefitted with online resources by Internet.
- Students make use of Internet facility for filling up e-scholarship forms, to use NLIST journals, e-books, to check emails, to get information from govt. websites, to fill online job application forms, to check results online, etc
- The students make use of Internet to fill up UPSC, MPSC, SET, NET, Enrollment, E-Scholarship forms, Banking Recruitment applications, Railway Recruitment applications, other online forms, etc.
- The teachers get information about the research made in their concerned subjects.
- Teachers to take help from internet sources in their teaching learning methods and reading materials.
- The users of the library are making use of internet on the large scale.

3.3 A few Examples of Experience of Best Practices in Academic and Research Libraries :

1. Dr. S. R. Ranganathan writes that he brought to the notice of Sir C.V. Raman about Raman Effect which was published in a foreign journal. This incident happened in Madras University Library in early thirties. Sir C.V. Raman received the Nobel Prize for his work on the scattering of light which is called Raman scattering or Raman Effect.
2. Mr. T.N. Chaturvedi, former Governor of Karnataka narrated the experience about when he approached Prof. D.N. Marshall, Librarian Bombay University for a book from his Library. Prof. Marshall sent him the book immediately without waiting whether his library rules permitted him or not. Mr. T.N. Chaturvedi wrote to many

university libraries. He received negative reply from them saying that they have the book in the library but their rules do not permit them to send the book

3. Prof. P.K. Mehta, former Pro Vice-chancellor of IGNOU narrates the incident in 1970 when he wrote to Dr. B. Anderson, Librarian of Bombay University Library that he would like to make use of the library and mentioning his area of research work. Prompt reply came from Dr. B. Anderson. Prof. Mehta went to the library and met the librarian immediately. Dr .B Anderson gave him three typed papers and told, " This is the list of books available in our library which, I think are relevant to the area of your work " and told him please feel free to contact me if you have any difficulty or need of any assistance. Prof. P.K. Mehta spent few weeks in the library. Prof. P.K. Mehta comments "A library is provision and every provision in judged on the basis of three parameters: Availability, Accessibility and Utilization".

4. Quality Indicators For The Library :

The details relates to the library users, services offered, facilities, collection, rules, budget, usage of services, extension activities etc. and at every step students and teachers are the party in complying with it. In other words we can say that involvement and support of these elements play a crucial role in the self-study report writing exercise. Hence maintenance of daily record needs serious attention. Library rules and the awareness among the users combined with alertness on the part of the library staff becomes the major requirements. It is true that libraries largely support learning, teaching and research processes in institutions. The set of questions framed for the library focuses on library infrastructure, collection, management and services. Extension activities and best practices are also covered. This can be explained in more details by dividing these questions into different headings.

5. Utilization Of The Library Services :

To check the utilization of the available services, various details about the working hours of the library (including Sundays and holidays, and after and before the class hours, during examination) are noted. Facilities like computers and internet connectivity, reprographic service, status of library automation, open access system, number of books issued daily, fine etc are the key questions. Various services are listed in the guidelines like circulation, clippings, bibliographic services etc. Inter library loan service, user orientation and information literacy programs are to be explained. Services used are evaluated through different data like average no. of books circulated, no. of reference queries received, no. of students visiting library, no. of teachers visiting library, display of new arrivals, awareness services etc.

6. Best Practices To Enhance Academic Activities :

In the library context, the best practice may be those services through which the users are able to explore more resources and facilities from the library. This includes steps taken by the library to attract more users by creating suitable academic information environment. Here library is expected to focus on users needs while introducing new services and facilities to them. Guidelines speak about the best practices in relation to new developments in the field.

Service introduced as a best practice today may turn in to an essential one. Previously internet access in the library was considered as the best practice but today it has become an essential service.

Best practices questions includes computerization of library with standard digital software, inclusion of sufficient information about the library in the college prospectus, compiling student/teacher attendance statistics and locating the same on the notice board, displaying newspaper clippings on the notice board periodically, career employment informationservices, internet facilities, information literacy programs, suggestion box, displaying new arrivals, circulating a list of those to academic departments, conducting book exhibitions on different occasions, organizing book talks, instituting annual best user award for students, best intellectual library award, organizing competitions annually and conducting user surveys periodically.

7. Traditional Best Practices :

a. **Book Exhibition** : Arrange book exhibition on different occasion (i.e. National Library Week, World Copyright Day, Independence Day etc.) display rare books, newly added books or books of particular subject which are available in the library. This will lead to increased awareness among readers about knowledge wealth the library possess they can demand the books accordingly.

b. **Library Hour** : Library should start Library hour for students, It made compulsory for all the students by adding it in their daily class schedule. In Library hour students should. Visit the library for spending an hour in the library for reading materials. By keeping an hour in their time table students spend an hour in the library which brings them closer to the reading materials, indirectly it helps to increase reading habits to of students.

c. **Orientation Programme** : Orientation is one of the best practices to create awareness among the students about the library resources, services good reading habits and activities for maximum utilization of the library. The orientation helps & useful to the fresh students at the beginning of each academic year about the importance of the library, exposing the students to its various library services.

d. **New Arrivals :** Putting the list of newly available books on notice board will make the reader aware about the new reading material so that accordingly he could demand for those new books & get it.

e. **Library Brochure** : It is one of the important sources for creating exactitude about the library environment, services & collection of the library students can be provided the information broacher at the time of Admission. The information brochures include information about the library facilities, like Xerox, internet etc, latest publications, latest editions to the library, CD / DVD list, book bank facilities, library rules & regulations, electronic resources & online information services etc.

f. **Book Reviews** : User should asked to read all the book and give his review on book. At the end Librarian should collect it & displays it on notice board under the name of reviewer.

g. **Readers Club** : Library should give its facility to outside reader campus. Library also establish a reader club. This club maintain good relation between library & outside users.

h. **Library short Term course** : The aim of this practice is to create understanding about library, use of ICT equipment in library & to know the mechanics of library. For this library should organize a two to three months duration course for the benefit of user community. In this course, feeding of data entry for books, creating reader profiles, generating barcode printing & scanning the photo of reducing etc training should be given.

i. **Training to use E-Resource** : Training programmes should be conduct for student, teacher every year for two to three days as per their need. In this programme, how to find out library books by using Library OPAC, use of library consortiums, free online journals (DOAJ), link to various useful websites etc. training should be given so that library resources, services use more effectively & efficiently.

j. **Indexing & Abstracting Services** : An indexing and abstracting service is a service that provides shortening or summarizing of particular documents and assigning of descriptors for referencing documents.

k. **Staff User Meet** : The libraries may organize activities to staff users, which involving to work & share their ideas with each other relating to the new information services & their requirements. This helps to keep abreast the staff & the users about the latest developments & trends in library principles & practices, there by bridging the gap between the staff & users for this arrange various activities such as workshops, seminars and guest lectures.

l. **Best Library user Award** : This practice should encourage students/ staff to make maximum use of library resources & services for every academic year.

m. **Carrier Guidance Cell** : User comes to library for searching information regarding their carrier or educational development. Today competition is going on top level, students must aware of this situation. In this context Library and Librarian should play a important role to solve their problems. Library should have very rich collection of competitive examination. Library should invite to guest lecturer for guiding to users for bright carrier.

