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## CRITERION- III

<b>KEY INDICATOR</b>	<b>3.3 Research Publication and Awards</b>
<b>METRIC NO.</b>	<b>3.3.2</b>

➤ Number of research papers per teachers in the

**SCREENSHOTS OF RESEARCH ARTICLES,**

S. No	Title of Paper	Screenshot of Paper
1.	Transist dark energy and thermodynamical aspects of the cosmological model in teleparallel gravity	<p><i>Pramana - J. Phys.</i> (2021) 95:19  <a href="https://doi.org/10.1007/s12043-020-02047-z">https://doi.org/10.1007/s12043-020-02047-z</a></p> <p>© Indian Academy of Sciences</p> <p></p> <p><b>Transist dark energy and thermodynamical aspects of the cosmological model in teleparallel gravity</b></p> <p>A Y SHAIKH<sup>1</sup>✉*, A S SHAIKH<sup>2</sup> and K S WANKHADE<sup>3</sup></p> <p><sup>1</sup>Department of Mathematics, Indira Gandhi Mahavidyalaya, Ralegaon 445 402, India  <sup>2</sup>Department of Mathematics, Poona College of Arts, Science and Commerce, Pune 411 001, India  <sup>3</sup>Department of Mathematics, Y.C. Science College, Mangrulpir 444 403, India  *Corresponding author. E-mail: shaikh_2324ay@yahoo.com</p> <p>MS received 11 May 2020; revised 15 September 2020; accepted 29 September 2020</p> <p><b>Abstract.</b> In this article, the perfect fluid is introduced for plane symmetric space-time in the framework of teleparallel gravity using hybrid expansion law (HEL). The behaviour of accelerating Universe is discussed by considering the depiction model of <math>f(T)</math> gravity, i.e. <math>f(T) = T^n</math>. The geometrical and physical parameters of the model are studied. An effective equation of state (EoS) has been investigated in the cosmological evolution with perfect fluid. The basic equations of thermodynamics have been deduced and the thermodynamical aspects of the model have been discussed. Thermodynamic temperature and entropy density of the model are also obtained. The statefinder parameters and jerk parameter analysis are discussed for our obtained model to distinguish our model from other dark energy models.</p> <p><b>Keywords.</b> Plane symmetric model; perfect fluid; <math>f(T)</math> gravity.</p> <p><b>PACS Nos</b> 98.80.Jk; 04.50.Kd; 04.20.Jb</p>
2.	Dynamical behaviour of HIV/AIDS model using fractional derivative with Mittag-Leffler Kernel	 <p>3.3.2 ALL RESEARCH PAPERS 2021</p> <p>File   C:\Users\Admin\Desktop\AAA%20-%20CRITERI-%203-%20ALL%20ACTIVITIES%202020-2021%20&amp;%202021-2022\3.3.2%20ALL%20RESEARCH%20PAPERS%202021</p> <p>Draw   Read aloud</p> <p>12 of 289</p> <p>ARTICLE IN PRESS</p> <p>Alexandria Engineering Journal (2021) xxx, xxx-xxx</p> <p>HOSTED BY</p> <p>Alexandria University  Alexandria Engineering Journal  www.elsevier.com/locate/aej  www.sciencedirect.com</p> <p>ELSEVIER</p> <p><b>Dynamical behaviour of HIV/AIDS model using Fractional Derivative with Mittag-Leffler Kernel</b></p> <p>Amjad Shaikh<sup>a</sup>, Kottakaran Sooppy Nisar<sup>b,*</sup>, Vikas Jadhav<sup>c</sup>, Sayed K. Elagan<sup>d</sup>, Mohammed Zakarya<sup>e,†</sup></p> <p><sup>a</sup> Department of Mathematics, AKU's Poona College of Arts, Science and Commerce, Pune, India  <sup>b</sup> Department of Mathematics, College of Arts and Sciences, Wadi Aldawasir, Prince Sultan bin Abdulaziz University, 11991, Saudi Arabia  <sup>c</sup> Department of Mathematics, Navrojeeji Wadia College, Pune, India  <sup>d</sup> Department of Mathematics and Statistics, College of Science, Taif University, P.O. Box 11099, Taif 21944, Saudi Arabia  <sup>e</sup> Department of Mathematics, College of Science, King Khalid University, P.O. Box 9004, 61413 Abha, Saudi Arabia  <sup>†</sup> Department of Mathematics, Faculty of Science, Al-Azhar University, 71524 Assiut, Egypt</p> <p>Received 15 April 2021; revised 2 August 2021; accepted 14 August 2021</p> <p><b>KEYWORDS</b>  HIV/AIDS mathematical model;  Atangana-Baleanu derivative;</p> <p><b>Abstract</b> A mathematical model describing the HIV/AIDS transmission dynamics in the existence of an aware community using fractional differential operator having Mittag-Leffler kernel is presented and investigated in this paper. By using the fixed point theorem, the existence and uniqueness conditions of the model are obtained. We have used a novel technique known as the iterative Laplace transform approach to obtain the approximate solution of the mathematical model of</p>

3. Non-singular bouncing General Relativistic Hydrodynamics cosmological models

3.3.2 ALL RESEARCH PAPERS 20 | x +

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Draw | Read aloud | 22 of 289

Astrophys Space Sci (2021) 366:71  
https://doi.org/10.1007/s10509-021-03977-9

ORIGINAL ARTICLE

**Non-singular bouncing General Relativistic Hydrodynamics cosmological models**

A.Y. Shaikh<sup>1</sup> · A.S. Shaikh<sup>2</sup> · K.S. Wankhade<sup>3</sup>

Received: 13 September 2020 / Accepted: 10 July 2021  
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**Abstract** We have studied Friedmann-Robertson-Walker (FRW) cosmological models within the presence of General Relativistic Hydrodynamics (GRH) in General Relativity. Exact solutions of the field equations are deduced by considering the special form of the average scale factor considered by Abdusattar and Prajapati (Astrophys. Space Sci. 331:657, 2011), constraining the deceleration parameter and a special form of deceleration parameter by Singh and Debnath (Int. J. Theor. Phys. 48:351, 2009). The value of the deceleration is always negative which represents an inflationary accelerating model of the universe. The cosmic jerk parameter is positive, throughout the entire life of the universe which ensures an accelerated expansion. The Phantom, Chaplygin gas, and Tachyon fields are discussed. The scalar field values of tachyon and phantom increase with time, while the scalar potential values of tachyon and phantom decrease with time.

