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Principal
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Anita Tomar
M. C. Joshi
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Mathematics Research Developments

Fixed Point Theory and its Applications to Real World Problems

NOVA

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Chapter 1

DYNAMICAL BEHAVIOR OF GENERALIZED LOGISTIC MAPS USING SUPERIOR FIXED-POINT FEEDBACK SYSTEM

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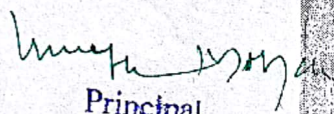
Abstract

In the last few decades, the logistic map and its variants have been used to deal with the dynamical behavior of some real-world problems such as weather forecasting, population-growth model, cryptography, etc. This chapter deals with the dynamical behavior of the generalized logistic maps using a superior fixed-point feedback procedure. The generic properties such as fixed-point, period-doubling, period-3 window, and Lyapunov exponents are studied using analytical as well as numerical techniques. Further, due to the presence of an extra degree of freedom of the parameters m and α , the dynamical system shows global stability behavior. Surprisingly, it is amazing to see that the added new parameters may increase the stability performance in various irregular dynamical systems.

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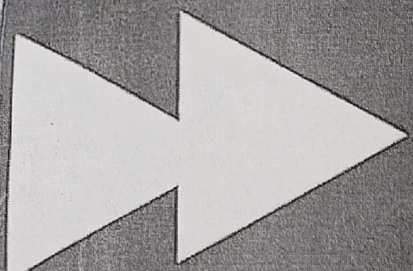
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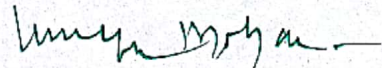
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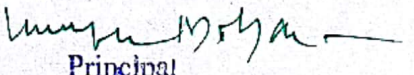
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Mulk Raj Anand as a Novelist: A Critical Study

Jarnail Singh*

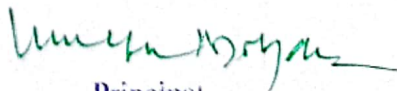
".....Man is both the subject and object of his culture. He is both the builder as well as the building. His name is synonymous with culture."

Mulk Raj Anand

Mulk Raj Anand and R.K. Narayan are founding fathers of Indian English Fiction. Anand's *Untouchable* and *Coolie*, Narayan's *Swami and Friends* and *The Bachelor of Arts* and Raja Rao's *Kanthapura* mark the beginning of Indian English fiction. Nissim Ezekiel, Jayanta Mahapatra, Shiv K. Kumar, A.K. Ramanujan, R. Parthasarathy, Keki N. Daruwalla are main poet in Indian English literature. Amitav Ghosh, Shashi Deshpande, Arundhati Roy, Manju Kapoor are the novelists in Indian English Literature. Salam Rushdie's *Midnight's Children* Booker Prize winner in 1981 is a path breaking novel. Anand, Narayan and Raja Rao are there pillars of Indian English Literature. Critics like Alstair Niven, K.R.S Iyengar, C.D. Narasimhaiah and M.K. Naik have evaluated the works of Anand, Narayan and Rao.

If Anand is the novelist as a reformer, Raja Rao is the novelist as metaphysics poet, Narayan is simply the novelist as novelist, says William Walsh. Walsh calls R.K. Narayana 'The novelist as moral analyst'. C.D. Narasimhaiah says, "Where distinctions are made they fall into neat categories of Anand the Maxist, Progressive or committed writer; Narayan the comic genius or writer pure and simple; and Raja

*Assistant Professor in English, Government College, Satnali, Mahendargarh



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Cow action reached to the climax on the last page fan event narrative. Anand has used the stream of consciousness technique in *Untouchable* and *The Big Heart*. Anand is a novelist with a mission. The Structure of his novel is a fusion of western realistic tradition with the Indian tradition of the moral fable. The English, Anand uses in the narrative is correct and idiomatic Anand has compassion for the coolies and workers. His concern for the underdog of society is reflected in all his novels.

In Short Anand is a novelist with mission. Premila Paul remarks: The novel, indeed presents Anand's attempt at distilling a social metaphor which takes in its sweep a whole range of postulates of Hindu culture. The research study proves that Mulk Raj Anand has humanistic and realistic approach in his creative novels and short stories.