8. ICT Based Best Practices :

a) **Computerized Library with Library Software** : Software consists of the stepby-step instructions that tell the computer what to do. In a University Library, the most common computer software used are library automation software, database management software, antivirus software and application software. Many software packages for various applications in the field of library & information services and management are New Gen Lib, Autolib, SOUL, LIBSYS, KOHA etc. used for automation purposes.

b) **Library Webpage** : A library website provides a library with a website to offer its services and to tell its story to its community. In most of the library website online catalogue is included. A library web page or Universal Resource Locator (URL) facilitates single window access to various web enabled library services.

c) **Online Public Access Catalogue (OPAC)** : It is the computer form of library catalogue to access materials in the library. It is an online database of materials held by a library or group of libraries. It is a computerized library catalogue available to the public. Most OPACs are accessible over the Internet to users all over the world.

d) **Electronic Document Delivery Services** : At present, a document delivery service typically involves a combination of paper, digital and electronic media; document delivery is a "hybrid" medium. Libraries are implementing ICT based interlibrary lending system using electronic networks to deliver copies of journal articles and other documents in digital format [mainly in Portable Document Format (PDF)] to library users' desktops.

e) **CAS & SDI Services** : A selection of current-awareness services in the form of Table of contents' (TOC) alerts, List of new arrivals of journals and Books, Press Clippings, Research Digest, including Abstracting and Indexing Service have been started by the library. Selective Dissemination of Information refers to tools and resources used to keep a user informed of new resources on specified topics.

f) **Electronic Mail (E-mail)** : This medium can also be used to send and receive mails. This is commonly and widely used with the internet facilities. E-mail is very useful for sending messages to and from remote areas with enhanced network. Further, it is also useful in various aspects of library environment. Thus, it may be stated that e-mail may play a significant role in information dissemination services.

g) **Electronic Resources** : The e-Resources on magnetic & optical media have a vast impact on the collections of university libraries. The commonly available electronic resources are accessed electronically through traditional medias like CDROMs, or through internet as electronic journal, online database databases, eBook, or in the form of OPACs, blogs, wikis, podcasts, etc.

h) **Institutional Repository** : An institutional repository is an online archive for collecting, preserving, and disseminating digital copies of the intellectual output of an institution. Library should develop institutional repository of Question paper, Syllabus, Research papers, Notes, carrier guidance etc can be made available for user community.

9. Conclusion :

The best practices are help for improving quality of library services. The best practices adopted in academic institutes should bridge the gap between library collection & user community for maximum utilization of the resources. Library adopted various best practices in its administration, management, collection & services, extent of the use of services and use of technology. The technology based services are essential for providing up-to-date information to user community. In its effective implementation that make significant change in enhancing the use of information sources/services and users satisfaction level. The above best practices by every academic institution library creates its own image in the mind of students, faculty & society

NAAC policy helps in developing the Academic Libraries and Information Centers to make modernize and to provide good standard service to users. This is the best methodology

for measuring themselves to find deficiency to enhance the library services, which support get maximum score based on certain criteria's, this paper clearly explains importance in maintaining the library to full fill the quality for the NAAC policy.

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USAGE PATTERN OF LIBRARY RESOURCES AND SERVICES BY STUDENTS OF DR. BAPUJI SALUNKHE LAW COLLEGE, OSMANABAD

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Abstract : *This study investigates user satisfaction of law students of Dr. Bapuji Salunkhe Law College, Osmanabad (Maharashtra). The study focuses on information required by the students and satisfaction level, what resources they require, methods for locating information, library collection, services and facilities available in the library. A descriptive survey method was used & the data was gathered through the questionnaire completed by 180 students, the users' opinions and suggestions have been collected in this study for data collection process.*

Keywords : *Users study, Usage Pattern, Collection Development, Library Services, Best Practices, College Library, LAW, INFLIBNET and N-LIST.*

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1. Introduction :

India has a large educational system comprising thousands of colleges & hundreds of universities along with several institutes of higher learning & centers of excellence. The college & university libraries being the nerve centers of the higher education & learning play a vital role in support of all the activities such as teaching, research & publication.

Libraries are established to provide the information needs of their users, which is an essential for the students in their mental development in this complex and modern society. It is a prerequisite for socio-economic, cultural, scientific and personal development. Information may be stored in various forms, including print & non-print media, the second law of library science reads as "Every reader his her books" It means readers coming to the library for information searching & must be provided by the any type of libraries.

2. Use Study :

Use is a behavior; it leads to meet individual needs. A user study is a systematic examination of characteristics and behaviors of an Information system. The term user study reflects on, information use patterns, information needs, & information seeking behavior. Hence the investigator conducted user studies in order to improve the present library services, plan for new services, adjust the limited funds, evaluate the performances of the library & enhance the user satisfaction, such studies will help the librarians, authorities to know the satisfaction of users with the services, facilities type of the new service desired, & the funds required for their implementation.

3. Dr. Bapuji Salunkhe Law College, Osmanabad :

Dr. Bapuji Salunkhe Law College, Osmanabad is affiliated to Dr.Babasaheb Ambedkar Marathwada University, Aurangabad. Osmanabad is considered as semi-urban area. Until, 17th September, 1948 it was under Nizam rule. Later it was merged with Union of India. Our Management started the Law College to cater the needs of Legal Education in backward area. This College is 250 Km away from University Headquarters. To provide Legal Education to the needy & poor people of this area in terms of fees & expenses, this college location is beneficial to all the people here. We also conduct Legal Aid & Legal Literacy Camps to have the Legal Awareness as well as National & State Level Moot Court Competition. The College is affiliated to Dr.Babasaheb Ambedkar Marathwada University, Aurangabad.

The faculty members actively participate as the members of Board of studies, Faculty of Law, Dr.Babasaheb Ambedkar Marathwada University, Aurangabad. The college has provided wide range of core options, elective options, interdisciplinary courses and flexibility to the students as per their interest and likings. The adequate infrastructure and learning resources in respect of classrooms, library, playground, hostels, canteen (sharing with the sister institution), and other amenities have been consistently developed, extended, maintained and enriched from time to time.

The college library has the extensive reference books for research. It contains the infrastructure facilities like a computer lab, internet, printer and photocopier. In addition to that an extensive database of Supreme Court, High Court cases, State and Central legislations has been provided along with up to date collection of journals, magazines and periodicals.

The involvement of faculty in research activities is promoted through Research Committee. Moreover the college has planned to initiate the work towards an academic association with various other organizations. The library has rich collection of text books,

reference books, journals, e-books, e-journals. Internet access to students is provided through Information Center of the College. Understanding the need of Osmanabad Districts, Shri Swami Vivekanand Shikshan [SSVSS] Kolhapur's founded this College in 1984 under the leadership of Honourable Bapuji Salunkhe. The College has following full-fledged facilities -

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- N-LIST E-resources
- Computer Lab with 10 computers
- Ladies Hostel
- Gymkhana
- 16 Journals + 04 Newspapers

4. Sant Dnyaneshwar Library (Sdl) :

The library is the lung of every educational institute, which breathes knowledge and information into the minds of the students. The Library Advisory Committee considers the development proposals of the library and budget allocations and policy decisions. It also provides directions for a structured and balanced growth of the library and to provide improved facilities and innovative services. Allocation and utilization of funds and introduction of developmental programs and requirements of the users are addressed and approved by the Library Advisory Committee.