**Keywords** FRW metric · General relativistic hydrodynamics · General relativity

as neutron stars and black holes. The production of relativistic radio jets in active galactic nuclei, explained by either hydrodynamic or electromagnetic mechanisms, involves rotating supermassive black holes. Taub (1978) introduced the concepts of general relativistic hydrodynamics. Inactive galaxies the central object is likely to be a black hole and energy is transported from the inner 10 pc out to 100 kpc or more (Begelman et al. 1984). The equations governing the dynamics of relativistic astrophysical systems are an intricate set of coupled, time-dependent partial differential equations, comprising the general relativistic hydrodynamics and magnetohydrodynamics equations (GRHD/GRMHD hereafter) and Einstein's gravitational field equations. The limitation of GRHD problems is of countless prominence to the astrophysics community. Banyuls et al. (1997) established the complete derivations of GHRD equations. Pons et al. (1998) presented the procedure to solve the GHRD equations by using any of the Special Relativistic Riemann Solvers. Font et al. (2002) explored High-Resolution Shock capturing schemes to derive

4. Analysis of Multi Term Fractional Differential Equations using Variational Iteration Method

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Punjab University Journal of Mathematics (2022), 54(1), 15-31  
https://doi.org/10.52280/pujm.2021.540102

**Analysis of Multi Term Fractional Differential Equations using Variational Iteration Method**

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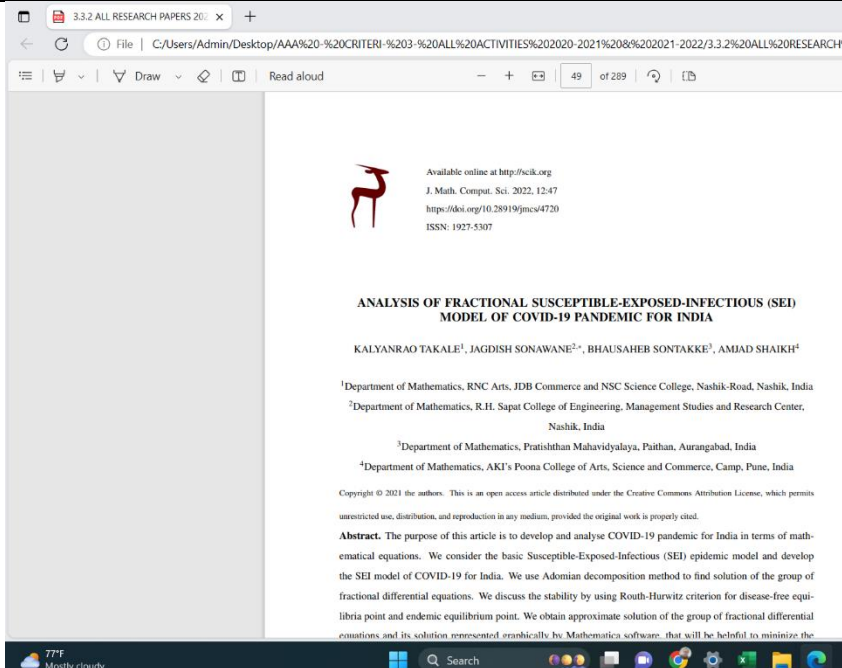
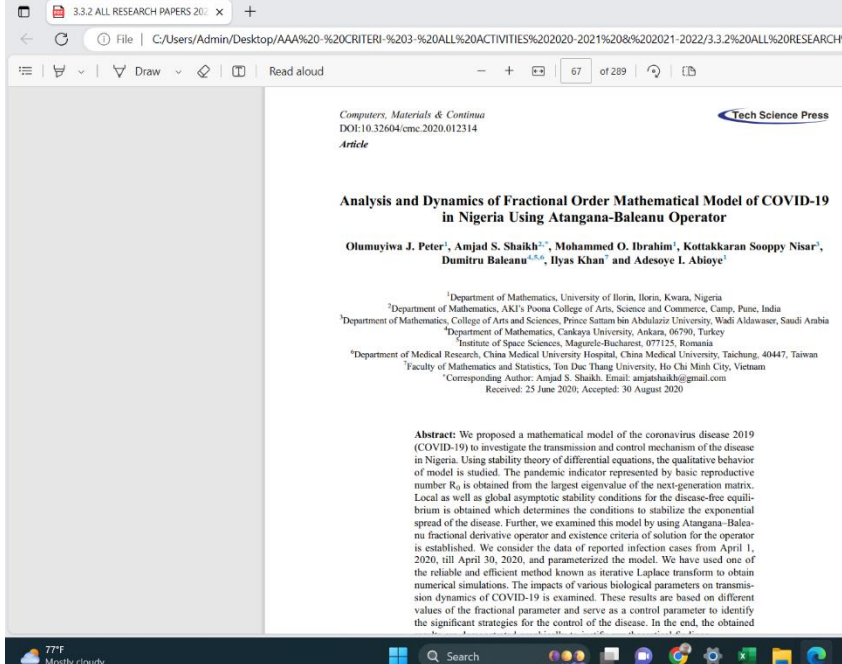
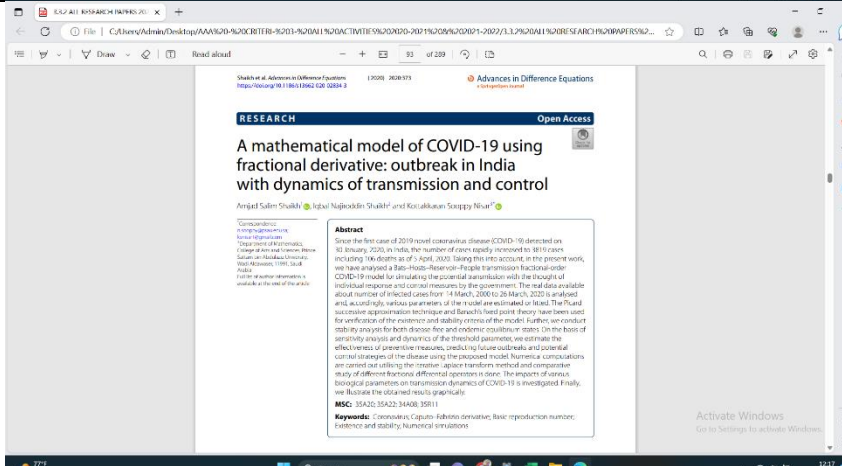
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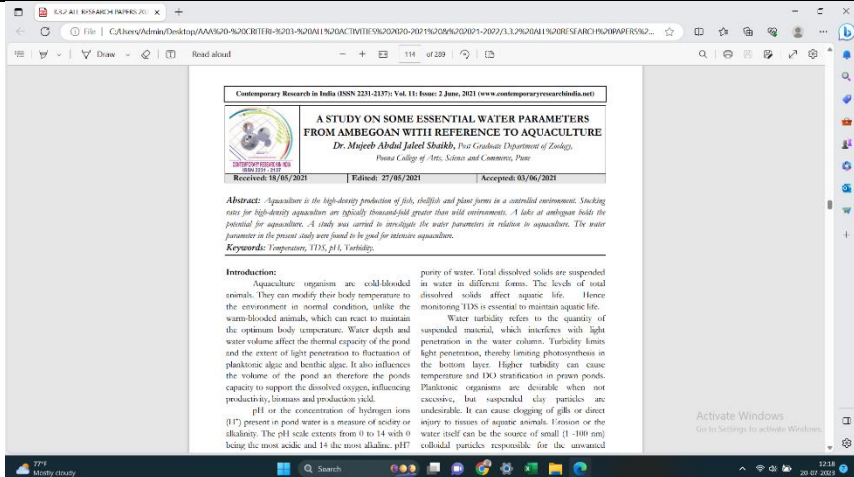
Received: 03 July, 2020 / Accepted: 03 December, 2021 / Published online: 26 January, 2022

