CRITERION: 3.3- Research Publication and Awards

METRIC : 3.3.1.Number of research papers published

YEAR : 2021-2022

S.No	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number	
							Link to website of the Journal	Link to article / paper / abstract of the article
2021-2022								
1	A Re-reading on Vibrant Mural Paintings of Sittanavasal Cave Temples	Dr.R.Abbas	History	International Journal of Mechanical Engineering	2021-2022	ISSN: 0974-5823	https://kalaharijournals.com/	https://kalaharijournals.com/resources/SP-Vol.6_220.pdf
2	Profile of Women Entrepreneurs	Dr.V.Rajalakshmi&Dr. P.Revathi	Economics	Journal of Morden Thamizh Research	2021-2022	ISSN: 2321-984X	Printed Journal	Printed Journal
3	Motivational Factor& Women Entrepreneurship	Dr.P.Karthiyayini& Dr.P.Revathi	Economics	Journal of Morden Thamizh Research	2021-2022	ISSN: 2321-984X	Printed Journal	Printed Journal

		Title	Author	Department	Journal	Year	ISSN	URL	URL
4		An Economics Analysis of Agriculture Crop Production in India with special Reference to tamilnadu	Kusturi.M & Dr. P.Karthiyayini	Economics	Indian Journal of Natural Science	2021-2022	ISSN: 0976-0997	https://tnsroindia.org.in/	https://tnsroindia.org.in/JOURNAL/issues67/ISSUE%2067%20AUGUST%202021%20FULL%20TEXT%20-%20PART%20-%201.pdf
5		Women Enterprenreneurs in india: An over view	Dr. P.Gunasekaran &Dr. P.Revathi	Economics	Journal of Morden Thamizh Research	2021-2022	ISSN: 2321-984X	Printed Journal	Printed Journal
6		Median vertex vague labeling of vague graphs	T. Ramachandran	Mathematics	Malaya Journal of Matematik	2021-2022	ISSN: 2321−5666	https://www.malayajournal.org/index.php/mjm	https://www.malayajournal.org/index.php/mjm
7		The Monophonic Global Domination Number Of A Graph	V. Selvi	Mathematics	Journal Of Mathematical And Computational Science	2021-2022	ISSN: 1927-5307	http://scik.org/index.php/jmcs	http://scik.org/index.php/jmcs/article/view/6225
8		Selection of nesting potentials of Corvus splendens in different trees of various sampling sites of Dindigul, Tamilnadu.	Dr. P. Sathiya Bama	Zoology	Research Journal of Agricultural Sciences.	2021-2022	ISSN : 0976-1675 E-ISSN : 2249-4538	http://rjas.org/	http://rjas.org/Article/DownloadFile/3572
9		Adverse effect of chromium in Pisces - toxicity evaluate in L. rohita	Dr. P. Senthil Elango	Zoology	European Journal of Biomedical and Pharmaceutical Sciences	2021-2022	ISSN: 2349-8870	https://www.ejbps.com/	https://www.ejbps.com/ejbps/abstract_id/8318
10		Financial Performance of Indian Banks Using Dupont Analysis	Dr. S. Rajarajeswari	BBA	JUNI KHYAT	2021-2022	ISSN: 2278-4632	https://www.researchgate.net/	https://www.researchgate.net/publication/352414078_FINANCIAL_PERFORMANCE_OF_INDIA

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11	Role of Cryptocurrency in Finance Market	Dr. S. Rajarajeswari	BBA	JUNI KHYAT	2021-2022	ISSN: 2278-4632	https://www.researchgate.net/	https://www.researchgate.net/publication/351990225_ROLE_OF_CRYPTOCURRENCY_IN_FINANCE_MARKET
12	Financial Technology in IndianFinanceMarket	Dr. S. Rajarajeswari	BBA	International Journal of Engineering and Management Research	2021-2022	ISSN: 2250-0758	https://ijemr.vandanapublications.com/index.php/ijemr/index	https://ijemr.vandanapublications.com/index.php/ijemr/article/view/122/122
13	Revamping the Knitwear Cluster in Tirupur - A Bold initiative towards Sustainable Development	Dr. S. Rajarajeswari	BBA	Journal of University of Shanghai for Science and Technology	2021-2022	ISSN: 1007-6735	https://jusst.org/	https://jusst.org/revamping-the-knitwear-cluster-in-tirupur-a-bold-initiative-towards-sustainable-development/
14	Language Tools: Communicating in Today's World of Business	Dr. S. Nagarajan	BBA	KALA Journal of Indian Arts History Congress	2021-2022	ISSN : 0975-7945	https://indianculture.gov.in/union-catalogue/kala-journal-indian-art-history-congress-4	Printed Journal
15	The Impact of Globalisation in Business Communication	Dr. S. Nagarajan	BBA	KALA Journal of Indian Arts History Congress	2021-2022	ISSN : 0975-7945	https://indianculture.gov.in/union-catalogue/kala-journal-indian-art-history-congress-4	Printed Journal
16	Content Analysis of Homepages of Library Websites of the top 10 IITs in India	Sheeba Johnson and Dr.K.Ramasamy	Central Library	Library Philosophy and Practice	2021-2022	ISSN: 1522-0222	https://digitalcommons.unl.edu/libphilprac/	https://digitalcommons.unl.edu/libphilprac/5237/?utm_source=digitalcommons.unl.edu%2Flibphilprac%2F5237&utm_medium=PDF&utm_campaign

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17	"Urban disease ecology and its spatial variation of Chikungunyain Madurai City,Tamilnadu,India:a geomedical study"	Dr. J. Vimala Vinnarasi	Geography	GeoJournal	2021-2022	ISSN:0343-2521	https://link.springer.com	https://link.springer.com/article/10.1007/s10708-020-10192-6
18	Female Oppression in Charlotte Vale Allen's Mixed Emotions and Vasanthy's Meendum Naalai Varum (Tomorrow Will Come Again): A Comparative Study.	Ms. P. Hemalatha	English	NIU International Journal of Human Rights	2021-2022	ISSN:2394-0298	https://niu.edu.in/niuijhr/#:~:text=NIU%20International%20Journal%20of%20Human%20Rights%2C%20a%20UGC%20CARE%20listed,social%20sciences%2C%20law%20and%20humanities.	UGC (Old List)
19	Social Concerns in Charlotte Vale Allen's Where is the Baby and Vasanthy's Kadai Pommakal (Doll's in the Shop): A Comparative Study.	Ms. P. Hemalatha	English	Kalyan Bharati	2021-2022	ISSN: 0976-0822	https://portal.issn.org/resource/ISSN/0976-0822	UGC (Old List)
20	Female Oppression in Charlotte Vale Allen's Mixed Emotions and Vasanthy's Meendum Naalai Varum (Tomorrow Will Come Again): A Comparative Study.	Dr.K.M.Sumathi	English	NIU International Journal of Human Rights	2021-2022	ISSN:2394-0298	https://niu.edu.in/niuijhr/#:~:text=NIU%20International%20Journal%20of%20Human%20Rights%2C%20a%20UGC%20CARE%20listed,social%20sciences%2C%20law%20and%20humanities.	UGC (Old List)

21	Historical Perspective of Gupta Art and Architecture	Dr. R. Nandhini	History	Journal of Modern Thamizh Research	2021-2022	ISSN No. 2321-984X	Printed Journal	UGC (Old List)
22	Studies on impact of heavy metals on Tilapia (Oreochromis niloticus) with referene to haematological parameter	Dr. P. Senthil Elango	Zoology	British Journal of Pharmaceutical and Medical Research	2021-2022	ISSN:2456-9836	https://www.ejbps.com/	UGC (Old List)
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24	Social Concerns in Charlotte Vale Allen's Where is the Baby and Vasanthy's Kadai Pommakal (Doll's in the Shop): A Comparative Study.	Dr.K.M.Sumathi	English	Kalyan Bharati	2021-2022	ISSN: 0976-0822	https://portal.issn.org/resource/ISSN/0976-0822	UGC (Old List)
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26	Comprehensive study on prime combination labeling of graphs	Dr. K. Annadurai & G.Megala	Mathematics	Indian Journal of Natural Sciences	2021-2022	ISSN: 0976-0997	http://www.tnsroindia.org.in/journals.html	Printed Journal
27	OPTIMIZATION OF FUZZY INVENTORY MODEL WITH DETERIORATION	M.Sabina Begum	Mathematics	Annals Of The Romanian Society For	2021-2022	ISSN:1583-6258	https://www.scopus.com/sourceid/19700167901	https://annalsofrscb.ro/index.php/journal/article/view/130/97