4.1 **Collection development :** The Library and Information Centre came into existence in the year 1984. The main Library is equipped with a good number of national and international books, journals in the field of Family Law, Company Law, Labour Law, CRPC, CPC, ADR, Human Right, English, Management and General reading, etc. and also with the modern and latest technology to cope up with latest development to provide quality and quick services to its users.

4.2 **Library Staff :** Library and Information Centre has good team of qualified Professional and Non-Professional Staff.

4.3 **Library Services :** ASPC's Library and Information Centre is providing the following services to its users.

- Circulation
- Reference Service
- Current Awareness Service
- Selective Dissemination Service
- Reprographic Service
- Audio-Visual service
- News Paper Clipping Service
- Legal Awareness
- Interlibrary Loan
- WEB OPAC

4.4 Library Automation of SDL :

Dr. Bapuji Salunkhe Law College, Osmanabad is one of the Best College of its kind in Marathwada Region to have a computerized Library Services. Computerization started since January, 2013 and built a complete database of over 10,246 books. Further we have Online Services provided to our users through UGC & INFLIBNET N-LIST program with INTER LIBRARY LAN SYSTEM consisting of 7 terminals connected to, the library and information center Server storing our database.

The project was implemented at the SDL, Dr. Bapuji Salunkhe Law College, Osmanabad. It deals with the automation of the entire library system thereby reducing paperwork and increasing efficiency. A Library plays a vital role in any education. College has the latest and best possible books, magazines, journals, audio-visual aids for the student and faculty members. The students use these books for their academics, general knowledge etc. Our College Library has one of the best and wide collections of related Academic books and journals. Our dedicated and always helping Library Staff takes care of each and every student by availing them with best of their requirements. The functioning of the existing system was studied and following details were determined.

4.4.1 SOUL Software :

Software for University Libraries (SOUL) 2.0 is state-of-the-art integrated library management software designed and developed by the INFLIBNET Centre based is used. The latest version of the software i.e. SOUL 2.0 was released in January 2009. It is user-friendly software developed to work under client-server environment. The software is compliant to international standards for bibliographic formats and circulation protocols. After a comprehensive study, discussions and deliberations with the senior professionals of the country, the software was designed to automate all house-keeping operations of library. The software is suitable not only for the academic libraries, but also for all types and sizes of libraries, even school libraries. The database for new version of SOUL is designed for latest versions of MS-SQL and MySQL (or any other popular RDBMS).

SOUL 2.0 is compliant to international standards such as MARC 21 bibliographic format, Unicode based Universal Character Sets for multilingual bibliographic records and NCIP 2.0 and SIP 2 based protocols for RFID, electronic surveillance and control. The Online Public Access Catalog (OPAC) is used to carry out online searches of library database by Author, Title; Keywords and Accession Numbers, which enables users to provide good reference service to staff and students.

5. Objective Of The Study :

- To identify the type of information sources needs to the students.
- To know the purpose of seeking information
- To know users opinion about the library.
- To find out the satisfaction level of users & effectiveness of the library services.
- To suggest some measures this will help the student to use the library more effectively.

6. Scope & Limitation Of The Study :

The scope of the present study is limited to Students of Dr. Bapuji Salunkhe Law College, Osmanabad. The main focus of this study is to identify the needs & requirements of users in general & to know the use of College Library.

7. Research Methodology :

Survey method has been used for the present study. This method plays a significant role in research as can be seen from the statement.

"The survey method is one of the most effective & sensitive instruments of research, survey research can produce much needed knowledge".

A questionnaire is prepared to collect the data from students of Dr. Bapuji Salunkhe Law College, Osmanabad. At present there are 443 students are studying in this college for different degrees i.e. Pre Law, LL.B. and LLM. A sample of 205 (Krejcie and Morgan, 1970) students has been selected as a samples size given by Krejcie and Morgan in 1970. The questionnaire was distributed among the different branches to the selected post-graduate students 180 (87.80%) students have completed and returned the questionnaire.

8. Data Analysis & Interpretation :

The collected data are analyzed and interpreted below.

8.1 Subject wise Students Strength : Responses received were analyzed to know which subject the respondents belong. The analyzed data is presented in table no.1

Table No.1 Class wise strength of Students

Class	No. Students		Percentage
	Male	Female	
Pre Law I	17	23	07.27
Pre Law II	10	19	05.27
Pre Law III	25	69	17.09
Pre Law IV	11	22	06.00
Pre Law V	16	27	07.84
LL.B. I	34	112	26.54
LL.B. II	06	18	04.36
LL.B. II	14	25	07.09
LL.M. I	15	37	09.45
LL.M. II	17	33	09.09
Total-	**165**	**385**	**100**

It is observed from table no.1 that out of 443 student 146 (26.54%) were for LL.B. I among the three classes, followed by Pre Law III 17.09% and the strength for all the rest class were 4% to 9 % for each class.

It is concluded that more number of students admitted for LL.B. I than all other class.

8.2 Frequency of Library Visit :

The distribution of students according to the frequency of library visit is shown in table no.2.

Table No. 2 Frequency of Library Visit

Frequency	No. of students	Percentage
Almost Daily	22	12.22
Once in a week	115	63.88
Twice in a week	28	15.57
Once in fifteen days	08	04.45
Monthly	07	03.88
Rarely	00	00.00
Total-	180	100

It is found from table no.2 that out of the total 180 Students, 115 (63.88%) were visiting the library once in a week or almost daily, 15.57% twice in a week, 12.22% almost daily, while 8.33% Post Graduate student were visiting once in fifteen days or monthly, no students were found who use the library rarely.

8.3 Purpose of Library Use :

Attempts were made to know for what purpose users use library. The analyzed data is presented in table no 3.

Table No. 3 Purpose of library use (N=180)

Purpose	No of Respondents*	Percentage
To Lending books to read	145	80.55%
To Consult Periodical	74	41.11%
To Read News Paper	85	47.22%
To Use Internet-E-mail	10	05.55%
Search Online and Offline Database	05	02.77%
To Keep Update Knowledge	65	36.11%
Preparing Article	22	12.22%
To Writing Notes	45	25.00%
Fun & Enjoyment	25	13.88%
As Meeting Point	20	11.11%
Photocopying Material	15	08.33%
To Preparing Competitive Exam	25	13.88%
To Preparing for Debating Elocution	07	03.88%

*Multiple responses

It can be revealed from the table no.3 that the main purpose of 80.55% post graduate students was lending the books for home reading, 47.22% and 41.11% students purpose was to read newspapers and to consult the periodicals respectively, while 36.11% users were

using the library to keep update knowledge and 37.22% were attending library for preparing article and writing notes, 13.88% were using for preparing competitive exam. Very less number of the student were using the library for internet browsing and online as well as offline database, nearly 25%were using for fun & enjoyment and as meeting point of view. As well as 8.33% users purpose was getting photocopy of the required reading material while 3.88% users were using the library for preparing debating elocution.