**Abstract:** In this paper, we have obtained an approximate solution of multi-term Caputo fractional differential equations (MFDEs) using the Variational iteration method (VIM). Further, we have obtained the convergence criteria and error approximation of VIM for solving generalized multi-term fractional differential equations. The obtained results are shown using plots to demonstrated the efficiency and accuracy of the VIM.

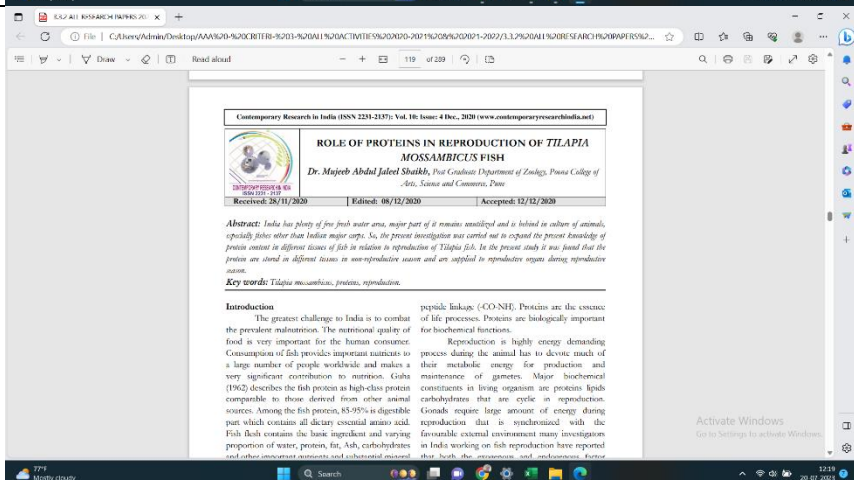
AMS (MOS) Subject Classification Codes: 35A20, 35A22, 34A08, 35R11

<p>5.</p>	<p>Analysis of Fractional Susceptible-Exposed-Infectious (SEI) Model of COVID-19 Pandemic for India</p>	
<p>6.</p>	<p>Analysis and Dynamics of Fractional order Mathematical Model of COVID-19 in Nigeria Using Atangana-Baleanu Operator</p>	
<p>7.</p>	<p>A mathematical model of COVID-19 using fractional derivative: outbreak in India with dynamics of transmission and control</p>	

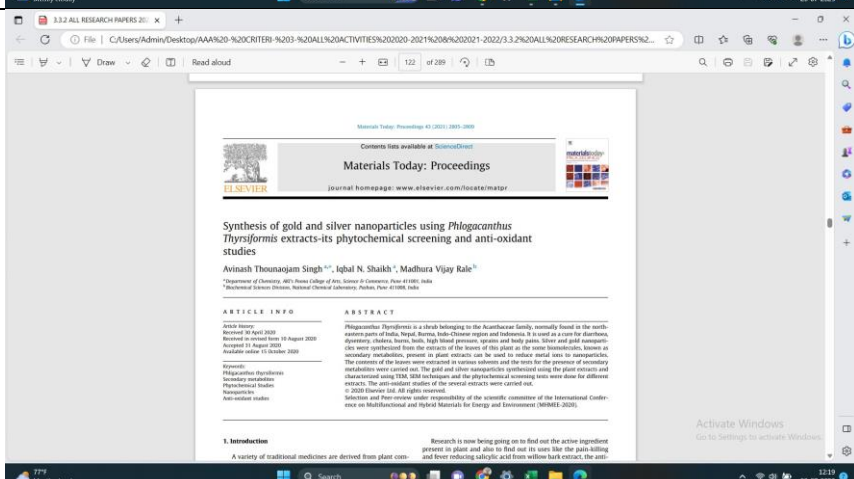
8. A Study On Some Essential Water Parameters from Ambegaon With Reference to Aquaculture