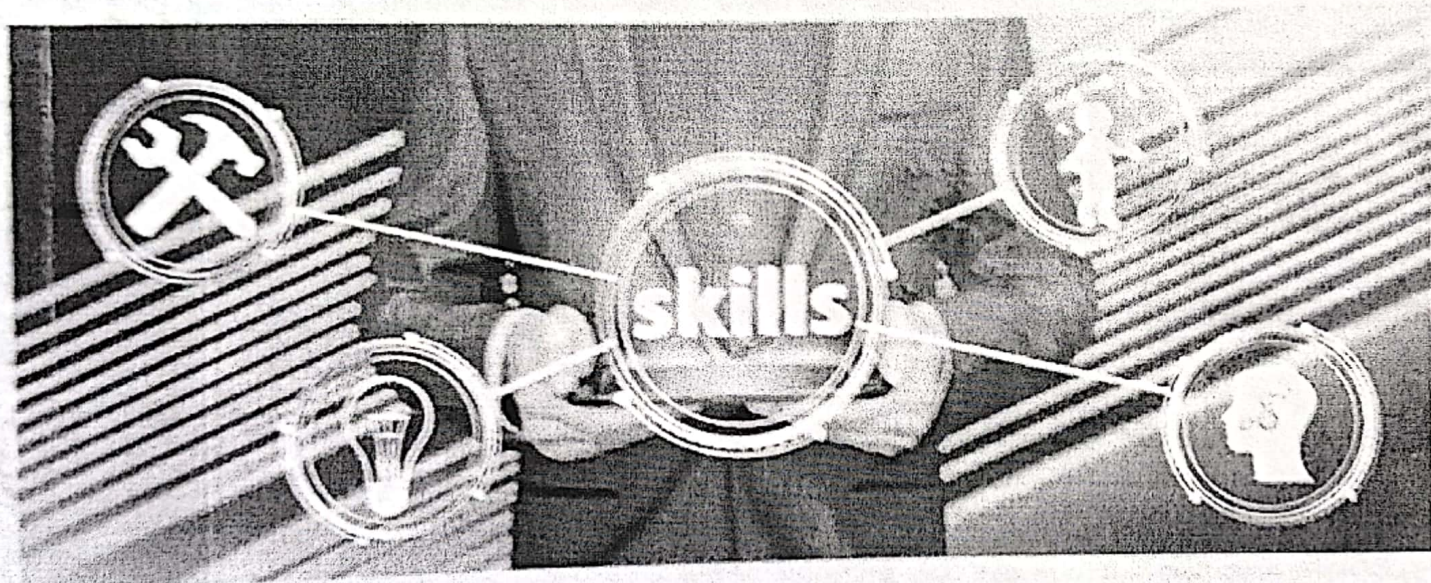
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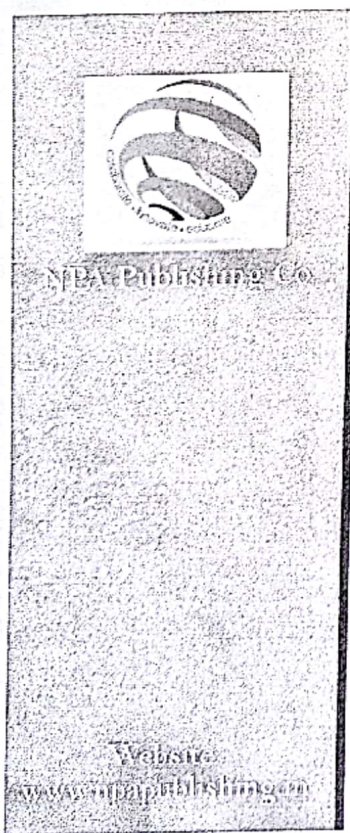
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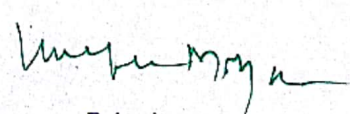
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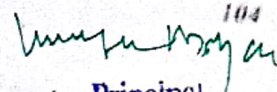


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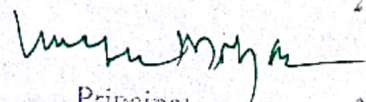

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EMPLOYMENT OPPORTUNITIES AND CHALLENGES FOR WOMEN IN INDIA

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Abstract

Today is the age of fast moving technology and as well as rapidly growing economies like INDIA. But these economies are growing not just by the contribution of the men but women also. Recent from the past two decades, the role of women is increasing in the development of a nation. Especially in the south Asia, the role of women has been increasing swiftly. They are participating in every field i.e. defense, entrepreneur, small medium enterprises, and all other fields where earlier men were only supposed to work. Women are now managing both their house duties as well as working/earning duty effectively. But this two sided responsibilities are creating burden on her mind as well as on health also. Women need support for their effectively completion of their duties. Women are treated unequal in the form of work, salary, working conditions, skills etc. Nowadays, we are observing that more and more women are getting high education, but ultimately education does not necessary lead to employment. So the objective of this paper to discuss the opportunities and challenges exists in the economy and to suggest some points on its improvement.