Hence it is clear that the post graduate student are not much aware about e-resources provided by the library, the main purpose of these users were to collect the required information through print resources available in the library as per their prescribed syllabus.

8.4 How to Find out Required Information Sources :

Attempts were made to know for how the users get required information. The analyzed data is presented in table no. 4

Table No.4 How to Find Out Required Information Sources (N=180)

Sources	No Respondents	Percentage
OPAC	115	63.88
Library Staff	75	41.66
Teachers	135	75.00
Friends	52	28.88
News Papers	42	23.33
Periodicals	64	35.55
Browsing Publisher Book Seller Catalog	13	07.22
Library Shelves	32	17.77

* Multiple Responses

It is observed from table no.4 that 75% post graduate students highly depends on their teacher and 63.88% browsing the books on OPAC to find out the required documents. These two are followed by assistance form the librarian and library staff 41.66%, Searching periodicals 35.55% help from friends 28.88%, browsing news papers 23.33% and browsing book seller & publishers catalogue 07.22%, therefore it is clear that major students consult to their teacher and browse the book on OPAC for the relevant documents.

8.5 Availability of Resources in the Library :

The vital aim of the library is to provide the required reading material to the students, researchers, and faculty of the college. These users need highly specialized and advanced information on the subject of their specialization in a variety of sources like text books, reference books, periodicals, news papers, or magazines, thesis dissertation reports, e-resources etc.

The distribution of post-graduate students according to the sufficiency of various information resources, which has been shown in table no.5

Table No.5 Availability of Library Resources (N=180)

Library Resources	Sufficient		Not Sufficient		Total
Text books	105	58.33	75	41.66	180 (100%)
Reference Sources	115	63.88	65	36.11	
Periodicals	135	75.00	45	25.00	
News Reports	25	13.88	155	86.11	
M. Phil Dissertation/ Project work	148	82.22	32	17.77	
E-resources	05	2.77	175	97.22	

It is clear from table no.5 that post graduate students opined, text book collection was sufficient while 41.66% student indicated that was not sufficient. It is an evident that 63.88% student noted that reference collection in the library is sufficient while 36.11% were of the opinion that was not sufficient, 75% were satisfied with periodical resources while 25%. Were found not satisfied 82.22% students also indicated that M.Phil dissertation & project work was good and sufficient while 17.77% stated that was not sufficient. As regard the collection of e-resources 97.22% felt that it was not sufficient while only 2.77% felt it was sufficient.

Hence it is concluded that majority of student were not satisfied with the e-resources, reports the notable thing is that they were quite satisfied with text, reference & periodicals, dissertation collection.

8.6 Satisfaction about Library Services :

The main objective of college library is to collect, organize & retrieve the information to faculty, researcher and students of college community, Effective services will improve &

deliver right information to right time to the right user in right manner, in the age of it libraries will have to play a vital role by providing information through modern techniques to render its services more efficiently and qualitatively. The distribution of students according of the satisfaction of different library services is shown in table no.6

Table No. 6 Satisfaction of Library Services

Library Services	Satisfaction Level		Total
	Satisfied	Not Satisfied	
Circulation Service	149 (82.77%)	31 (17.23%)	180 (100%)
Reference Service	135 (75%)	45 (25%)	
Reader Orientation Service	128 (71.11%)	52 (28.89%)	
Photocopying Service	44 (24.44%)	136 (75.56%)	
Internet Service	115 (63.35%)	65 (36.11%)	
Inter Library Loan	15 (8.35%)	165 (91.67%)	
CAS Service	145 (80.56%)	35 (19.44%)	
Bibliographic Service	117 (65%)	63 (35%)	

The table no.6 shows that post graduate students 82.77% are satisfied while 17.23% are not satisfied with circulation service, It is also an evident that 75% are satisfied while 25% not satisfied with reference service 71.11% are satisfied 28.89% not satisfied with reader orientation service 75.56% are not satisfied while 24.44%fied with photocopying service 63.89% are satisfied while 36.11% are not satisfied with internet & email service 91.67% felt not satisfied and only 8.25% are satisfied with inter library loan.

As regards the CAS 80.56% are satisfied while 19.44% are not satisfied, 65% are satisfied while 35% are not satisfied with regard to bibliographic service.

8.7 Library Facilities :

The library has to maintain its inner & outer environment cleanliness, proper ventilation, appropriate space for reading as well as provide drinking water, sufficient lighting, furniture, toilets % use library resources more effectively.

The distribution of the responses about satisfaction of various facilities shown in table no.7

Table No. 7 Satisfaction of Library Facilities

Library Services	Satisfaction Level		Total
	Satisfied	Not Satisfied	
Specious Reading Room	155 (86.11%)	25 (13.89%)	(100%)
Cleanliness	175 (97.22%)	05 (2.78%)	
Furniture	164 (91.11%)	16 (8.89%)	
Ventilation	171 (95%)	09 (05%)	
Lighting	177 (98.33%)	03 (1.67%)	
Drinking Water	75 (41.66%)	105 (58.34%)	
Toilet	160 (88.89%)	20 (11.11%)	
Power Backup	173 (96.11%)	07 (3.89%)	

It is observed from table no.7 that above 86 to 98% students are satisfied over al the facilities provided by the libraries except drinking water 58.34%, toilet 11.11 users are not satisfied with these facilities.

9. Conclusion :

The findings of the study include that 63.88% student of Law College visit the library once in a week the purpose of borrow books for reading purpose, to locate the books most of users consult with OPAC for getting the relevant document & other reading material, They are also getting the resources like text books, reference and periodicals in sufficient manner while e-resources are found not sufficient in the library overall students are satisfied with the library services and facilities provided to them by the library. The % of not satisfied user is less. However user feedback practices of library revaluation by students' users have really helped the library to function more effectively.

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A Study of Stress Management of Super Market Employees Special Reference to D Mart

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Abstract:

The policy of the Government is to empower a strong and vibrant industry to develop national economy that can provide employment, good quality product in low prices, to satisfying the growing needs of the people. Supermarket has a multifaceted advantage so; contribute to provide sustainable employment and the economic growth of the nation and confidence for an increasing share of the world market. Presently, the mall culture is the new trend in the middle and lower middle-class people. Organization performance is depending on various factors so it is required to understand what factors influence to creating a high performance. In view of Human Resource management workers are as an asset to be used by for the wealth creators of the organization. One of the most significant factors is stress among employee. There is a need for research to identify the relation between the nature of the work and mindset of the employees towards their work. SWOC analysis technique will be helpful for managing the stress in super mart. The organization should formulate strategies where stress can be decrease or coped. Social, emotional and economical support should be available to the employees to cope with the stress effectively. This research paper is to identify the problem of stress of employee through primary and secondary data and to make findings on the problem.