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29	Solutions To Fuzzy Inventory Model With Fuzzy Demand Rate Using Heptagonal Fuzzy Numbers.	S.Daisy	Mathematics	Annals Of The Romanian Society For Cell Biology,	2021-2022	ISSN:1583-6258	https://www.scopus.com/sourceid/19700167901	file:///C:/Users/acer/Downloads/2651-Article%20Text-4884-1-10-20210409.pdf
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31	Information Systems Natural Language Processing: A Survey of Current Research Trends	A.Shanthasheela	Computer Science	Indian Journal of Natural Sciences	2021-2022	SSN: 0976 – 0997	https://tnsroindia.org.in/journals.html	https://tnsroindia.org.in/JOURNAL/issue69/ISSUE%2069%20-%20FRONT%20PART%20-%201.pdf
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33	Wisdom and Compassion in the Novels by Chitrabanerjee Divakaruni	H.Surya Prabha	English	Atishay Kalit	2021-2022	ISSN: 2277-419X	https://atishaykalit.in/	Printed Journal

34	Pluralism in the Select Novels Bharathi Mukherjee International Journal of Mechanical Engineering.	Dr.K.M.Sumathi & P.Vimala Rani	English	Kalahari Journals	2021-2022	ISSN-0974-5823	https://www.kalaharijournals.com/	https://www.kalaharijournals.com/resources/SP-Vol.6_29.pdf
35	Unveiling the Purdah: A Feminist Reading of Imtiaz Dharker's Purdah – I & Purdah - II	SM.Gayathri	English	Alochana Chakra Journal	2021-2022	ISSN 2231-3990	http://www.alochonachakra.com/	Printed Journal
36	Diversity of butterfly species in selected sites of Dindigul , Tamilnadu	Dr. P. Sathiya Bama	Zoology	Research Journal of Agricultural Sciences	2021-2022	P-ISSN : 0976-1675 E-ISSN : 2249-4538	http://rjas.org/	UGC (Old List)

D. Laku

PRINCIPAL

A Re-reading on Vibrant Mural Paintings of Sittanavasal Cave Temples

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Abstract

The Sittanavasal rock-cave is listed as one of the *adarsh smarak* monument by Archaeological Survey of India. An earliest inscription attributes its renovation to a Pandya King probably by Maran Sendan (654–670 AD). From this it is clear that the Early Pandya Kings too were scooped out and renovated monolithic rock cut cave temples and continued the art tradition of the Tamils. This paper traces the mural paintings at the Jain rock-cut cave temple at Sittannavasal are said to be an imperative as those of the Ajanta paintings.

Key Words: adarsh smarak*,* murals, arivar kovil, sittannavasal, arihants and sramana.

The Pudukkottai region has many archaeological finds of the megalithic burial sites from much earlier and numerous historical monuments existed in this region.[1] among these monuments, a rock-cut cave temple, situated on the western side of central part of a hill, which runs in a north–south direction of the village Sittanavasal.

This name Sittanavasal is a distorted form of *Sit-tan-na-va-yil*, a Tamil word, which means "the abode of great Saints." A unique Tamil *Sramana* complexes of caves executed in Sittanavasal village. The Sittanavasal rock-cave is listed as one of the *adarsh smarak* monument by Archaeological Survey of India.[2] (A.S.I) The A.S.I has listed Sittanavasal Cave in the list of "Must See" Indian Heritage.[3]

Sittanavasal cave temple also has another Cave Temple known as; Arivar Koil**.** This was also an important Jain centre for many centuries ago. It must be remembered that Jainism while spread to South India during the 4th -3rd centuries B.C., Chandragupta Maurya had converted to Jainism and had travelled to Shravanabelagola along with a large number of Jain ascetics. However the Sittanavasal rock-cut Jain caves were excavated in the 3rd century A.D. before the Pandya rule. The caves were first cut out into the natural cavern type structure of the Rock Cut Cave Temple face.

Earliest Jain inscriptions on these beds are dated to the period between the 3rd to 10th centuries A.D. It is evident that Jain ascetics were using this location for many centuries before the Arivar Kovil cave was excavated. The original inscriptions referred to the names of the ascetics, who performed the ritual of (progressive starving leading to death). The vandals have inscribed graffiti on these beds, *Sallekhana* and now the access has been barred with a steel barricade. Central and Southern Tamilaham have this King of many such Jain beds existed on top of various hills.

PROFILE OF WOMEN ENTREPRENEURS

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ABSTRACT

Emergence of entrepreneurship is considered to be closely linked to social, cultural, religious and psychological variables and these changes seem to have become acceptable norms in the context of women at work in the Indian situation today with more and more women participating in the economic development. Many factors like urbanization, technical progress, women education etc., have profoundly changed the traditional conditions even in a developing country like India.

Keywords: Entrepreneurship, Economic, Women, Education, Development and Traditional.

Introduction:

Women constitute around half of the total world population. In traditional societies, they were confined to the four walls of houses performing household activities and have been marginalized and relegated to the status of subjugated class. Her involvement in economic activities was marked by low work participation rates and that too in low skill jobs in the unorganised sector of the economy. Ideologically as well as in prac-tice women are considered completely inferior to males. As a result they have been unrecognised and under-valued as well being placed as second sex in the society. But the transgression of values and the changing socio-economic conditions of women out of industrialization urbanisation and golbalisation altered the status of women and their ascribed roles at a startling pace. In turn this has created new stance in social structural issues of women and created economic opportunities for women who want to own and operate businesses. As a result, women are coming out of their veil and been performing exceedingly well in different spheres of activities like academics, politics, administration, social work and so on. Now, they have started plunging into industry and running their enterprises successfully as designers, interior decorators, exporters, publishers, garment manufacturers and still exploring new avenues of economic participation.

The challenges and opportunities provided to the women of digital era are growing rapidly and view entrepreneurship as a challenge to prove their powers, to do something meaningful in life, to become economically independent or even as a means of better livelihood. In India, although women constitute the majority of the total population, the entrepreneurial world is still a male dominated one. Women in advanced nations are recognized and are more prominent in the business world. But the Indian women are still struggling to attain the position as in the advanced countries. However, there is a greater dynamism in the rate of growth of female employment.

INSTITUTIONAL FACTORS OF WOMEN ENTREPRENEURSHIP

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ABSTRACT

World is changing at a startling pace. Political and economic transformations seem to be occurring everywhere-as countries convert from planned to demand economies, dictatorships evolve toward democracy, and monarchies build new civil institutions. These changes have altered the grim scenario of lifestyle of women folk drastically across the world. India women are not an exception for it. As a result women have shifted their work place from kitchen premises and cottage industries to non-traditional and techno-savvy activities. This has made them to indulge in every line of business from pappad to power cables. The development of micro enterprises in general and particularly for women have opened the way for economic independence of women and shattered the glass ceilings about women's image and status.

Keywords: Lifestyle, Scenario, Women, Industries, Development, Independence and Economy.

Introduction

World is changing at a startling pace. Political and economic transformations seem to be occurring everywhere-as countries convert from planned to demand economies, dictatorships evolve toward democracy, and monarchies build new civil institutions. These changes have altered the grim scenario of lifestyle of women folk drastically across the world. India women are not an exception for it.

Indian women, who have been considered completely inferior to males both ideologically as well as in practice, came out of the clutches due to industrialization and urbanization. This has altered the unequal gender milieu of the Indian society drastically and opened new vista in social structural issues of women. The transformation take place in the Indian social fabric in terms of increased literacy among women and varied aspirations for better status, have witnessed a growing volume of unemployment. This problem necessitates a change in the life style of women in the country. Self-employment is recognized as panacea, which generates a category of entrepreneurs, who own economic enterprises at micro and macro levels. As a result women have shifted their work place from kitchen premises and cottage industries to non-traditional and techno-savvy activities. This has made them to indulge in every line of business from pappad to power cables. The development of micro enterprises in general and particularly for women have opened the way for economic independence of women and shattered the glass ceilings about women's image and status.