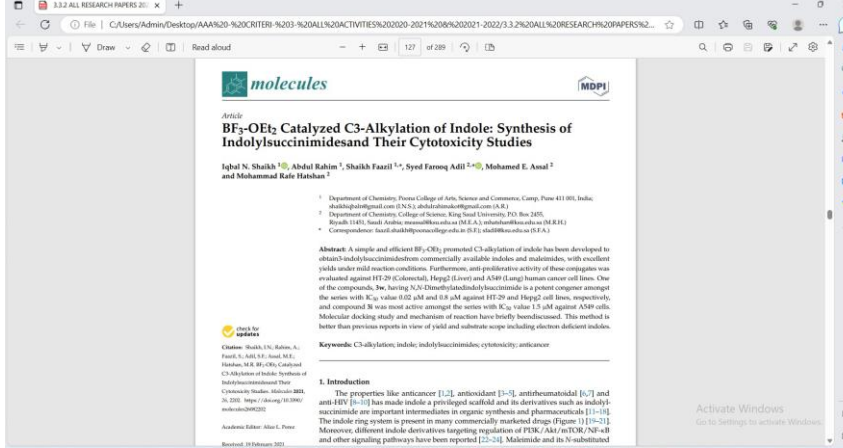
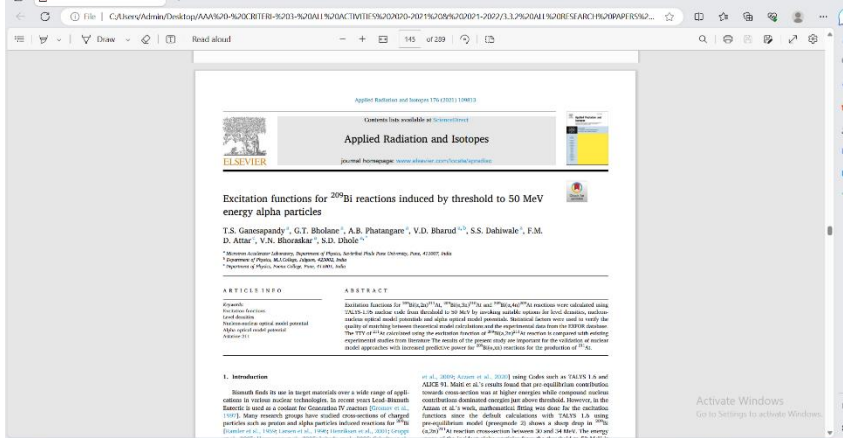
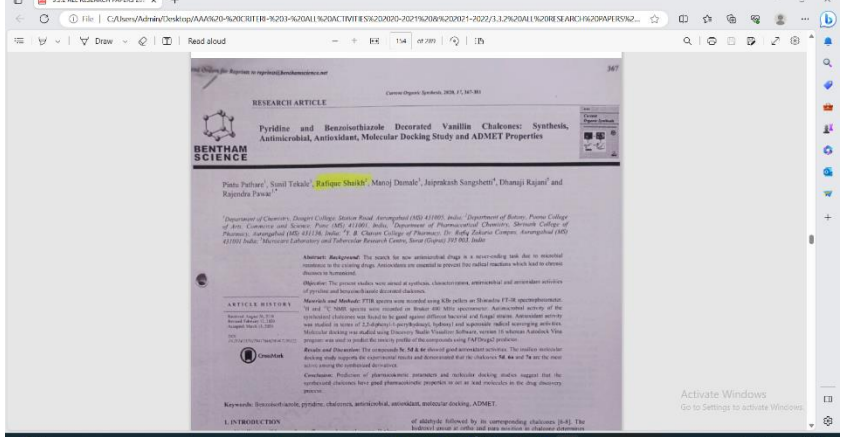
9. Role of Proteins in Reproduction of Tilapia Mossambicus Fish