Keywords: Stress Management, Work Culture, Work Environment, Supermarket

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Introduction:

Before twenty years ago super market sector will be growing unbelievable and running very successfully. India economy is going to become a 5 trillion dollar in next one decade. Presently, the mall culture is the new trend in the middle and lower middle-class people. The FMCG Company diversified its activities and started its own outlets in urban and semi urban cities. The super mart company is providing FMCG goods and services through malls and the company's brands are well accepted by the common people. The Dmart Company has setup their number of outlets in pan of India and some are under construction also. DMart is a supermarket chain that provides customers a basic home and personal products. DMart store provide utility products like as food,

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toiletries, beauty products, garments, kitchenware, bed and bath linen, home appliances, etc. DMart was started by Mr. Radhakishan Damani in Powai in 2002.

DMart has 302 branches located across India in 17 states. It provides the lowest priced retailer in the regions. The supermarket chain of DMart stores is owned by Avenue Supermarts Ltd. and the company has it's headquartered in Mumbai. Company has developed various brand e.g., D Mart, D Mart Premia, D Homes, Dutch Harbor, D Mart Minimax, etc. DMart had hired a total number of 10,713 permanent and 58,597 contractual basis employees. The company launched its initial public offering (IPO) in Tuesday, 21st March 2017 and got listed on the NSE and BSE. On its listing date 22 March 2017, it became the 65th most valuable Indian enterprise. Stress has two types- i) positive ii) negative. Negative stress is a danger for organization and employee also. The numbers of employees are facing heavy stress in every sector because of heavy work load, sex, race, age discrimination, dominant management, bad work culture, bad health, working condition, Job security, career concerns, etc.

Significance of Study:

Organization performance is depending on various factors so it is required to understand what factors influence to creating a high performance. One of the most significant factors is stress among employee. The performance organization are affected by the way employee daily work practices by stress Initiatives like as- Learning Organization, Process Re-engineering, Diversity Training, Collaborative Team Work, etc. For high performance an organization that brings out the best in its people and need to understand that how stress affects employee's intellectual, emotional, and interpersonal daily work practice. Through this research paper, researcher can give some suggestions to prospective stakeholders to increase the probability their employees will not be under by stress and they perform at optimal level.

Need and Scope of the Study:

The stress and strain of supermarket is associated are highly individualistic and greatly differ work culture of organization. Stress itself is a function of a number of sections; the nature of the work itself is a major stress factor. There is a need for research to identify the relation between the nature of the work and mindset of the employees towards their work. The need of this study was all about the stress management and find out solutions to tackle the stress related problem.

1. This study covers all level of employee working in the organizations, who are on the payroll of the company i.e. Grade – I, Grade – II, Grade – III and Grade – IV.
2. The study collects some a part of the universe as the sample i.e. 30 employees only for the Surveying purposes.
3. The need for this study in the organization is majorly to understand the stress level among Employees.

Objectives of the Study:

1. To understand the various factors by which the employees get stress at work place.
2. To understand the work nature of the employees and it's associated with stress.
3. To examine the typical ways by which the stress would be de-stressed.

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4. To give suggestion adequate stress-coping strategies.

Hypothesis of the study:

H_1: There is a significant effect of work stress on employee's health in supermarket.

H_0: There is a significant difference in personal and work behavior under stress employees and without stress employees in organization.

Research Methodology:

Descriptive and Analytical Research design has been used for this research study. Convenience Sampling were used for the study so that the sample could be categorized into four groups as per convenience of the researcher. A sample size of 30 has been selected for the study. Simple Random sampling method was used for selecting of samples. For data collection, contact with the employees had made through a structured questionnaire used. Employee feedback is an important part of assessing level of stress among employee. Structured questionnaires were used for data collection. Different sources are used for research to collect the data i.e. magazine, journals, internet, publications, articles, books, thesis, etc.

Limitation of the Study:

This research has considered only employee working in DMart supermarket at Osmanabad outlet. Since the period of study is limited to 15 days. The study covers all permanent and contractual employees.

Analysis and Interpretation of Data:

Percentage and ratio method used for comparison between two or more variables

Percentage of respondents = (No of respondents/ Total no of respondents) * 100

Weighted average is calculated as follows,

Weighted average = sum Wi (Xi) / n

Where,

Wi - Weightage

Xi – Number of Respondents

n – Total number of responses

Study is observed that 72% of the respondents are male and remaining is female. It means that majority of the respondents are male.

It is observed that 87 % of the respondents belong to the age group of 20 to 30 years. 5 % of the respondents belong to the age group of less than 20 years. 7% of the respondents belong to the age group of more than 30 years. It is found that majority of the respondents belong to the age group of 20 to 30 years.

This study is observed that 40% of the respondent's salary income is less than Rs. 20000/-. 35% of the respondents' salary is between Rs. 21000 to 35000/-. 25 % of the respondents' salary is more than Rs. 35000/-. It means that majority of the respondent's salary is between less than Rs. 20000/-.

It is observed that 27% of the respondents are married 73 % of the respondents are unmarried so it is found that majority of the respondents are struggling for marriage.

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It is observed that 31% of the respondents have experience less than 2-3 years. 47 % of the respondents have experience of 3-5 years. 22 % of the respondents have more than 5 years of experience, so it is found that majority of the respondents have 2 to 3 years of experience.

It is observed that 43% of the respondents require that a mid-break facility is necessary. 27% of the respondents feel that mid break facilities is not required. 28% of the respondents feel that there is slight problem in the break facilities. 2% of the respondents feel that there is a major problem in the break facilities. So it is concluded that there is a minor problem in the break/ rest facilities.

It is observed that 57% of respondents give inappropriate reasons for absent. 24% of the respondents occasionally give wrong reasons. 19% of the respondents never give correct reasons. It is found that the majority of the respondents are absent to work and provide inappropriate reasons they were mention in leave application.

It is observed that 89% of respondents always struggle for betterment of their existing position. 11% of the respondents sometimes expect for betterment of their position and achievement. 00% of the respondents never strive for betterment of their existing position. It is found that the majority of the employees try for betterment of their position and achievement.

It is observed that 13 % and 15 % respondents are strongly satisfied and satisfied with their job assignment. 25 % repondents are neutral and 47 % respondents are not satisfied with their job assignment. So it is found that majority of the employees are not satisfied with their job assignments.

It is observed that 78% of respondents have inappropriate for their hobbies and to take care of themselves. 18% of respondents sometimes have inappropriate for their hobbies and to take care of themselves. 2% of respondents enough time for their hobbies and to take care of themselves so it is found that majority of the employees are having less time for their hobbies and to take care of themselves.

It is observed that 63% of respondents expected that existing policy of flexible working hours are good. 25 % respondent do not any objection with existing policy, 10 % have major issue 2 % have minor issue with existing working hours. So, it is found that majority of the employee expected to working hours should be more flexible and good.

It is observed that 17 % respondent are strongly satisfied while 13 % respondents are satisfied, 33% of the respondents are neutral and 37% respondent are strongly dissatisfied with their compensation scheme. It is found that majority of the respondents are strongly dissatisfied with their compensation scheme.

Hypothesis Testing:

H_1 : There is a significant effect of work stress on employee's health in supermarket.

H_0 : There is a significant difference in personal and work behavior under stress employees

and without stress employees in organization.