WOMEN ENTREPRENEURS IN INDIA: AN OVER VIEW

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ABSTRACT

The emergence of entrepreneurs in a society depends to a great extent on the social, economic, political, cultural, psychological and environmental factors prevailing in a society. Entrepreneurs with their inherent intelligence, skill and hard work making the best use of the opportunities that are made available in the above factors. Women entrepreneurs are no exception to this. Though women in traditional societies are confined to the four walls of houses doing all the household works including taking care of the children and are treated as property of men, the socio-economic status of women in the modern society has been changed substantially. Modern age has removed the veil of ignorance. Slowly and subtly changes are creeping in. Women have come out of the four walls to participate in all sorts of activities. They are growing and blossoming as economical persons in their own right.

Keywords: Traditional, Women, Modern, Society, Psycho, Cultural and Environmental.

Introduction

Where half of India's population consists of women, the species of woman entrepreneur was almost unheard of, both policy-wise and in the bygone decades. They are very shy reserved and emotionally attached to the family. They are treated as weak and dependent on men. They are the neglected sections in the society.

Entrepreneurial traits and competencies have not been well developed amongst the women entrepreneurs. But, with the spread of education and awareness, women have taken higher levels of activities. Women's entry into business, or entrepreneurship, is traced out as an extension of their kitchen activities mainly to 3 Ps i.e. pickles, powder and pappad. In sixties, Indian women have started one-woman enterprises at home as entrepreneurial activities. There were 6000 women entrepreneurs during the period. With growing awareness about business and the spread of education among women, they have started shifting from 3 Ps to become assertive and empowered entrepreneurs, involving in competitive and productive economic activities.

The Industrial Policy resolution of 1978 which recognized the women entrepreneurs as a special group needing assistance and support in vague terms, and that too as a sequel to the declaration of the International Decade of Women during 1975-85 and the International Conference of Women Entrepreneurs held at Delhi in 1984. As a result, Government of India has also brought a change in its policy objective of welfare approach of women to development approach of women. Women were given priorities in all the sectors including small scale industries sector. In about two decade's time, the number of women entrepreneurs has increased over the years. They not only entered business in a small way but

Median vertex vague labeling of vague graphs

R. Janani[1]* and T. Ramachandran[2]

Abstract

Vague graph is a pair $G = (A, B)$ where $A = (t_A, f_A)$ is a vague set on V and $B = (t_B, f_B)$ is a vague set on $E \subseteq V \times V$ such that $t_B(xy) \leq min(t_A(x), t_A(y))$ and $f_B(xy) \geq max(f_A(x), f_A(y))$ for each edge $xy \subseteq E$. A is called as the vague vertex set of G and B as the vague edge set of G. The main purpose of this paper is to introduce Median Vertex Vague Labeling of vague graphs. In addition, an application of Median Vertex Vague Labeling in traffic flow network is discussed in this paper.

Keywords

Vague graph, Path Vague Graph, Median Vertex Vague Labeling, t-Vertex Vague Labeling.

AMS Subject Classification

05C78, 05C99.

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Contents

1. Introduction

Majority of our conventional devices for formal demonstrating, thinking, and registering are crisp, deterministic, and exact in character. In dual logic, for example, an announcement can be valid or bogus and nothing in the middle. In set hypothesis, a component can either have a place in a set or not; and in optimization, an answer is either possible or not. Apart from this, numerous genuine circumstances are all 4the time questionable or vague in various manners. Fuzziness can be found in numerous areas of day today life, in which human decision, assessment and choices are significant [1].

In 1993, Gau and Buehrer presented the idea of vague set theory as a generalization of Zadeh fuzzy set theory [2] by replacing the value of an element in a set with a subinterval [0, 1]. To be specific, true- membership value and false-membership value are the boundary values of the membership degree. Vague set theory becomes a promising tool to deal with inaccurate, unsure or ambiguous information [2].

Numerous specialists have applied this theory to diverse circumstances, for example, fuzzy control, decision-making, etc. Ramakrishna introduced vague Graph idea [3]. Akram et al. [4] presented certain types of vague graph such as neighbourly irregular vague graphs, neighbourly total irregular vague graphs, highly irregular vague graphs and highly total irregular vague graphs. In that, some properties related with these vague graphs are examined. Furthermore, under necessary and sufficient condition, neighbourly irregular and highly irregular vague graphs are equivalent [3]. In addition, Borzooei and Rashmanlou defined domination, degree of vertices, homomorphism and isomorphism in vague graphs [5, 6]. A graph Labeling is an assignment of integers to the vertices or edges, or both, subject to certain conditions. From the meaning of Graph Labeling, in this paper, the new definition for Labeling the vertices and edges of vague graph is proposed. In addition, Vague Labeling for some isomorphic vague graphs has been discussed.

2. Preliminaries

In this section, some of the basic definitions of graphs are discussed. Throughout this paper, $G^* = (V, E)$ means a non-trivial, finite connected and undirected graph without loops or multiple edges.

THE MONOPHONIC GLOBAL DOMINATION NUMBER OF A GRAPH

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Abstract. A set $M \subseteq V$ is said to be a monophonic global dominating set of G if M is both a monophonic set and a global dominating set of G. The minimum cardinality of a monophonic global dominating set of G is the monophonic global domination number of G and is denoted by $\overline{\gamma}_m(G)$. A monophonic global dominating set of cardinality $\overline{\gamma}_m(G)$ is called a $\overline{\gamma}_m$-set of G. The monophonic global domination number of certain classes of graphs are determined. It is proved that $2 \leq \overline{\gamma}_m(G) \leq \overline{\gamma}_g(G) \leq n$, where $\overline{\gamma}_g(G)$ is a geodetic global domination number of a G. It is shown that for every pair of positive integers a and b with $2 \leq a \leq b$, there exists a connected graph G such that $\overline{\gamma}_m(G) = a$ and $\overline{\gamma}_g(G) = b$.

Keywords: monophonic global domination number; global domination number; monophonic number; domination number.

2010 AMS Subject Classification: 05C38, 05C69, 05C12.

1. INTRODUCTION

By a graph $G = (V, E)$, we mean a finite, undirected connected graph without loops or multiple edges. The *order* and *size* of G are denoted by m and n respectively. For basic graph theoretic terminology, we refer to [2]. Two vertices u and v are said to be *adjacent* if uv is

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Selection of Nesting Potentials of Corvus Splendens in Different Trees of Various Sampling Sites of Dindigul, Tamil Nadu

P. Sathiya Bama*[1]

A B S T R A C T

Every bird present on the earth need a shelter during their breeding season. Shelter home may be in the form of nest, dwelling space on the ground, on tree crevices or on electric poles. Corvus splendens is a cosmopolitan bird with unique nest building characteristic features. Identifying crucial factors involved in nest-site selection is essential for implementing conservation measures for house crow and its population. In the present study an attempt was made to draw the affinity of *C. splendens* with the nesting potential, number of nests per tree, canopy configuration and ramifications in the probable tree species of sampling sites in and around Dindigul, Tamil Nadu. Out of 687 trees surveyed, 39 species of 306 trees belonging to 23 families were found to be suitable for nest construction. Likewise, two branches were chosen for nest platform substratum in the maximum trees studied. More number of nests were constructed on the top canopy of trees located near commercial buildings where mutton stalls available followed by residential buildings with food source proximity than human non inhabitated areas. The study provides the basic information about bird's instinct behaviour of nest construction on suitable tree species near food availability which can be helpful for conservation and study of bird's ethnology.

Key words: Corvus splendens, Nesting potential, Food source, Conservation measures

Crows are considered to be the most intelligent and adaptable birds belonging to the Corvid family. The black color, social behavior and unique calls are the distinct features of it [1]. Nesting phenomena is the key factor in reproduction as well as survival of the offspring in birds. Breeds are successful by the selection of sites for nest construction. Crows may construct a number of primary nests or decoy secondary nests [2]. Nests are usually seen in hidden canopy of tall well-built tree branches in farmland, road ways, residential areas, on the top of tall buildings and electric poles. In villages crows gather to forage in agricultural fields, while in cities near meat shops, fish markets, slaughter houses, hotels, hostels and garbage dump areas are their feeding ground. The present study is focused on the preference of potential nesting trees on the basis of habitat characteristics in the selected sampling areas of Dindigul, Tamil Nadu, India. Therefore, a survey was conducted on the nesting trees of *C. splendens* in different localities of Dindigul, Tamil Nadu, India for a period of six months from May to October 2020 and the findings revealed to ascertain the impact of tree type on the propagation and multiplication of the house crows.