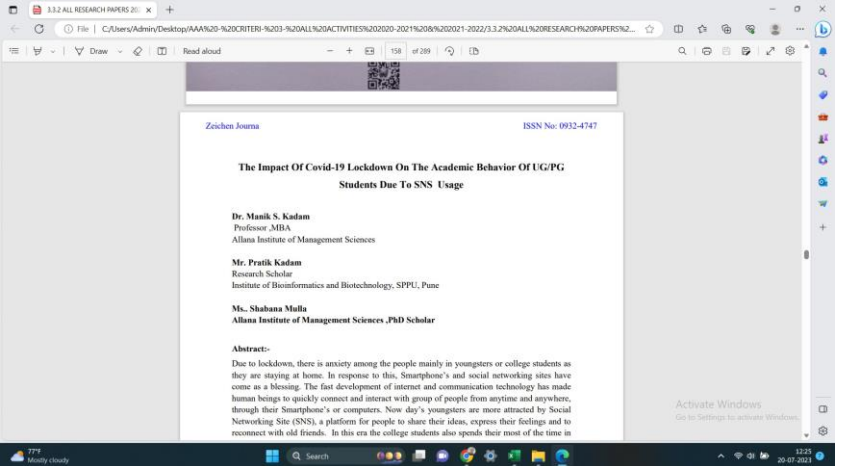
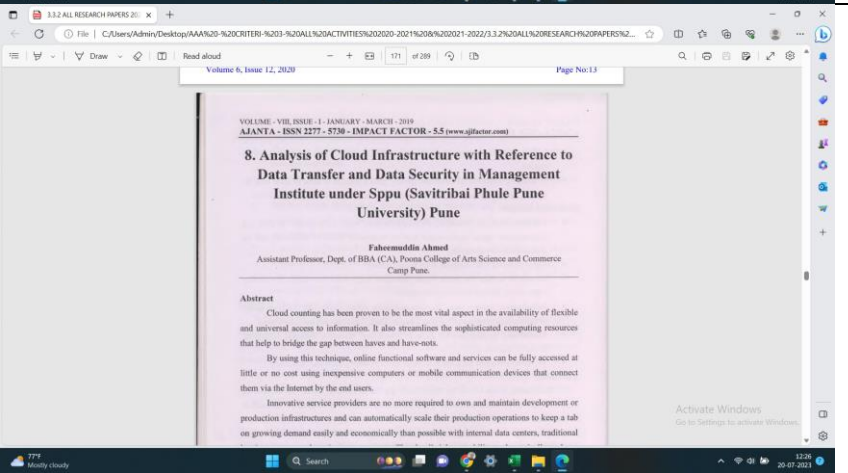
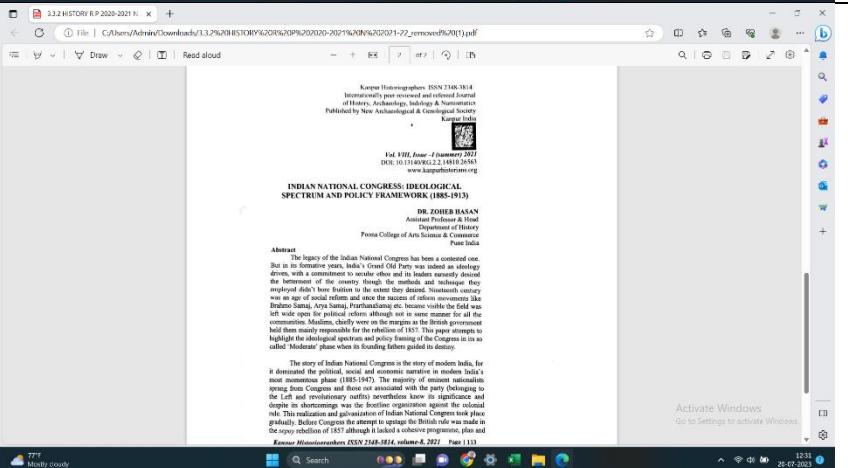
10. Synthesis of gold and silver nanoparticles using Phlogacanthus Thyrsiformis extracts-Its phytochemical screening and anti-oxidant studies.





<p>11.</p>	<p><b>BF<sub>3</sub>-OEt<sub>2</sub> Catalyzed C3-Alkylation of Indole: Synthesis of Indolylsuccinimides and Their Cytotoxicity Studies</b></p>	
<p>12.</p>	<p><b>Excitation functions for <sup>209</sup>Bi reactions induced by threshold to 50 MeV energy alpha particles</b></p>	
<p>13.</p>	<p><b>Pyridine and Benzoisothiazole Decorated Vanillin Chalcones: Synthesis, Antimicrobial, Antioxidant, Molecular docking study and ADMET Properties.</b></p>	

14.	Pyridine and benzoisothiazole based pyrazolines: synthesis, characterization, biological activity, molecular docking and ADMET study	<p>The screenshot shows the title page of a research paper. The title is "PYRIDINE AND BENZOISOTHAZOLE BASED PYRAZOLINES: SYNTHESIS, CHARACTERIZATION, BIOLOGICAL ACTIVITY, MOLECULAR DOCKING AND ADMET STUDY". The authors listed are P. G. Pathare<sup>1*</sup>, S. U. Tekale<sup>2</sup>, M. G. Damale<sup>3</sup>, J. Prakash N. Sanghetti<sup>4</sup>, R. U. Shaikh<sup>5</sup>, L. K. Katar<sup>6</sup>, and R. P. Pawar<sup>7</sup>. The paper is published in the International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS), December, Special Issue, 2021, 10(12): 386-398. The abstract mentions the synthesis, characterization, and biological activities of novel pyrazolines and phenylhydrazole containing substituted pyridine and pyrazole benzoisothiazole moieties.</p>
15.	Effect of substrate concentrations on extraction of metals from fly ash by <i>Thiobacillus ferrooxidans</i> and <i>Pseudomonas fluorescence</i>	<p>The screenshot shows the title page of a research paper. The title is "EFFECT OF SUBSTRATE CONCENTRATIONS ON EXTRACTION OF METALS FROM FLY ASH BY THIOBACILLUS FERROOXIDANS AND PSEUDOMONAS FLUORESCENCE". The authors are Shaikh Shafik<sup>1*</sup>, Iqbal Shaikh<sup>2</sup>, and Avinash Ade<sup>2</sup>. The paper is published in IJBPAS, December, Special Issue, 2021, 10(12): 386-398. The abstract discusses the effect of substrate concentrations on the extraction of metals from fly ash by <i>Thiobacillus ferrooxidans</i> and <i>Pseudomonas fluorescence</i>.</p>
16.	Effect of Temperature on extraction of metals from fly ash by <i>Thiobacillus ferrooxidans</i> and <i>Pseudomonas fluorescence</i>	<p>The screenshot shows the title page of a research paper. The title is "Effect of Temperature on Extraction of Metals from Fly Ash by <i>Thiobacillus ferrooxidans</i> and <i>Pseudomonas fluorescens</i>". The authors are Shaikh Shafik<sup>1*</sup>, Iqbal Shaikh<sup>2</sup>, and Avinash Ade<sup>2</sup>. The paper is published in the Indian Journal of Natural Sciences, Vol.12 / Issue 66 / June / 2021. The abstract discusses the effect of temperature on the extraction of metals from fly ash by <i>Thiobacillus ferrooxidans</i> and <i>Pseudomonas fluorescens</i>.</p>