P1=0.9

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P2=0.3
P=70*0.9+70*0.3
70+70
P= 0.6
Q=1-0.6
Q=1-0.4
Q=0.6
Z=1.4
PQ (1/70+1/70)
H0:P1=P2
H1: P1=P2
Z tab= 1.96
Level of significance=5

H_0 is accepted,

As per the hypothesis tested the there is difference in personal and work behavior under stress employees and without stress employees in organization.

Suggestions:

1. The employees must be provided training to improve their skills, so that they would gain Confidence about work
2. Organizes yoga, meditation, funny games event etc. for employees to reduce stress. Job Rotation and job enrichment are giving different and expected work to employees for Eliminating tedious in job the management should be regularly followed up whether the Employees are satisfied with their allotted work.
3. The frequently of recess in the work hours and also provide entertainment facilities to Employees. Precaution should be taken about the employee's working hour not more than Nine hours in a day. Ensuring the individuals allotted work as per their interest.
4. Providing required guidance and support to employees who are suffering high level stress. Organization should fame flexible working for employees and also providing social or Emotional support
5. To introduce the incentive and fringe benefits scheme to employees.
6. To give travel trip and entertainment opportunities in India and abroad to reduce the stress.
7. To provide hospital and education facilities to their family member reduce the mental Stress

Conclusion:

Stress is a well-known fact that workers can make or break a concern. In view of Human Resource management workers are as an asset to be used by for the wealth creators of the organization. It is clear that the management and human resource have to work jointly to achieve the organization goal so, it is necessary exist a better understanding among the management and workers. Stress is unavoidable part of everyone life. Certain amount of stress has managed by common people efficiently. The organization should formulate strategies where stress can be decrease or coped. Social,

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emotional and economical support should be available to the employees to cope with the stress efficiently. It is necessary to provide everyday work plan by organization helpful to employee what they will be in advance. Organization should overview of employee stress periodically basis it is possible to take preventive measures reduces stress at minimal levels. Concentrating focus groups will be effective in stress management. Stress is associated with emotional problem and personal conflicts and it is affect to organization overall performance. Sign of stress can affect to productivity, absenteeism, and employee turnover. For effective stress management is required sound, realistic and employee's favorable human resource management policies.

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A Study of Sustainable Development in India @ 75: Opportunities and Challenges with reference to Commerce and Management

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Abstract:

In order to understand the concept of sustainable development, first we have to understand why this concept is significant and noteworthy. The concept of sustainable development is a significant milestone to each and every sector of the Indian Economy. Sustainable Development contribute in the various ways to the Indian economy. Why we have adopted a sustainable development policy? What Kind of Strategies should be adopted to tackle the various challenges and opportunities related to Sustainable development. Because simple reason is that we have to maintain the certain organism and the environmental protection should be adopted or how they can be best implemented. The concept of sustainable development is motivated conceptual theory. In this way, most of the business leader and strategy framer, policy maker and academician have adopted same interpretation of this concept.

The concept of sustainable development has emerged in the 1970s with the emerged of industrial development. The industrialization has increased rapidly in the 1970-80. Thus, the impact of industrialization on the environment and environmental issues have attracted to give the special attention toward the sustainable development. Many of the people believe that social and economic change through the sustainable development but present sustainable development quit lagging behind. Hence, it is important to study the sustainable development and opportunities and challenges in India This Research paper explore the potential contribution of Education and Management to sustainable development. This research paper tries to explore the relationship between Sustainable Development and Commerce and Management.

Keywords: Sustainable Development, Economic Growth, Inequality, Industry, Service and Technology, Globalisation, Environment, Motivation

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Introduction:

India had played a significant role in shaping sustainable development in the world. Unsurprisingly, India's national development goals are mirrored in the sustainable development policy for World. While targeting the overall development and Industrialization, the government had set inclusion goals. So, The Government of India had adopted a strategy and Policy to focus on basic fundamental things for sustainable

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development. First, we have to understand why this concept is significant and noteworthy. India has federal structure to frame, to design, and to implement the governance for sustainable development policy in India. Several major programs had been implemented by the Government of India to address these priorities and meet the economic, social, environmental, technological, cultural aspirations of the Indian people.

Purpose of the Study:

The purpose of the study is to understand overall the concept of sustainable development in the developed countries and undeveloped countries as well as in India. What are the domains of the sustainable development in India? How the various domain contributed towards the sustainable development in India. Lack of Co-ordination between various domain such, Commerce and Management, Technology, Science, environment etc. The Loss of biodiversity, energy problems and scarce resources and climate changes as well as the resulting social impact are challenges which are all closely interrelated both local and global level. Therefore, we need to adopt the sustainable development approach with commerce and management.

Objectives of the study:

1. To Understand the concept of sustainable development in India @ 75.
2. To Understand the relationship between sustainable development and Commerce and Management.
3. To Understand the various domains of sustainable development in India@75 with reference Commerce and Management.
4. To Know the impact of sustainable development in India.
5. To Know opportunities and challenges of sustainable development in India.

Hypotheses:

Human needs, however it depends mostly on the functions of ecosystem and ecosystems changing in faster manners. Sustainable Development which includes all important aspect and domain same time-economic, ecological and social one- in order to prevent the problems, we have to adopts the sustainable development approach must be guided by the sustainable principle.

Research Methodology:

For this research paper the researcher has adopted descriptive and explorative research methodology. Taking into consideration explorative research methodology the researcher has analyzed the various report of the concern literature. This research paper is based on the secondary data. The source of secondary data is published and unpublished source and official report of the concern authorities. It is assumed that the sustainable development will face many challenges and prior of that they have many opportunities in the sustainable development in India.

Limitations of the study:

This research study is limited to sustainable development various domains and its challenges and opportunities. This research study is based on secondary data which is available on the Government website and published sources that is related with

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sustainable development in India. The Study is limited to various domains of the sustainable development and its opportunities and challenges in India.

Discussion and Interpretations

Education is most crucial investment in development of country. The Development of the country depends on quality of education and Commerce and Management education is important tool for the sustainable development. If education is not provided to according to the needs of individual as well as society then country growth and development will suffer. India had observed the contemporary India is in midst of revolution. We are witnessing the revolutionary change in the Indian Economy. We are enjoying the growth and development in each and every sector. After the Post Independence era of Industrialization and agricultural growth through the sustainable development. We are enjoying and assessing the most emerging sector of the economy- Commerce and Management. Sustainable development and Commerce and Management had great significance and relation among them. It only sector has demonstrated a phenomenal increase in interest shown by Indian corporate sector.

Sustainable development is the organizing principle for meeting human development goals while at the same time sustaining the ability of natural systems to provide the natural resources and ecosystem services upon which the economy and society depend. The desired result is a state of society where living conditions and resource use continue to meet human needs without undermining the integrity and stability of the natural system. Sustainable development can be classified as development that meets the needs of the present without compromising the ability of future generations.

While the modern concept of sustainable development is derived mostly from the 1987 Brundtland Report, it is also rooted in earlier ideas about sustainable forest management and twentieth century environmental concerns. As the concept developed, it has shifted to focus more on economic development, social development and environmental protection for future generations. The modern economies are endeavoring to reconcile ambitious economic development and obligations of preserving the natural resources and ecosystem, the two are traditionally seen as of conflicting nature.