MATERIALS AND METHODS

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Dindigul is a town located in Tamil Nadu of South India. The geographical coordinate of Dindigul is 10.35°N 77.95°E and has an average elevation of 265 m (869 ft) in the foot hills of Sirumalai hills. Summer season is from March to June, while October to January marks the winter season. Dindigul receives rainfall with an average of 812 mm annually. Bulk of the rainfall is received by the north east monsoon in the months of October, November and December. Study site is a semi urban area encircling residential houses, hotels, mutton stalls, fish markets, slaughter houses, schools, hospitals, small ponds and parks. There are lot of stretches of herbs, shrubs, bushes and woody trees on either side of the roadsides. Six sampling stretch areas were selected in the view of its greenery residential, commercial and non-habituated area which indirectly promote the birds nesting and reproductive behavior.

Survey on nest characteristics

A study was carried out for six months period from May to October 2020. Surveys were conducted during different seasons at different sites in and around Dindigul, Tamil Nadu, in six different selected sampling areas of commercial, residential and non-residential areas (Table 1).

Every day regular crow watching was carried out in the early morning hours during the entire period. Crow nests were discovered by systematic searching, numbered when found and recorded with a hand-held GPS unit (Garmin). Pair of binoculars and digital camera was used. The instrument used was Nikon Monarch 7 (8 × 42) binoculars. Lower magnification power of 8X and 42 mm objective lens diameter was used for general nest watching. If the

ADVERSE EFFECT OF CHROMIUM IN PISCES–TOXICITY EVALUTE IN *L.ROHITA*

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ABSTRACT

Chromium toxicity is the affected by valance state chromium (III) is generally less toxic than the chromium (VI). There is equilibrium between the two forms under different conditions. Chromium resistance bacteria capable of reducing or transforming hexavalent to trivalent chromium were isolated from soil and water. Chromium apart from being an important metal present in substantial threat to aquatic life as well as human being. Because soluble chromium is extremely pernicious and shows mutagenic effects, due to its strong oxidizing nature. It destabilizes the ecosystem due to their toxic impact on biota and bioaccumulation in certain organisms. Occurrence of chromium varies in fishes, depending upon their ages, development as well as other physiological variables. It also produced cytotoxicity and detrimental impact on behaviour of fish such hypertrophy and paraplegia at gill epithelium, uneven swimming and suspended feeding. Various research studies indicated adverse effects of chromium in fish at haematological level, like anaemia, thrombocytopenia, decrease in haemoglobin and total erythrocyte count. At biochemical level, mostly decline in the contains of glycogen. Lipids and proteins were observed.

KEYWORDS: Chromium resistance bacteria, biological oxygen demand, chemical oxygen demand, extremely pernicious and mutagenic effects, toxic effect, haematology.

INTRODUCTION

Bioaccumulation of heavy metals contaminate land air and water. Industries such as cotton textiles, tannery, electroplating, iron and steel manufacturing industries, rubber paints are the major industries which polluted water. The major source of chromium is tannery and leather producing industries.[37] Chromium enters into water bodies and effect on biological and chemical oxygen demand.

Hexavalent chromium is a toxic industrial pollutant and classified carcinogen possessing mutagenic and teratogenic properties.[3] The field of ecotoxicology, fundamental research on the impact of toxic chemicals on terrestrial, freshwater, and marine ecosystems at the population or community level has undergone a particularly strong surge in aquatic system.[3] This scientific data discussed in this review provide a basis for understanding the potential impact and for advancing of our knowledge of the eco–toxicological effects and risk assessment of chromium.[3]

FATE OF CHROMIUM IN THE ENVIRONMENT

In biodegradation of chromium soils contain organic and other reducing agents which help to reduce hexavalent chromium to trivalent chromium. It is proven that Cr^{+6} is a strong oxidizing agent and can also be reduced by electron donors because low concentration oxygen is responsible for the reduction.[37]

$$2CrO_4^{-2} + 2H_3O^- \leftrightarrow CrO_7^{-2} + 3H_2O$$
$$HCrO_4^- + HCrO_4^- \Leftrightarrow Cr_2O_7^{2-} + O$$
$$2Cr_2O_7^{2-} + 3C° + 16H^+ \rightarrow 4Cr^{3+} + 3CO_2 + 8H_2O$$
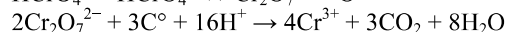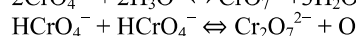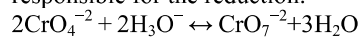
The pH of water has a profound influence on the reduction of chromium in the environment. Dimers predominant at pH=6.5 whereas monomers are more abundant at extremely low pH values (0.1).[3] A significant occurrence of dimmers is observed in Cr^{+6} solution is greater than 30mM, whereas monomers are dominant in concentration below 30mM.Microbial processes also transform Cr(IV) to the insoluble trivalent form which adsorbs on solid surfaces.[3] The most microbial reductions of Cr(IV) can be reduced to Cr(III) that precipitates as a fairly insoluble hydroxide.

CHROMIUM TOXICITY TO FISH

The aquatic toxicology of Cr depends on both biotic and abiotic factors. The biotic factors include the type of species, age and developmental stage. The temperature, concentration of Cr, oxidation state of Cr, pH, alkalinity, salinity and hardness of water constitute the abiotic factors. Moreover, lethal and sub–lethal concentrations of the metal and its speciation also determine the sensitivity of the individual organism.[3]

FINANCIAL PERFORMANCE OF INDIAN BANKS USING DUPONT ANALYSIS

Article · April 2021

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FINANCIAL PERFORMANCE OF INDIAN BANKS USING DUPONT ANALYSIS – A COMPARATIVE STUDY.
(STATE BANK OF INDIA, CANARA BANK, BANK OF INDIA & ICICI BANK, HDFC BANK, AXIS BANK)

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Abstract
Return on Equity can be calculated through traditional as well as DuPont model. This paper, an attempt is made to calculate ROE of three private and public sector banks by using DuPont model ratios, to measure the efficiency of the bank's in respect of profit margin and management effectiveness. The data analysis part is made on various sources from internet and Annual Reports for the year 2013- 2017. Conclusion is drawn by comparing the DuPont ratios of peer banks (State Bank of India, Canara Bank, Bank of India & ICICI Bank, HDFC Bank, Axis Bank).

Key words: DuPont Analysis, Return on Equity, State Bank of India, Canara Bank, Bank of India & ICICI Bank, HDFC Bank, Axis Bank, Financial Performance.

Introduction
Indian Banking system is one of the largest banking systems, it has gone through various stages of development since the set-up of General Bank of India in 1786. Every bank formed and raised with the motive of profitability and mixed with service mind set. In order to measure the profit and sustenance of the banks in the minds of public, financial parameters are considered. In this research the methodology which was evolved in early 1900's. This was created and followed in 1912, by a graduate from engineering studies by name F. Donaldson Brown, in the name of DuPont Analysis, this was named after the DuPont company, they began to use this in their internal reporting.

Origin of DuPont Analysis
F. Donaldson Brown, a staff person in DuPont's Treasury department, developed the DuPont model of return on equity. The DuPont Analysis provides a starting point for determining the strengths and weaknesses of a company. The model is built on three components, which cover the areas of profitability, operating efficiency and leverage (liquidity).

Key Components of the DuPont Analysis
- **Net Profit Margin** (Net Income/Sales). This ratio measures after tax profitability, what is the profit a bank makes for every rupee it generates in revenue. Generally, the higher the ratio, the better.
- **Asset Turnover** (Sales/Total Assets). This ratio indicates the amount of sales generated for every rupee worth of assets. This evaluates the organization's efficiency in using its assets. Typically, the higher, the better. However, this ratio tends to be inversely related to the net margin, i.e., the higher the net profit margin, the lower the asset turnover.
- **Leverage Ratio** (Average Assets/Average Shareholder Equity). This ratio determines the extent to which the bank relies on debt financing. The higher the number, the more debt the bank is carrying. Averages are used to control any potential bias that may be caused by end-of-the-year values.
- **Return on Equity (ROE)** The beauty of ROE is that it is an important measure that only requires two numbers to compute, net income and shareholders' equity.
- **Net Interest Margin (NIM)** is a measure of the difference between the interest income generated by banks and the amount of interest paid out to their lenders (for example, deposits), relative to the amount of their (interest-earning) assets. a positive net interest margin suggests that an entity operates profitably, while a negative figure implies investment inefficiency.