<p>17.</p>	<p>The Impact Of Covid-19 Lockdown On The Academic Behavior Of UG/PG Students Due To SNS Usage</p>	 <p>The screenshot shows a PDF document titled "The Impact Of Covid-19 Lockdown On The Academic Behavior Of UG/PG Students Due To SNS Usage". The authors listed are Dr. Manik S. Kadam (Professor, MBA, Alhambra Institute of Management Sciences), Mr. Pratik Kadam (Research Scholar, Institute of Bioinformatics and Biotechnology, SPPU, Pune), and Ms. Shabana Mulla (Alhambra Institute of Management Sciences, PhD Scholar). The abstract discusses the impact of lockdown on students' academic behavior due to increased SNS usage.</p>
<p>18.</p>	<p>Analysis of Cloud Infrastructure with Reference to Data Transfer and Data Security in Management Institute Under SSPU</p>	 <p>The screenshot shows a PDF document titled "8. Analysis of Cloud Infrastructure with Reference to Data Transfer and Data Security in Management Institute under Sppu (Savitribai Phule Pune University) Pune" by Fahemuddin Ahmed, Assistant Professor at Puna College of Arts Science and Commerce. The abstract discusses cloud computing's role in data security and management.</p>
<p>19.</p>	<p>Indian National Congress: Ideological Spectrum and Policy Framework (1885-1913)</p>	 <p>The screenshot shows a PDF document titled "INDIAN NATIONAL CONGRESS: IDEOLOGICAL SPECTRUM AND POLICY FRAMEWORK (1885-1913)" by Dr. Zohier Hasan, Assistant Professor at Puna College of Arts Science &amp; Commerce. The abstract discusses the ideological spectrum and policy framework of the Indian National Congress during its early years.</p>



20. Crimes Against Women in India: A Legal Perspective

*Eshwarani International Interdisciplinary Research Journal* ISSN: 2319-4979

**CRIMES AGAINST WOMEN IN INDIA: A LEGAL PERSPECTIVE**

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**ABSTRACT**

India is a country of incredible crimes. It is a land where people worship myriad forms of female Shakti in quest of wealth, violence and power. In this country it is a common sight to see thousands of couples making ardhna puja every year in devotion of goddesses in order to be blessed with a child. But strength enough, in this country, a couple is said to be blessed only when it has a male child, for a girl is never considered a blessing in our society. Her birth seems to cast a pall of gloom over the entire family. After birth is over, instead of the entire family women, women, a girl, a wife, a mother, a grandmother, overall women is a key of a family. World can never be complete without a woman. Law is the set of rules enforced to govern the behaviour of people. From the beginning of this world women is treated as a weaker section of the society and they are the victims of the crimes like rape, eve teasing, female infanticide, dowry, domestic violence, child marriage and acid attacks. They were only allowed to live through the shoes of their husbands and fathers. Laws are being made to secure the lives of the women from the violence of their families and societies, and to provide them with their rights of which they are the owners.

**Keywords:** Women, Crimes, Gender, Human Rights, Violence

**Introduction**

There has been sharp surge of growing violence against women and girl child worldwide which are in defiance with the human rights. Women and girls are subjected to different forms of abuse, be it emotional, physical, or sexual, because of their gender. This affects their sense of security, health, dignity, and autonomy. Gender-based violence

matter of shame that Indian women are not only considered infra-human but have to face violence constantly. As a matter of fact, barring a few legally recognized crimes against women, such as dowry and sati, most of the atrocities against them are not counted as crimes even. Globally crimes against women have been increasing. It is quite likely that the actual figure is quite higher because women hesitate from getting their complaints recorded

21. The Public Distribution (PDS) and Food Security in India: Special Food Security in India

*Eshwarani International Interdisciplinary Research Journal* ISSN: 2319-4979

**THE PUBLIC DISTRIBUTION SYSTEM (PDS) AND FOOD SECURITY IN INDIA: SPECIAL REFERENCE TO COVID 19**

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ashamshad2002@gmail.com

**ABSTRACT**

India's Public Distribution System (PDS) is considered one of the earliest distribution networks in the world. It came into prominence as a rationing measure during World War II. Import of food grains was the important factor of distribution through PDS before 1960s. Due to the scarcity of food, it accelerated its activities in the 1960s. Later, the Food Corporation of India and Agriculture Prices Commission was instituted to better food procurement and distribution of food grains for Public Distribution System. PDS had become into a more advanced global scheme for the disposal of government bonded food by the end of 1970s. This scheme was improved upon for the better access to the common masses having from mountains and remote regions particularly targeting less privileged section in the society. Keeping this in account, government initiated the Targeted Public Distribution System i.e., TPDS in 1997, with a focus on needy people. The work of TPDS is centered on supplying the individual food grains such as wheat and rice via far-reaching network of ration shops. Such processed food grains from farmers are delivered to the ration shops under TPDS for the proper distribution of this entitlement to the beneficiaries. It is the duty of centre and state to identify the poor, procure grains and get it delivered to the beneficiaries. The National Food Security Act (NFSA) 2013 was passed in the parliament in September 2013. This act focuses on the existing TPDS to deliver the food to the needy households making it their justifiable and legal right. Food Security and Public Distribution System (PDS) work independently. Food Security stands for affordability, accessibility and availability of unprocessed food supply to all the people. The problem of production and distribution of food is determined to the poor households that are affected and insecure. In these types of cases, the responsibility of food security is dependent on the proper scrutiny surveillance of government and the Public Distribution System (PDS). To put the Ration Distribution on World Food Security at the World Food Summit which was held in 1996. Food security exists when all people have legal access to sufficient and nourishing food to fulfil their dietary requirements and food preferences for healthy life.