Sustainable development:

The United Nations defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Previous dialogues on sustainability have more or less focused on climate change and environmental issues, but the new paradigm of sustainability, as negotiated over the last three years for this summit includes all efforts towards an inclusive, sustainable and resilient future for people and the planet. There is a significant departure from the previous framework to now include a "harmonising" of three elements: economic growth, social inclusion and environmental protection. "Eradicating poverty in all its forms and dimensions is an indispensable requirement for sustainable development.

Various Domains of the Sustainable Development:

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The sustainable development or sustainability has been described in term of three spheres, dimensions, domains, or pillars that is environment, the economy and society. The three-sphere framework was initially proposed by the economist Rene Passet in 1979. This has been expanded by some authors to include a fourth pillar of culture, institutions or governance, or alternatively reconfigured as four domains of the environment, science, technology, social - ecology, economics, politics and culture, thus bringing economics back inside the social, and treating ecology as the intersection of the social and the natural need with sustainable development.

Impact and Need for Effective Governance in Commerce and Management Education:

Gone days are passed away when the commerce and management education was considered as a by product of Economics. Later days the commerce and management is considered as separate identity. Commerce and Management education has gradually occupied center stage of Indian Education system. While growing demand in Commerce education and the rapid increase of colleges in the current decade are good sign for the involved in this system. Commerce and Management is helping in different ways to sustainable development. Although commerce and management are helping in different ways to sustainable development but some serious challenges for us to take effective major to tackle to sustainable development in various domain such as, Education, Environment, Technology, Science, Bio-diversity, Industrialization, Economy, Cultural, Pollution, Climate Change, Atmospheric Changes and so on. It is fair enough that all of us need of the hour is to develop and frame the sustainable development strategy with the help of all domain related to growth and development.

Challenges of Sustainable Development in India:

In Modern days so many challenges have to face every country in the world. Sustainable Development become a key issue in the worldwide. Various stakeholder recognizes the sustainable development issues in different ways. There are some specific challenges to recognize through Commerce and Management.

Lack of Commerce and Management education for sustainable development In India. Lack of trained and professional educationalist in the field of commerce and management. Lack of huge requirement multidisciplinary education for sustainable development. Collaboration, networking, and co-ordination is requiring for each and every institution for sustainable development. Biological Sustainability, Biodiversity, Environment, Technology, Social, Cultural, Political, Economic and Moral and Ethical sustainable development is required in co-ordination for overall development.

The main challenges are lack of financial resources to carry out the strategic plan and policy of sustainable development. Sustainable development is not possible without modern technology, hence modern technology is significant. Hence the technology is important in the Natural occurrence Tsunami, Floods, Earthquake, can pose to threats to the sustainable development in India. It destroys the basic infrastructure and natural resources. Pollution and agriculture waste, industrial waste creating the body of water is biggest challenge for the sustainable development. The Industrialization

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create the carbon emissions of methane and other greenhouse gases by livestock and human being which contribute the global warming.

In India, one thing that has waste management is not properly adopted the governments. Due to lack of common knowledge of waste management and advance use of technology in waste management they helping to spreads the pollution and biogas and green house gases, carbon emission in the environment.

While giving permission to industrialization it needed the well thought out policies and plan for the sustainable development in India. Though the business will require the big amount of investment in the drive to low carbon economy. As we the individual people is responsible for the consumption by committing them or create awareness among the to change the lifestyle and help to maintain the sustainable development in India.

In India, another challenge is that, the instability of political system and conflicts among them. There are lack good governance and implementation of such good ensuring programme fit to the local context and nationwide requirements.

Creating value for Industry through the commerce and management education:

To remain competitive business needs human resources who are prepared to meet rapid changing demands of 21st Century work place. Now days companies are following restructured and redesign curriculum in their syllabus to cater the sustainable development needs. Its time that we give serious attention towards redesigning and reframing our curriculum. Due to lethargic attitude of our university education system, Indian companies are being forced rethink otherwise regarding skills resource. Now companies are setting up their own institutions for learning and training and conducting various activities, training program to cater the problem. Hence, it should take as opportunity to fulfil the sustainable development goals.

Opportunities in India for Various Domain of Sustainable Development:

India is playing significant role in the sustainable development in India. India is fastest developing country in the world. The Government of India is very ambitious to participate in the sustainable development goals that aim to ensure on one left behind, and everyone benefits from development efforts. The sustainable development concepts are multidimensional and interconnected and the scale of the challenges at hand is vast. There is an opportunity to achieve the sustainable development collectively by the dedicated and spontaneous leadership and conviction and courage, stuff work and required the devotion to the common goal and progress assisted with the modern technology. Sustainable development is an opportunity in rapid growth and the key weapon for India's sustainable development.

Through the rapid growth India can fight against the poverty eradication. On the other side India can create the big employment opportunities in the arena by giving them purchasing power to access the basic need such foods, clothing, shelters, education, health services and good governance. Through the sustainable development strategies, plan and policies government can reduce the bankruptcy, insolvency. Further, India can develop the basic infrastructure, roads, transport and relevant service through the

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sustainable development.

While adopting the sustainable development plan and policies and strategies India has become the fastest growing economy in the world. It grew 7.9 cent during the Year 2016-17. The growth has permitted to conduct and take action plan against the sustainable development.

Conclusion:

In the era of globalization, commerce and management, trade, industry and service sector have been moving around the sustainable development. Commerce and Management itself playing significant and crucial role in Indian economy as well as world economy. Principle of sustainable development applies to all sector domains associated with commerce and management education. The Indian economy has undergoing from the many transformations. Sustainable Development is expanding steadily in the country. Acknowledging the instant need for the sustainable development in India, the researcher, academician, scientific institutions, other research agencies to take ethical and moral responsibility to contribute in this area and nearly help to create awareness about the sustainable development in the various domains. While considering the **"global future"** we have to frame strategies adopting the sustainable development approach in the various domains for the future human survival.

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An Empirical Study on Awareness of M-banking in Maharashtra State

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Abstract:

Mobile banking is the act of making financial transactions through a mobile device such as cell phone, tablet etc. Today's Bank became a pocket bank because of the 4G remote portable innovation structure and also mobile banking service provided through bank apps and other private apps. As of January 2022, there were about 658 million internet users and about 1.2 billion mobile banking subscribers in India. In Q1 2022, customers made 15.6 billion mobile based payments whereas Net Banking. In terms of value, INR 44.68 trillion was transacted though mobile banking. So day today, Mobile banking became popular among the users.

Mine study focused on the awareness of M-banking and which factors affecting on m-banking in Maharashtra state. For justify the subject primary data was collect from Maharashtra state through online mode and secondary data of mobile banking transactions. Maharashtra state was surveyed. Main study used convenience sampling methods to reach 150 samples and data was analysis and interpreted. The finding depicts many factors like privacy, security, easy to use and awareness level increased the acceptance of e-banking services among Maharashtra state. The finding shows that, the customers are ready to use e-banking services but bank need to develop his app as far as simplest.