ROLE OF CRYPTOCURRENCY IN FINANCE MARKET

Article · April 2021

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ROLE OF CRYPTOCURRENCY IN FINANCE MARKET

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Abstract

This article explores the cryptocurrency roles played in the finance market and how the currency is making impacts in the third world, also discussed the possibilities to rule in the third world. We also discussed the nature of Bit coin and the impact of transformed blockchain in current scenario. We discussed the ways of trading the crypto currencies, also how the automatic bot helps to trade the currencies in the market. As all know the size of this market is small in finance segment and there are few limitations intricated in trading and usage of these currencies. We still hope that governments' interventions to regulate and providing room for a wider acceptancy of the currency.

Key Words – Cryptocurrency in Finance Market, Bitcoin, Automatic trading bot, crypto currency, Block chain.

Introduction

Money has been part of human history for at least 3000 years. Before that time, it is assumed that a system of bartering was carried out and bartering is a direct trade of goods and services.

Man-kinds one of the great achievements is money. It was increasing at the speed of business could be done. Prehistoric currency was used for trading goods like animal skins, salt and weapons which was developed over the centuries. Those traded goods served as the medium of exchange even though the unit values were still negotiable. This system of barter and trade spread across the world and it is still surviving today and in some parts of the globe. Sometime around 1100 BC Chinese moved from using actual tools and weapons as a medium of exchange in using miniature replicas of the same tools cast in bronze. The tiny daggers, spades and hoes were abandoned for the less prickly shape of a circle which became some of the first coins.

Money can be a shell, a metal coin, or piece of paper with a historic image on it. Money derives its value by being a medium of exchange, a unit of measurement and a storehouse for wealth. Money allows people to trade goods and services indirectly, understand the price of goods (prices written in dollar and cents correspond with an amount in the wallet) and gives us a way to save for larger purchases in the future.

Cryptocurrency

The word cryptocurrency has been derived from the term Cryptography that means to encrypt transactions and regulate the assembly of the currency. Bitcoin is a world's first decentralized peer-to-peer digital currency. The success of Bitcoin has paved ways for the new cryptocurrencies to arise. The open-source nature of Bitcoin has led to the development of hundreds of new digital tokens also known as Altcoins or Bitcoin clones. There some of the most-sought after cryptocurrencies like Ripple, Litecoin, Dash, Ether and Monero.

In the present era, cryptocurrency has become a preferred choice for online users who are willingly ready to invest online. Excepting few constrains there are not much that could demotivate the virtual currency enthusiasts.

Financial Technology in Indian Finance Market

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ABSTRACT

The purpose of this paper is to discuss issues such as fintech drivers, shortcomings of traditional financial services, and the role of technological advancement. The paper also addresses issues concerning fintech investment and disruption. It refers to financial technology challenges such as investment management, customer management, and regulation. The paper examines the evolution of fintech in the global market over time.

Keywords– FinTech, Financial Technology, Indian FinTech Market, Banking Tech, Blockchain, Cryptocurrency

I. INTRODUCTION

Fintech, which is an important application of technology in financial services, has grown in popularity in recent years as a result of dramatic technological advances and post-crisis regulatory changes. Along with incumbent financial institutions, the financial services sector has seen a new wave of participants, including Fintech startups, e-commerce and technology firms.

Fintech companies use innovative business models and emerging technologies to enable, improve, and disrupt financial services. This includes both startups and mature companies, as well as non-financial service providers working in the digital finance space.

II. WHAT IS FINTECH?

Fintech is the application of technology to the provision of new and improved financial services. Part of the impetus for the rise of fintech is that, while information technology has reduced the cost and functionality of everything from computers to automobiles, the unit cost of financial intermediation appears to have remained stable for more than a century. Philippon estimates that the unit cost of financial intermediation in the United States has remained constant over the last century at around 2%. As a result, one promise of fintech is the discovery of less expensive methods to overcome financial contracting frictions and lower the cost of financial services in order to improve consumer welfare. Recent evidence suggests that this promise may be true, as evidenced by evidence that fintech has improved mortgage lending productivity.

Fintech is a component of the evolving financial innovation process, which has been shown in theory to be risky but valuable, with recent evidence indicating that it provides significant value to investors. Fintech is defined by the Financial Stability Board (FSB) as "technologically enabled financial innovation that could result in new business models, applications, processes, or products with a material impact on financial markets and institutions, as well as the provision of financial services." The Basel Committee on Banking Supervision (BCBS) has also adopted this definition, in part because "this broad definition is considered useful by the BCBS in light of the current fluidity of fintech developments." Fintech encompasses the following areas: I credit, deposits, and capital-raising services; (ii) payments, clearing, and settlement services, including digital currencies; (iii) investment management services (including trading); and (iv) insurance. Blockchain technology is a component of the technological backbone of fintech.

III. CHALLENGES OF FINANCIAL TECHNOLOGY

Fintech in various industries, particularly banking and finance, faces three major challenges that must be addressed as soon as possible.

One of the major concerns of the Fintech industry is cyber security. Many critics are concerned about the confidentiality of the data. Because of the banking and finance sector's digitization, it is vulnerable to cyberattacks. As a result, the government and private sector must work together to ensure that their systems are robust enough to prevent the exposure of sensitive data.

Customers must be able to accept and trust the changing systems. Fintech services are expected to supplant traditional banking and financial services, which remain a major challenge for consumers with conservative attitudes. Lack of Human Touch: Chatbots and artificial intelligence (AI) are expected to replace human contact. This could be a major impediment to the growth of various sectors that use fintech technology to serve their customers. As a result, businesses must strive to maintain a human touch

Revamping the Knitwear Cluster in Tirupur - A Bold initiative towards Sustainable Development

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Abstract

The rapid growth of the knitwear industry in Tirupur has led to the depletion and contamination of the ground and surface water in the region. The study outlines the pollutant effects of the knitwear production process and the efforts of the industry and the government to curtail them. Despite appreciable efforts taken, the problems still seem to persist. This article suggests measures to revamp the knitwear cluster through application of greener practices which would lead to the development of this knitwear industry in a more sustainable way.

Keywords: Wet process, Common Effluent treatment plants, R&D, common brand

Introduction

Tirupur a small town in Tamilnadu during the decades after India's independence, shot to fame after 1985 as a busy exporting town of hosiery products to most of the developed countries of the world. Not only the town has the pride of being called 'dollar town' and the 'town that never sleeps', it was applauded as the 'town of export excellence' by the EXIM policy 2002-07. Tirupur's hosiery industry initially produced only inner garments that too only white in colour. Till the late 1960s, this industry produced mainly grey and bleached vests called banians. In 1968, other items, mainly underwear began to be manufactured. From 1980 onwards, some of the entrepreneurs also began to produce T-shirts for exports. With their focus on diversification and quality control and with the strength of direct connections with foreign buyers the cluster is now into multi product cotton knitwear and produces T-shirts, cardigans, jerseys, pullovers, ladies' blouses, skirts, trousers, sportswear and industrial wear.

Tirupur is in a dry, water-scarce region, and the rapid expansion of the textile industry has taken place in an unplanned manner, with no associated development of supporting infrastructure or institutional capacity. As a result, the growth has led to the depletion of groundwater reserves and a serious deterioration in environmental quality of both surface and ground water.

The knitwear production process in Tirupur

The production process in Tirupur comprises of four operations organized around different firms. They are:

i.   Knitting of cotton yarn to make grey fabric,

LANGUAGE TOOLS: COMMUNICATING IN TODAY'S WORLD OF BUSINESS

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Abstract

In a general public progressively intervened by innovation, the medium has made unmatched openings. Therefore, it has pulled together teachers' consideration on how mechanical proficiency is both a fundamental learning result in all advanced education programs, and the delegate, the way to accomplish the advanced skills anticipated from workers. In the field of English for Specific Purposes, and when innovation is seen to empower speedy also, powerful access to countless wellsprings of data and information, educating a language stands up to instructors and understudies with unique perspectives that unite into what we see to be interconnected ways. We basically consider these interconnected ways in request to get further bits of knowledge on how innovation, to be specific Machine Translation and PC Aided Translation, is seen by business communicators who are learning English in an ESP situation. Inside the premises that interpretation is a demonstration of intercultural correspondence, our contextual investigation tends to reflected view of the English language, the demonstration of interpretation, and the utilization of innovative devices. Our examination draws on the two points of view what's more, talks about how reflected pictures of understudies and instructors join through task based approaches, established in functional, short visual assignments with a reasonable and quickly noticeable reason.