**Keywords:** Public Distribution System, National Food Safety Act, Rationing, Food Security

**Introduction**

British introduced Public Distribution of grains through "rationing" system in India during the to the economically backward classes of society at affordable rates. It is binding on the Centre and State Government to inspect and regulate the Public Distribution System. Activities, like

22. The Role of International Organisations in World Politics

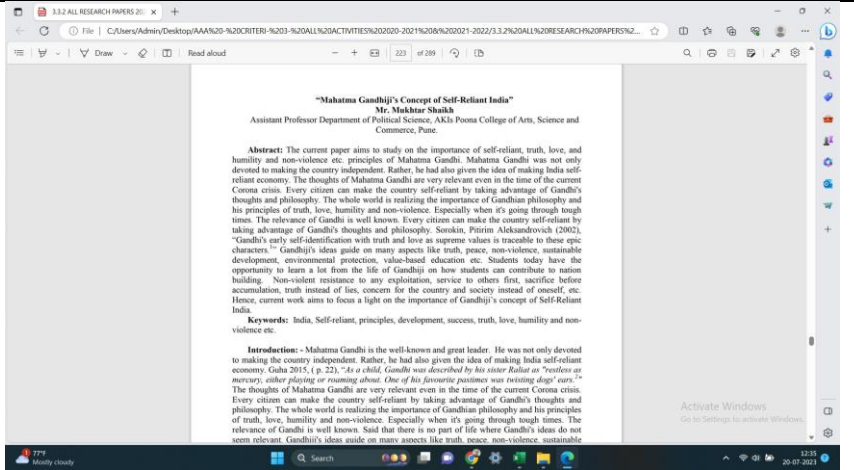
Regretin Online - Elementary Education Online, 2020, Vol 19 (Issue 4): pp. 7420-7430  
http://regretin-online.org  
doi: 10.17051/online.2020.04.7420-7430

**"The Role Of International Organisations In World Politics"**

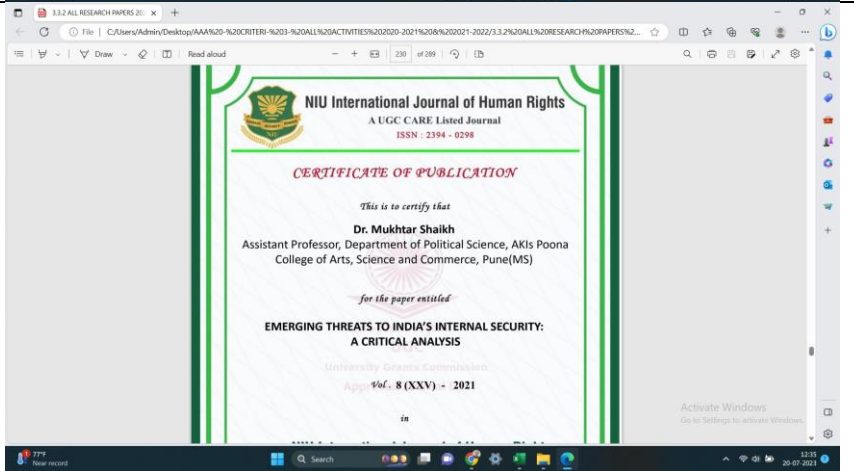
Mr. Mukhtar Shaikh Assistant Professor Department of Political Science, AK'S Pooa College of Arts, Science and Commerce, Pune

**Abstract:** Regional organizations (ROs) are international organizations (IOs). They incorporate international membership which includes geopolitical entities that actively transcend a nation state. Unique geography such as continents, or geopolitics, borders and demarcations for economic blocs define the membership of Regional organizations (ROs) are international organizations (IOs). Spandler, Kilian (2018) stated about the regional organization and international organizations stated about the membership of it as, "They both reflect common patterns of development and history that have been fostered since the end of World War II as well as the fragmentation inherent in globalization, which is why their institutional characteristics vary from loose cooperation to formal regional integration." They are established to promote cooperation and political and economic integration or communication between states or entities within restricted geographical or geopolitical boundaries. They both reflect general patterns of development and history that have been promoted since the end of World War II as well as the fragmentation inherent in globalization, which is why their institutional characteristics vary from loose cooperation to formal regional integration. Most ROs work with well-established multilateral organizations such as the United Nations. While in many instances a regional organization is referred to simply as an international organization, in many others it makes sense to use

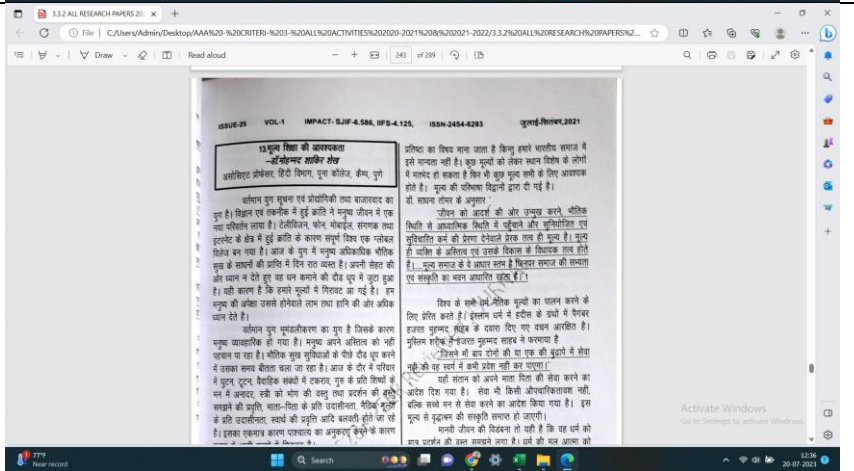
23. Mahatma Gandhi's Concept of Self-Reliant India