Keywords: Mobile Banking, Awareness, m-Banking Services

Introduction:

Mobile technology become outdate next day because of faster technologic updating and innovation. Mobile technology is going where the user goes. Therefore, Mobiles became a world wild connected device and day today update as per requirement of users. Mobile banking is a one of the most recent activities of Mobile technology. Mobile banking is the act of making financial transactions on a mobile device such as cell phone, tablet etc. Banks provided various services though M-Banking such as fund transfer form one account to another, Account balance information on a click, electronic bill payment, remote check deposits, P2P payments and other services. Today's Bank became a pocket bank due to 4G remote portable innovation structure and also mobile banking service provided through bank apps and other private apps such as PhonePe,

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Paytm, BHIM, Google Pay, WhatsApp Pay etc. Today's banks customers can connect bank from anytime and anywhere through m-banking services. In late 1990, first joint effort did a German organization Paybox and Deutsche bank for mobile banking. In decade of the 21st centuries, some developing nations began presenting Mobile banking services.

Mine study focused on the awareness of M-banking and which factors affecting on Mobile in Maharashtra. For justify the subject primary data was collect from eight district of Marathwada region through Google survey form and secondary data of mobile banking transactions.

Rationale of the study:

Bharati Motwani, Sukhjeet Matharu, Sharda Haryani el 2016, in their study "A comparative study of mobile banking services in public and private sector banks" they recommended the following things to improve the use of mobile banking.

- Training courses to be conducted
- Provide the manual to customer about information of usages of mobile banking.

Anayasi and Otubu 2009, in their study "Mobile phone technology in Banking system: its economic effect" they observe effects on economy due to mobile banking. They observe that, Mobile banking helps economic development when extension of mobile banking business to all remote areas.

Also, why Mobile banking used by customers? what is the awareness level of M-banking which factors are affected to mobile banking? etc. issues to know in this study.

Review of literature:

Sadhanas Thatte and other 2021, they studded on "Awareness, adoption and challenges of mobile banking app''. They conclude that, the transformation rate is increasing in the way of banking transactions due to the innovations and technology. Anene Ifeanyi (2021), he examines that, the level of awareness of mobile banking is increased in Nigaria. Dr. S. Rani and other (2021), they find out that, 49.8% respondents are aware of m-banking facility and only 40% respondents are used this facility.

Research Methodology:

The conducting the study and achieving objectives, analytical research mythology is used in this study.

Objectives of the study

1. To study about awareness about M-banking in Maharashtra state
2. To study about the factors affecting the mobile banking in Maharashtra
3. To give suggestions based on the study.

Sample Selections:

In Maharashtra state have 36 districts and 6 divisions. From that 12 districts were selected. On the basis of convenience sampling methods 150 respondents were selected from 12 districts of 6 divisions.

Data Collection, analysis and interpretation: This is an analytical study; hence, Primary and Secondary data was collected through online mode with the help of Google

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survey form. The primary data has collected from 150 respondents from 12 districts in 6th divisions of Maharashtra. The collected data was analyzed using Adv. Ms-Excel software and the following results were found in below.

Personal Information:

The total no of respondents was 150, out of which the men were 121 and 29 were women respondents. According to the results, most (42.40%) of the respondents were belonging to the age between 21 to 30 followed by (39.20%) respondents who were below the age of 31 to 40 years and reaming samples (18.40%) above 51 years age group. On the basis of education level, 38% respondents are graduates, 42% post graduates and 20% are professionals.

The category of income and the results indicates that 38% respondents earn of more than Rs. 5,00,001, followed by 49% of respondents in a group of Rs. 2,00,001-Rs. 4,00,000 and 13% are between Rs. 0 to Rs. 2,00,000.

B) Awareness about Mobile banking

T. 1. Do you know, can make banking transactions through Mobile?

Response	Frequency	Percent
Yes	112	74.66%
No	38	25.33%
Total	150	100%

Interpretation: the results indicate that awareness of banking transaction through Mobile is 74.66% and 25.33 % respondents are not known about it.

T. 2. Do you know, your bank provides the M-Banking App?

Response	Frequency	Percent
Yes	81	54%
No	69	46%
Total	150	100%

Interpretation: the above table indicates that 54% are aware about the bank provide M-banking app and 46% are not aware.

T. 3 Are you use any mobile banking app for banking transaction?

Response	Frequency	Percent
Yes	67	44.66
No	83	55.33
Total	150	100%

Interpretation: The result shows that 55.33% respondents are not using M-banking app and only 44.66% respondents use any mobile banking app for banking transactions.

T. 4 which types of M-banking Application you have used?

Response	Frequency	Percent
Bank app	11	14.12
PhonePe	19	28.36
PayTm	21	31.34
Google Pay	12	17.91
Other	04	05.97
Total	67	100%

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Interpretation: The results indicate that the use of M-banking application, 21% respondent used Paytm followed by 19% used Phone-Pay and only 11% users used bank app for M-banking.

T. 5 how many times do you used M-banking app for bank services per months?

Mobile Banking transaction per month	Response
01 to 10	31.34%
11 to 20	53.73%
Above 21	14.93%

Interpretation: the above table shows that, the Maximum 53.73% of respondent used M-banking app for banking services i.e. 11 to 20 time in a month followed by 31.34% used M-banking 01 to 10 times per month and only 14.93% respondents said they used above 21 time a months.

T.6 which types of banking services are you do through M-banking app?

Response	Percent
Fund transfer	52.82%
Bill payment	61.50%
Access to account information	45.75%
Other services	28.25%
All of the above	48.48%

Interpretation: the above table indicates that, 61.50% respondent used M-banking services for Bill payment followed by 52.82% used for fund transfer and 48.48% respondent used all of the bank services though M-banking app.

C) Factors affecting M-banking:

T.7 Reasons of not using M-banking App

Problems	**Response %**
Do not know how to operate	45.25
Not interested	25.75
Difficult to operate	49.66
Bad Network	12.33
Not feel Secured	46.48
Mobile Handset operating	36.25

Interpretation: the results show that, 45.25% people do not know to how to operate M-banking app. 49.66% for difficult to operate and 46.48% of the people have not feel secured about M-banking.

Conclusion & Suggestions:

The age group of M-banking services adopted is 21 to 30 & 31 to 40 years. The present study indicates that peoples are aware about M-banking services (74.66%) in Maharashtra and only 25.33% peoples are not aware about M-banking services. Apart from that 46% peoples unknown about bank provide M-banking facility. The M-banking users used other applications other than banks applications for mobile banking in that

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31.34% customers used Paytm, 28.36% used PhonePe and only 14.12% used own bank application for M-banking transactions. The people (53.73%) used M-banking maximum 11 to 20 times in a month. The people accepted M-banking because of Bill payment and fund transactions. There are various factors affected to peoples not used M-banking services. The factors are Do not know how to operate (45.25%), difficult to operate (49.66%) and not feel secured (46.48%).

The present study suggested some aspects to optimum use of M-banking services. They are:

1. The Banks must be organized tanning camp for M-banking users and make more awareness among the customers.
2. Various banks provide M-banking applications but they are not user friendly therefore banks should be developing simple and user-friendly M-banking app such as PayTm, PhonePe etc.
3. Bank should provide some discounts for banking transaction through M-banking apps.
4. The banks should be conveying to customers about use of M-banking Apps.

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