Keywords: English for Specific purposes, higher education, translation, machine translation, computer aided-translation, business communication, task-based approach.

Introduction

In the event that the present society is progressively interceded by innovation, at that point openings for work in all fields progressively mirror this setting of rising types of new media. The medium has made unmatched chances, diverting instructor's regard for how mechanical education isn't just a significant learning result in Higher Education (HE), yet additionally the vehicle to accomplish the abilities expected in the working environment. Current cultural weights challenge instructors of all branches of knowledge to rehash instructive settings, their instructive practices just as themselves as people by reexamining frames of mind, originations, strategies and their relations in the instructive procedure. As innovation is seen to empower brisk and successful access to countless wellsprings of data, and gives off an impression of being promptly accessible (ready) to be changed over into information, language instructors and understudies are stood up to with digressing points of view that meet into what we consider to be interlinked directions. This is particularly significant in the setting of English for Specific Purposes (ESP), in which educators' view of expert aptitudes required in the present work advertise have repercussions on their course plan and the instructive techniques actualized. For 21st-century understudies,

THE IMPACT OF GLOBALIIZATION IN BUSINESS COMMUNICATION

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Abstract

The aim of this project is to consider explicit impacts of the method of globalization on the person to-single brand name correspondence, especially business correspondence. The thought is paid to the relationship of mono-lingualism and multilingualism in correspondence, relationship of the correspondence nets and multilingualism, translation and progress of proposed business pidgin.

Key words: Business correspondence, globalization, corporate correspondence.

Introduction

Globalization is comprehended as subjectively new degree of the improvement of the human culture, which comprises of three fundamental measurements - monetary, social and political. Basically, globalization is seen as a financial wonder; however theoreticians in various logical fields keep hidden increasingly more regularly that is a complex social procedure, which triggers an essential rebuilding of the human life in the virtual spaces in the post-present day world. Complex social, financial and political procedures cover, get intertwined and make new edges which structure new institutional structures.1 The customary terms, for example, the state and country, are from this point of view thought about recorded developments, which speak to fixing of the previous conditions, which "solidified" into progressively stable structures, both in the inside and global term. Other than other particular highlights, the national language is a significant piece of national, resp. state structures. Correspondence with the regular language in the globalization time.

The normal language works as an apparatus of reasoning and conveying in a specific correspondence network. Language is a piece of culture and is firmly bound to the standards, rules and qualities which are shaped in the given society. Language is one of the most noteworthy indications of ethnos, has impacts on its reconciliation, turns into an image of having a place with an alternate network, subsequently it has an ethnically huge capacity. This capacity grows completely after development of the nationality and country; accordingly, it is normally set apart as broadly agent. Notwithstanding the doing without, language plays out various capacities in the given network and guarantees correspondence in different circles of human activity.

On the other hand, the presence of generally disengaged national dialects is a boundary in powerful correspondence with other correspondence networks. This crash continues extending as globalization advances. On one hand monetary, social and political procedures of the individual networks are coming nearer, homogenizing, then again the essential help apparatus for correspondence between the networks – normal dialects – remain generally enhanced, they don't

Content Analysis of Homepages of Library Websites of the top 10 IITs in India

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Abstract

The **Indian Institutes of Technology (IITs)** are the premier autonomous public technical and research universities located across India, created to be Centres of Excellence for training, research and development in science, engineering and technology in India. Every IITs being centres of Excellence with predefined goals objectives, each one has its own exclusive achievements to boast of. Part of every successful IIT is its well developed library and its very supportive website to assist academics in their training and research endeavour. The Homepages of the websites being the firsthand view of the quality of the website, it is imperative that the Homepage contain a capsule view of the entire website. The study evaluates the content of the Homepages of select library websites of IITs analysing both qualitative and quantitative aspects using a checklist prepared on the basis of previous studies performed. The study compares the content and usability of the various Homepages of the top 10 IIT libraries as ranked by NIRF. A web survey is conducted using a checklist prepared with 60 questions grouped under 9 criteria based on qualitative and quantitative content features offered by IIT library websites in India. The data collected is tabularized and total score per Homepage derived to identify the best among the 10. Most homepages have ignored some important basic components needed in a website homepage. The homepages have not exploited the use of Web 2.0 tools. A platform for co-ordination and development of every website is the need of the hour to devise well developed websites to meet the objectives of the institution and the needs and expectations of its users.

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Urban disease ecology and its spatial variation of Chikungunya in Madurai City, Tamilnadu, India: a geo-medical study

V. Saravanabavan ✉, D. Balaji, C. U. Reshma, S. K. Sheheersha, R. Sudharsan, J. Vimala Vinnarasi, J. Ganesan, R. Rahamath Nisha, S. Eswari & K. Balasubramani

Abstract

Medical Geography today draws on the concepts and techniques of geography, and epitomes the interdisciplinary nature of urban health discipline. Chikungunya is one of the Vector-borne diseases and today it continues to remain an important public health problem in Madurai city. It is a mosquito-borne viral infection caused by the Chikungunya Virus (CHKV). The sudden onset of very high fever along with a rash and severe arthralgia especially in the small joints of hands and toes are the characteristics of the disease. The study area, Madurai is the oldest and second-

largest city in Tamil Nadu situated on the banks of river Vaigai in the south-central part of Tamil Nadu, India. The main objectives were to identify the major disease zones concerning Chikungunya cases and to observe the related urban ecological and environmental conditions. The study also aimed to derive a conceptual framework towards strengthening, control and sustainable development of the urban landscape. The data collected were taken by using the method of stratified Random sampling and a total of 600 samples were collected. Standard score (Z-score) technique was used to describe the relationship between the sets of variables and total conditions of selected urban environmental variables. It includes mapping of the disease using GIS software of Arc GIS. Apart from this, the multi-variant statistical technique, factor analysis is used to find the major associations and interrelationship between Chikungunya and people. The twelve factors rotated by explaining the varimax procedure registered more than 89.83 percent of the total variance. Among these, the first factor alone accounted for 33.52 percent of the total variance and eigenvalue of 21.45 was qualified as the primary factor. Our study concludes that in Madurai city's built-up area, a landscape environment of transmission of Chikungunya epidemics with a high prevalence is noted since it is associated with urban environmental factors.

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FEMALE OPPRESSION IN CHARLOTTE VALE ALLEN'S "MIXED EMOTIONS" AND VAASANTHI'S "MEENDUM NAALAI VARUM" (TOMORROW WILL COME AGAIN): A COMPARATIVE STUDY

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Abstract:

Women face suppression and subjugation since the dawn of civilization. They are considered as weaker sex and are being oppressed just because of their state as women. This paper aims to explicate the oppression of women with reference to Charlotte Vale-Allen's "Mixed Emotions" and Vaasanthy's "Meendum Naalai Varum". A comparative study is an attempt to bring in to lime-light how women are oppressed and how the victims become victors by breaking the barriers.

The word 'Feminism' in literature is certainly not a recent innovation. It has been there since times immemorial. Feminism, which constitutes a major segment of the Contemporary Writing in English, has indigenous roots. The entire concept of Feminism is based on male privilege and women's subordination within a given society. Although it emerged as a political movement in the West, but it needs to be stressed that it does not belong entirely to them, as the idea of 'self' is deeply rooted in one's awareness and being.

Feminism could aptly be termed as 'Womanism'. Since ages, women had been marginalized. Due to the male supremacy and ego they have had an inferior status in the society. Women, who are regarded to be the builders of a good nation, had no voice in the society. They were confined only to fulfill their domestic duties and think about the household matters. They had no say at all in the intellectual matters which were considered to be the exclusive property of men. Marriage and children were the two important factors behind their sole existence. Men did not allow them to make their own identity and existence in the society.