Keywords: Entrepreneurship, woman, economy, economic development, challenges, economic growth, opportunities of women entrepreneurship.

1. Introduction

In the history of human development, women have been playing a vital role in the history making as such men. Without women empowerment, the social, political or economical can't be developed. They are not taken seriously by their superiors, colleagues or society at large. Women face challenges in her career due to their family responsibilities. Traditionally, Indian women were only house wife but now she is choosing careers also by proper education and better awareness. Now Indian women have started doing their jobs outside their home and bringing a positive change in the mindset of the people.

According to **Government of India**—"An enterprise owned and controlled by a women having a minimum financial interest of 51 per cent of the capital and giving at least 51 per cent of the employment generated by the enterprise to women."

According to **APJ Abdul Kalam** "Empowering women is a prerequisite for creating a good nation, when women are empowered, society with stability is assured. Empowerment of women is essential as their thoughts and their value systems lead to the development of a good family, good society and ultimately a good nation."

Now Indian women have a lot of opportunities for making their careers and to make a contribution in family living, socially, politically and economically. But still Indian women are facing a lot of challenges in their jobs.

2. Review of Literature

H. Subrahmanyam(2011) makes a comparison women education in India at present and Past. The stud highlighted that there has a good progress in overall enrolment of girl students in schools. Empower means to give lawful power or authority to act. It is the process of acquiring some activities of women.

M. Bhavani Sankara Rao(2011) has highlighted that health of women members of SHG have certainly taken a turn to better. It clearly shows that beath of women members discuss among themselves about health related problems of

Along with it, awareness should be spread that women is not meant for housewife purpose only. Women should be supported by their family, and through this support, they can work effectively and efficiently also. Nowadays women are working more efficiently than men and participating in every field but access to these fields is very poor in rural area specially. So government should take initiative steps to make it accessible to rural women also, so that they can also contribute to growth and development of the society.

For the women who want to start a business of their own n facev finance problem for their business then government should open a platform where such women can get easily finance facilities and other facilities for their business also such as easily registration, tax rebate, new machinery at low cost, subsidies, etc. should be provided.

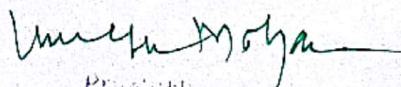
Conclusion

Women in INDIA are facing a lot of challenges and it requires some strong steps to be taken for changing in the attitude and mindset of the society. Therefore, programs and campaign should be designed in such manner. Working conditions improvement, basic facilities to women like sanitary napkins and leave during menstruation, special arrangements during pregnancy etc. should be provided by the employers/organizations where women are working.

Education is also a big supportive tool which helps in knowledge skills and confidence among human being. So along with basic education, higher education should be promoted for women even in rural areas too. Moreover, efforts and attempts should be made at all levels to inspire, assist and motivate the women. Vocational courses should be started where they can get experience and confident and can enhance their decision making skills so that they can easily cop up with the continuous changes in the environment. There is no doubt that women role is improving from the past 3-4 decades, but still there is need of more efforts at large scale is to be done. So that, more women participation can be achieved in the development and growth of the economy of a nation. Financial facilities like loan and tax rebate should be provided to women entrepreneur so that they can easily start their venture without lack of finance. Thus effective steps are needed to be taken for the development of women as well as growth of the nation.

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OUT-TURN IN ADOPTING CASHLESS MECHANISM

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Abstract

Today is the era of digitalization. Every work which needs physical presence for doing a work is just one click away. Now, we just need smartphone/ laptop and an internet connection and just our work is done. This all is possible due to only with the digitalization. And this same pattern is now applying in the digital payment and our economy has moved towards the cashless economy. But while adopting this technology, our Indian economy has got some advantages and challenges. Thus, some suggestions are also mentioned to smoothing adoption of this cashless economy scenario.

Keywords: cashless economy, RTGS, NEFT, etc.