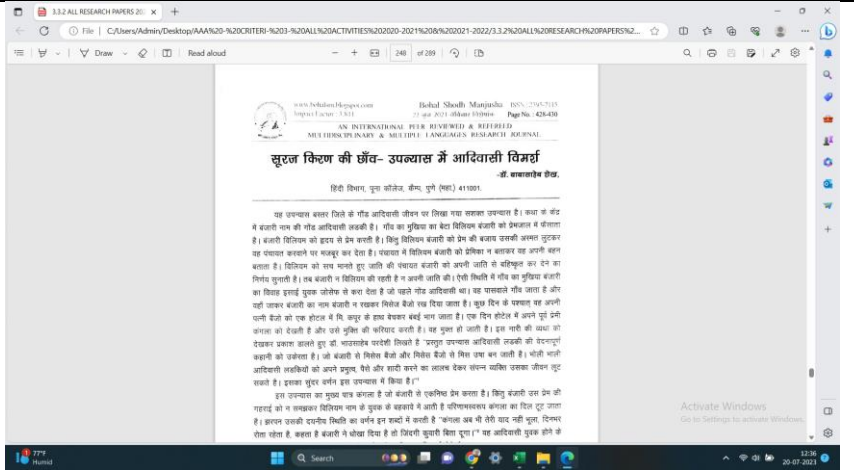
24. Emerging Threats to India's Internal Security : A Critical Analysis



25. Mulya shiksha ki Aawashyakta



26. Suraj Kiran ki Chhaon: Upanyas mein Aadivasi Vimarsh




27. Mirza Daagh: Shaqsiyat aur Shaayeri



28. [Blank]



<p>28.</p>	<p>Niaz Jairajpuri Ki Nazmon Mein...</p>	
<p>29.</p>	<p>An Analysis of Performance of Maternal and Child Healthcare Variables in India</p>	<p>P: ISSN No. 0976-8602 RNI No. UPENG/2012/42622 VOL.-10, ISSUE-1, January 2021  E: ISSN No. 2349-9443</p> <p style="text-align: center;"><b>Asian Resonance</b></p> <p style="text-align: center;"><b>An Analysis of Performance of Maternal and Child Healthcare Variables in India</b></p> <p style="text-align: center;">Paper Submission: 02/01/2021, Date of Acceptance: 20/01/2021, Date of Publication: 25/01/2021</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p><b>C.S. Verma</b> Associate Professor, Dept. of Economics, Giri Institute of Development Studies, Lucknow, UP, India</p> </div> <div style="width: 50%; border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>Abstract</b></p> <p>Since maternal and child health plays very crucial role in the development process of a nation, performance of healthcare variables has its own importance. The present study attempt to analyse the performance of maternal and child health variables in India by using secondary data in order to present it through an empirical evidence. We have employed the T-test to investigate the performance of health care variables in selected Indian states. The annual data of major 15 states on MCH variables is analysed. Selected states have been divided into 2 groups on the basis of IMR. The main findings of this study show the performance of healthcare indicators is poor in the states where IMR is more than 40 because of lack of awareness, traditional healthcare practices, low level of education among women, and poor living standard. The study recommends that government should focus on the healthcare sector to improve the performance of healthcare variables.</p> <p><b>Keywords:</b> Maternal Healthcare, Child Healthcare, Performance, Healthcare Variables, T-test, India</p> <p><b>Introduction</b></p> <p>India is lower middle income country with a huge burden of population and poverty. India is growing tremendously since the last two decades and has had an average growth rate of 7 percent. In spite of such economic growth, it seems that the maternal and child mortality remains very high in the country (Economic Survey of India, 2017). Standard of maternal and child health in India is very low as compared to some of our neighboring countries like Bangladesh and Nepal. As per to the WHO, Under 5 mortality rate in India, Nepal and Bangladesh is 52.7, 41.1 and 39.7 respectively. India has 35 states each of which has its own government and there is a huge inter-state diversity on the basis of economic and political ground. India failed to achieve its MDG's relating to maternal and child health. Thus this study tries to examine the performance of maternal and child health care variables in India.</p> <p>The burden of disease in some developing countries, stands as a barrier to economic development and therefore must be addressed</p> </div> </div>



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healthcare sector to improve the performance of healthcare variables.  
**Keywords:** Maternal Healthcare, Child Healthcare, Performance,  
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**Introduction**

India is lower middle income country with a huge burden of population and poverty. India is growing tremendously since the last two decades and has had an average growth rate of 7 percent. In spite of such economic growth, it seems that the maternal and child mortality remains very high in the country (Economic Survey of India, 2017). Standard of maternal and child health in India is very low as compared to some of our neighboring countries like Bangladesh and Nepal. As per to the WHO, Under 5 mortality rate in India, Nepal and Bangladesh is 52.7, 41.1 and 39.7 respectively. India has 35 states each of which has its own government and there is a huge inter-state diversity on the basis of economic and political ground. India failed to achieve its MDG's relating to maternal and child health. Thus this study tries to examine the performance of maternal and child health care variables in India.

The burden of disease in some developing countries, stands as a barrier to economic development and therefore must be addressed effectively in a development strategy (WHO, Commission on Macroeconomics and Health, Sachs, 2001). Good health, especially women and child health contributes to the production of productive services because the better the state of health, the more time available for income generating activities. So, health care of every individual especially for women and child is very important for the overall economic development of a nation. According to Amartya Sen (2014), health care is not something that is supported by economic growth but it is something that supports economic growth. Health care means not only medical care but also all other pro preventive care aspect too. The report by the High Level Group on the Lisbon Strategy for Growth and Employment (2004) states that health and health care play a major role in generating productive workforce, employment, social cohesion and hence economic growth. Out-of-pocket expenditure is very low in India as compared to developed and some developing countries and it dominates the cost of financing health care. Health care can be improved by implementing good health care policies, good political economy, and reduction in poverty, increasing employment, good public information and communication system.

Maternal and child health forms a very crucial element of the health status of a country. In general, developing countries have a poor maternal and child health status and India is no exception to this trend, as is revealed from various government reports that not only maternal health