It was assumed that they would not utter anything ever and could be victimized and traumatized easily. One goes back to the story of Adam and Eve, the earlier stated fate becomes very clear, as Satan tries to tempt Eve and not Adam by giving the Forbidden Fruit. Since today, it is Eve only who is held responsible for the Fall of Mankind. In Feminism, the two major issues being dealt with are –'Quest for identity' and 'self'. Examining the concepts and aspects of Feminism, Sushila Singh aptly remarks:

The concept of women is of central importance in the formation of feminist theory. But as a concept, it is radically problematic because it is crowded with the over determination of male supremacy-invoking in every formulation the limit, contrasting others, or meditated self-reflection of culture built on the control of women. Recent theorists resist the universalizing tendency of cultural feminism and highlight the differences between women and between men, in a way that undercuts argument for the existence of an overaching gendered essence. (2)

Literature is sometimes born out of suppression and oppression. Marginalization is the social cause of becoming, of being made marginal. Being marginalized refers to being separated from the rest of the society and forced to occupy the fringes and edges and not the centre of them. Though marginalized people are a part of the society, they are assigned a very insignificant part. It can be understood in four levels: 1) class 2) race 3) gender 4) caste. For a man from a tiny grain of sand to the largest mountain- everything is secret. They feel that they are living saints are evergreen trees, but for a woman it is entirely different.

This paper attempt to explicate the female oppression with reference to Charlotte Vale Allen's *Mixed Emotions* and Vaasanthi's *Meendum Naalai Varum* where one could find the female protagonists though belong to various culture, and cultural and socio-political grounds, they try to liberate themselves from the shackle of oppressions. A study of these novels gives a vivid picture that oppression of women is apparent in all society but in various forms. The course of this paper is

Research Article

Studies On Impact Of Heavy Metals On Tilapia (*Oreochromis niloticus*) With Reference To Haematological Parameter

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ARTICLE INFO	ABSTRACT
	Heavy metals are ubiquitous in the biosphere, where they occur as part of the natural background of Chemicals, Anthropogenic activities have also introduced substantial amounts of them into the environment by mobilization from their natural insoluble deposits or environmental sinks. Heavy metals are wide spread pollutants of great concern as they are non-degradable and thus persistent. Haematology indicates have different sensitivities of various environmental factors and chemicals In fish, changes in these parameters and their peculiarities depend upon the concentrations of heavy metals and the duration of exposure. The alterations in the hematologic indices of freshwater fish exposed to Cr(VI) are well documented, and the metal is reported to induce a decrease in most blood parameters investigated. Hexavalent chromium compounds are carcinogenic and are used in chromium planting cement and paint production industries, presenting high potential for contamination of aquatic environment. Soluble chromium is

extremely pernicious and shows the mutagenic effects, due to strong oxidizing nature. The weight reduction in the spleen of Tilapia (*Oreochromis niloticus*) due to decrease of lymphocyte and leukocyte counts. Haematological parameters examined PCV, haemoglobin, TEC, TLC and ESR which all are decreased due to proportional to the increase in the Portland cement powder in solution.

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Original Research Paper

Man...

ARTIFICIAL INTELLIGENCE IN MONEY LAUNDERING IN BANKS – A
APPROACH

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| Dr. S. Rajarajeswari* | Asst. Prof & Head, MBA Sri Meenakshi Govt Arts college for Madurai. *Corresponding Author |

ABSTRACT Banking system plays a major role in development of economy. Due to the advent of digit
banking has undergone a massive shift in its mode of operations. Banks have been alrea
wide variety of products and services, integrated with technology and automation, the most familiar being ATM
around us. New trends artificial intelligence in banking sectors are gaining momentum at a fast pace as it reduc
error and increases the efficiency of operations of the banks. At the same time, this digital technology has pave
positive and negative impact on operations of the banks. One such activity is money laundering. such phe
occupied a significant position in the global policy agenda, in addition to other issues such as international
worthwhile to be mentioned that money laundering operations form a heavy burden on different countries in the w
their turn are looking for the best means to fight and limit them. It is well known that banks are one of the most imp
of money laundering and its fighting at the same time, since most of money laundering is made through banks,
them perfectly suitable means to do such operations. Artificial intelligence has been deployed by banks to
operations. This study emphasis on application of artificial intelligence in money laundering in banks and it
controlling the operations of Banks.

INTRODUCTION

Many jurisdictions have set up sophisticated
other monitoring systems to enable law enforce
detect suspicious transactions or activities, and
up international cooperative arrangements
other in these endeavors. The United Nations (
and Crime (UNODC)2009 estimates that the "an
laundered globally in one year is 2–5% of
$800bn – $2tn in current US dollars"[2].

In a number of legal and regulatory systems, th
laundering" has become conflated with o
financial and business crime, and is sometin
generally to include misuse of the financial sy

An Integrated Vendor - Buyer Inventory Model with Ordering Cost Reduction, Exponential Lead Time Crashing Cost and Rework

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Abstract— **In this paper, we study a continuous review inventory model. This study focuses on an integrated vendor-buyer supply chain model where the lead-time and ordering cost reduction act dependently. The lead time demand of a product follows a normal distribution. The manufacturing process is imperfect. During production run time, a certain percentage of defective products are produced, which are immediately reworked. Lead time and setup cost are taken into consideration. An exponential lead time crashing cost is assumed to reduce the lead time. The objective of this study is to extend Huang at al. (2010b) model by adopting two different (linear and logarithmic) types of ordering cost reductions act dependent on lead time. In both cases, we develop effective solution procedures for finding the optimal solution. Ordering cost reduction is the main aspect of the proposed model. This article develops an integrated inventory model to determine the optimal inventory policy under conditions of ordering cost reduction, exponential lead time crashing cost, rework and permissible delay in payments and shows that the total annual cost function possesses some kinds of convexities. Finally, a numerical example is presented to illustrate the solution procedure.**

Keywords— **Supply chain management, integrated inventory model, lead time crashing cost, ordering cost reduction, rework**

I. INTRODUCTION

The integration between vendor and buyer for refining the operation of inventory control has received a great deal of consideration and the integrated approach has been scrutinized for years. Goyal (1976) is among the first who examined an integrated inventory model for a single-vendor single-buyer system. The context he projected has encouraged many researchers to present diverse types of integrated inventory system. Banerjee (1986) developed a joint economic lot size model for purchaser and vendor. Related review work can be found in Ben-Daya and Raouf (1994), Abdul-Jalbar et al. (2007) and Hill (1997) and Ben-Daya and Hariga (2003) studied the lead time reduction in a stochastic inventory system with learning consideration. Annadurai and Uthayakumar (2010a) presented a controlling setup cost in (Q, r, L) inventory model with defective items. Tsao and Sheen (2008) adopted permissible delay in payments regarding dynamic pricing, promotion and replenishment policies for a deteriorating item. Chen and Kang (2007) developed an integrated vendor-buyer co-operative inventory models with variant permissible delay in payments.

Uthayakumar and Priyan (2013) adopted permissible delay in payments in the two-echelon inventory system with controllable setup and lead time under service level constraint. Affisco et al. (2002) presented a quality improvement and setup reduction in the joint economic lot size model. Uthayakumar and Rameswari (2013) presented a supply chain model with variable lead time under credit policy. Billington (1987) presented an EPQ model with the setup cost parameter replaced by a function of capital expenditure. Vijayashree and Uthayakumar (2015) developed an integrated inventory model with controllable lead time involving investment for quality improvement in supply chain system. Das Roy et al. (2014) adopted stochastic demand, backlogging and rework in an economic production lot size model for defective items. Vijayashree and Uthayakumar (2016a) proposed a two-echelon supply chain inventory model with controllable lead time. Also, Vijayashree and Uthayakumar (2016b) extended an inventory models involving lead time crashing cost as an exponential function.

Through the Japanese experience of using just in time (JIT) production, the advantages associated with efforts to reduce the setup cost can be clearly perceived. In the inventory literature, Yang and Pan (2004) proposed an integrated inventory model involving deterministic variable lead time and quality improvement investment. Das Roy et al. (2012) developed an integrated producer-buyer relationship in the environment of EMQ and JIT production system. Chen et al. (2001) is among the first who framed the concept of inter-dependent reduction policy of lead time and ordering cost. Ouyang et al. (2005) considered the inter-dependent reductions of lead time and ordering cost in periodic review inventory model with backorder price discount. Ouyang et al. (1999) presented the inter-dependent reductions of lead time and ordering cost in continuous review inventory model with partial backorder. Vijayashree and Uthayakumar (2017) initiated the notion of inter-dependent reduction policy of lead time and ordering cost in supply chain framework and estimate the optimal values of lead time, order quantity and the number of deliveries.