INTRODUCTION

In earlier times, it was barter system that prevails. But there were few limitations of that system. It required two parties that were agree to sell and buy at the same time. Then gold exchange system came by solving the problem of the barter system. As now, with exchanging the gold, one can buy anything and in any quantity without looking for the party as in case of barter system. But gold exchange system again had its limitation of scarcity. We have limited gold on this earth. Thus, that scarcity became reason of ending the gold exchange system. During the World War I and World War II, a huge scarcity of gold was felt. Thus it resulted into evolution of fixed exchange rate system. In this system, one country can exchange its currency into other currency in a fixed ratio. But it is needed that one currency should be dominating, for which this ratio can be determined. And to make the supply of that dominating currency constant, it was backed by gold. But this system again got failed because the supply of dominating currency was increasing and would not remained back by gold and hence, whole system breaks. Finally, a new decision was taken to let fluctuate the currencies based on the market forces.

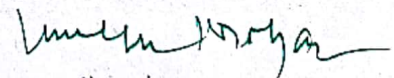
But nowadays, in the era of technology and new innovations, developed nations are going for the cashless economy. More the developed nations, more cashless they are. India is now has taken various steps for doing its economy cashless. In this system, all the transactions are done through the electronic means like direct debit, credit and debit cards, electronic clearing, and payment systems such as Immediate Payment Service (IMPS), National Electronic Funds Transfer (NEFT) and Real Time Gross Settlement (RTGS). And it will result into the reduction of the cash withdrawal from ATM and banks also. It will also help in stopping of black marketing and increase in tax collection to the government. Thus, cashless system in the economy is good and also facing my challenges while adapting in India.

OBJECTIVES OF THE STUDY

- Studying the concept of cashless economy
- To study the advantages of adopting cashless system in India
- To study the challenges faced by India while adopting cashless mechanism

METHODOLOGY

The present is mainly based on secondary data which is available in the papers, articles, journals and internet etc.



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6. **Costly Swipe Machine:** Since swipe card machine are costly and not provided at subsidy rate hence it can only be used by the wealthy shopkeepers because it may not be possible to have swipe machine by small shopkeepers, auto driver or a normal vendor.

SUGGESTIONS

There are few suggestions through which Indian economy can avoid those above challenges are

- Learn from other cashless economies
- Financial security should be there
- Focus on enhancing more online transactions
- More implementation of the idea of Digital India
- Financial Inclusion as well should be increased.

CONCLUSION

India is gradually changing from an economy based on cash to cashless economy. Now, there is a huge need for India to move towards a cashless economy to save huge money which is used on the printing and maintenance of currency. It may help the Indian government not only to achieve the objective of inclusive growth but also to make public utilities more effective. Cashless economy is based on digital transactions which are easily traceable and taxable and does not leave any option for circulation of black money. The cashless transaction system is reaching its growth day by day because it is not only safer than cash transaction but also it is less time consuming and avoid the trouble of wear and tear like paper notes. Although it is difficult to implement the idea of cashless Indian economy due to literacy, education, misery and poverty of a large no of Indians yet there is a great change in the mindset of Indian people with regards to digital means of monetary dealing due to being easy, convenient, transparent and safe. Now we may say that India must go for less cash economy instead of cashless economy because a continuous movement towards less cash economy will certainly lead to India towards cashless economy.

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Uma Maheshwar

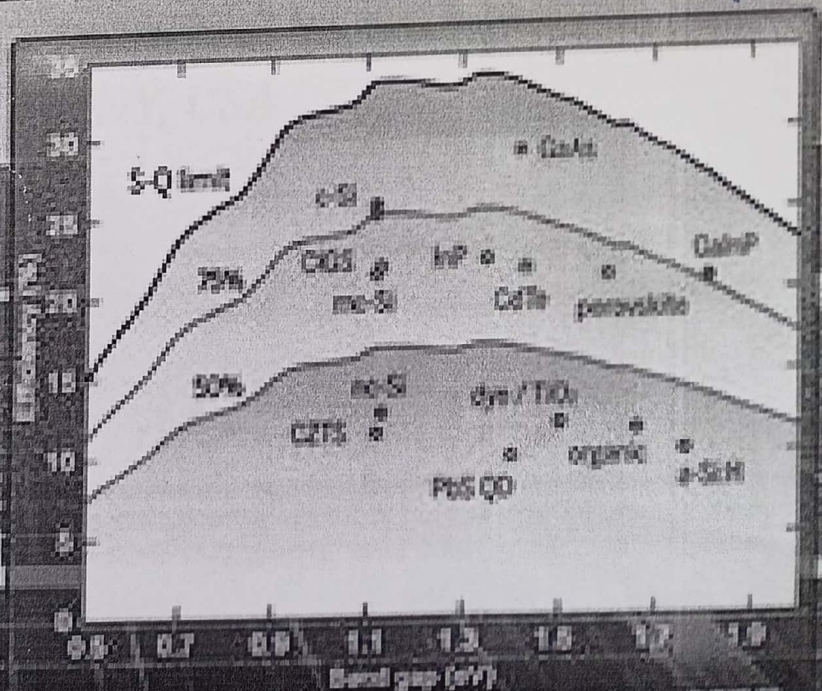
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EMERGING PHOTOVOLTAIC MATERIALS

Silicon & Beyond

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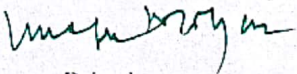
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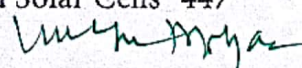
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Recent Developments in Dye-Sensitized Solar Cells and Potential Applications

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Department of Chemistry, Maharshi Dayanand University, Haryana, India

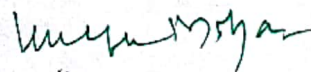
Abstract

The massive amount of electric energy is required in the daily uses to maintain the living standard of human which increases the exhaustion of the fossil fuels i.e., Coal, petroleum, etc. Due to this inescapable energy demand for renewable resources, that is, photovoltaic technologies turn its research interest to design proficient solar cells to produce electrical energy. Solar cells gradually gained attention because of its cost-effectiveness, no transmission losses, and the capacity to produce energy near the end user. Even though different photovoltaic cell has been effectively performed in the research laboratories but due to their high cost of manufacturing and toxic effect of the applied chemicals for the environment are the hurdles on large scale production of electric energy. Several types of frameworks and substances were employed to substitute Si-based and other thin-film technologies for solar cells, in which the dye-sensitized solar cell (DSSC) grown by Grätzel continues to be one of the most proficient "next-generation" technology. Generally, DSSCs are made up of metal oxide semiconductors having a wide bandgap deposited on a conducting transparent substrate, a molecular sensitizer (usually a dye), and redox couple as electrolyte. The most important part of dye-sensitized solar cells is the mesoporous metal oxide semiconductor layers that are made up of nanoparticles and monolayers of dye as molecular sensitizers that are attached to the surface of the semiconductor. The dye as molecular sensitizers plays a significant function in dye-sensitized solar cells, which has a major influence on the generation of photoelectric energy. DSSCs are lightweight, ultrathin, solar cell technology that can be used in backpacks and bags and are ideal for clothing and portable electronic device applications.

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Recent Advances in Fixed Point Theory and Applications

Dedicated to the diamond jubilee
birth anniversary of Shyam Lal Singh

Umesh C. Gairola • Rajendra Pant
Editors

$$N(\epsilon, A) = \{x \in X : d(x, a) < \epsilon \text{ for some } a \in A\},$$

$$E_{A,B} = \{\epsilon > 0 : A \subseteq N(\epsilon, B), B \subseteq N(\epsilon, A)\},$$

$$H(A, B) = \begin{cases} \inf E_{A,B} & \text{if } E_{A,B} \neq \emptyset, \\ \infty & \text{if } E_{A,B} = \emptyset. \end{cases}$$

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NOOR TRANSCENDENTAL JULIA AND MANDELBROT SETS*

Ekhar Singh^{1,1}, Mamta Rani^{2,2} and Ashish^{3,3}
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Abstract

This paper studies the fascinating Julia sets and Mandelbrot sets for the complex-valued transcendental functions such as quadratic sine function (i.e. $z \mapsto \sin^2(z) + c$), cubic sine function (i.e. $z \mapsto \sin^3(z) + c$) and bi-quadratic sine function (i.e. $z \mapsto \sin^2(z^2) + c$) via Noor iterative procedure. Visual patterns among graphical images of Noor transcendental Julia sets and Mandelbrot sets have been analyzed.

Keywords: Julia sets, Mandelbrot sets, transcendental functions, Noor orbit


AMS Subject Classification: 28A80, 26A27, 31A04, 68U05, 65D15

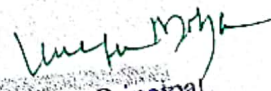
1. Introduction

In recent years, the science of fractal geometry has spread in almost all branches of science and engineering. Fractals are found in nature or generated using a mathematical recipe [2]. Gaston Julia investigated the iterative process of complex polynomials and introduced the Julia sets as a classical example of fractals [32]. In 1977, B. Mandelbrot [27] extended the work of Gaston Julia and investigated Mandelbrot sets using computer graphics. Julia sets and Mandelbrot sets have been studied for quadratic [1, 14, 25, 32], cubic [9, 10, 14, 19, 17, 20, 26], and higher degree polynomials [12] under Picard iteration. Generally, Mandelbrot and Julia sets live in a complex plane. Roehon [43] studied a more generalized form of

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