RESEARCH ARTICLE

Comprehensive Study on Prime Combination Labeling of Graphs

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ABSTRACT

A graph labeling is an assignment of real values to the vertices or edges, or both, subject to certain conditions. Labeled graphs are becoming an increasingly useful family of mathematical models for a broad range of applications. The concept of labeling is spread into several types such as prime labeling and combination labeling. In this paper we study prime labeling and combination labeling of graphs. We investigate some classes of graphs which admit prime combination labeling. Finally we discuss some of the related properties in detail.

Keywords: Prime labeling, combination labeling, prime combination labeling, path, cycle, star, Olive tree.

INTRODUCTION

The field of Graph Theory plays an important role in various areas of pure and applied sciences. Graph labeling of a graph G is an assignment of real numbers either to the vertices or edges or both subject to certain conditions. Graph labeling is a very powerful tool that eventually makes things in different fields very easy to be handled in mathematical way. Nowadays graph labeling has much attention from different brilliant researches in Graph Theory which has rigorous applications in many disciplines such as communication networks, coding theory, optimal circuits layouts, astronomy, radar and graph decomposition problems. Graph labelings were first introduced in the mid sixties. A labeling or valuation or numbering of a graph is an assignment of real values or subsets of a set to the vertices (a vertex labeling), or an assignment of the labels to the edges (an edge labeling), or an assignment of the labels to the combined set of vertices and edges of the graph (a total labeling). Graph labelings were first introduced Rosa [1] in 1967 and he called a function f a β-valuation of a graph G with q edges if f is an injection from the

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Optimization of Fuzzy Inventory Model with Deterioration Using Non Linear Programming Methods

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Abstract

This paper presents an integrated inventory model with deterioration rate. The deterioration rate is playing a vital role in inventory systems. Here, we determine the minimize the total cost and maximize the optimum order time interval using non linear programming method, first we optimized the inventory model using fuzzy geometric programming method; secondly we apply the Lagrangian method for optimization. In both the methods, we use heptagonal fuzzy number for fuzzification and Pascal's Triangular Graded Mean for defuzzification, Finally, numerical examples, comparative study, sensitivity analysis, and graph are illustrated

Keywords: Geometric programming, Lagrangian method, Pascal's Triangular Graded Mean Method.

1. Introduction

An inventory management modeling exercise, demand can be represented as either deterministic or stochastic. In earlier period the uncertainties of inventory models are treated as randomness and are handled by using probability theory. Ya Yanga,c, Huihui Chib, Wei Zhoub,d, Tijun Fana, Selwyn Piramuthue[1],developed Deterioration control decision support for perishable inventory management systems .

L.A. Zadeh,[2] ,introduced fuzzy sets ,operations and applications, Chen and Wang[11] used trapezoidal fuzzy number to fuzzify the order cost, A.Mohammed Shapique[3],derived , Arithmetic Operations on heptagonal fuzzy numbers ,

Many Researches solved Integrated inventory models by Non linear programming methods. Peterson E. L, Duffin R. J,Zener C. M[6] (1967) is discovered and developed the Geometric Programming Theory and Application, Klain and Jung [7] derived single item inventory problems using geometric problems.K.Kalaiarasi,M.Sumathi,M.Sabina Begum [8],Optimized the a inventory model Using Fuzzy Geometric Programming method .

Chen's [8] function principle is proposed for arithmetic operation of fuzzy number and Lagrangian method is used for optimization. Graded mean integration is used for defuzzifying the annual integrated total cost for EPQ.

In this paper, the Mathematical model is formulated in crisp and fuzzy environment .A numerical example is encapsulating the solution in crisp and fuzzy environment. we analyse the results. Finally, we conclude this result.

Article

Solving a multi product single machine EPQ inventory model with GP mode: By using python

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Abstract

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No full-text av

Solutions to Fuzzy Inventory Model with Fuzzy Demand Rate Using Heptagonal Fuzzy Numbers

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Abstract

The objective of this article focuses a solution to fuzzy inventory model with fuzzy demand rate. Mathematical model has been described for finding the cycle length and total inventory cost in both crisp and fuzzy environments. Robust ranking is used to defuzzify the total cost function and this model is solved by using GP technique and Kuhn Tucker method. Next, comparative analysis between GP technique and Kuhn Tucker method. Additionally, a numerical examples and sensitivity analysis are given to the proposed model.

Keywords: Total cost, GP technique, Kuhn-tucker condition, Robust's Ranking defuzzification.

1. Introduction

In general, the analytic complexity of inventory models depends on whether the demand for an item is deterministic or probabilistic. In real life, demand is usually probabilistic, but in some cases the simpler deterministic approximation may be acceptable. Within either category, the demand may or may not vary with time .[3] Burwell, T. H., Dave, D. S., Fitzpatrick, K. E., & Roy, M. R. (1997) investigated an Economic lot size model for price-dependent demand under quantity and freight discounts. The Kuhn tucker conditions provide the most unifying theory for all non linear programming problems. The main contribution of this model is the development of the general Kuhn tucker necessary conditions for determining the stationary points. [5] MangasarianO.L, [6] McCormick G.P solved nonlinear Programming. [9] Yang J H, Cao B Y (2005) presented Geometric programming with fuzzy relation equation constraints. [4] Cao B Y (1993) describes an extended fuzzy geometric programming. The basic experiment towards concepts of fuzziness was made by zadeh [10]. Several researchers have carried out examine on several fuzzy numbers. [13] Zimmermann H.J, proposed results obtained by Fuzzy set theory and its applications.

This paper is standardized as follows. Section 2 contains the notations and arithmetic operations used for this model. The G.P technique development is formulated both crisp and fuzzy set in Section 3. A Section 4 describes the solution procedure for Kuhn tucker condition both crisp and fuzzy set. Numerical examples, sensitivity analysis and graphs are provided in Section 5 related to our models. Finally, conclusion is included in section 6.

RESEARCH ARTICLE

Information Systems Natural Language Processing: A Survey of Current Research Trends

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ABSTRACT

Text classification is one of NLP's many applications. The data for this study comes from the Automatic Speech Recognition (ASR) model, and it is used to construct a multi-label classification model for tagging plain text. The data gathering method, on the other hand, is carried out utilizing automatic speech recognition technologies (ASR). The project's main goal is to create an efficient model that correctly guesses the tags for plain text received with an accuracy of 84 percent. By examining all of them, it was discovered that supervised learning techniques such as Naive Byes and Support Vector Machine (SVM) performed better for Text Classification.

Keywords: NLP, ML, AI, Deep learning, chat bots

INTRODUCTION

Natural Language Processing (NLP) is in high demand in the era of knowledge, with a wide range of applications. Previously, NLP only dealt with data that was static. In today's world, NLP is doing a lot with corpora, lexicon databases, and pattern reformation. NLP tools grow increasingly precise and efficient as Deep Learning (DL) methods detect artificial Neural Networks (NN) as nonlinear processes, resulting in a debacle. The importance of the Multi-Layer Neural Network in NLP is increasing due to its capabilities, which include standard speed and resolute output. Data hierarchical designs operate recurrent processing layers to learn and manage many practices with this arrangement of DL approaches. This paper continues to strive for a review of the tools and essential methodology in order to offer a clear grasp of the relationship between NLP and DL in order to properly understand in the training. Part of speech tagging (POST), Morphological Analysis, Named Entity Recognition (NER), Semantic Role Labeling

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Ethnic Mosaic In The Select Novels Of Bharathi Mukherjee

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Abstract:

New cultures, nations, and races have long been an aspect of American history. As a consequence, the diverse experience of immigration pervades all parts of American society, including writing. In this setting, the boundaries of the American literary tradition have been stretched. The increasing tide of globalisation has reshaped the landscape of modern literature; writing is now transcending national and cultural barriers as newly emerging writers articulate the many perspectives of those long deemed subaltern. A new generation of South Asian female authors has started to make their own stamp on the world of novels, riding the crest of this new literary wave. Bharathi Mukherjee's depiction of the place of an Indian-American lady in New York in the 1970s exposes a central but relatively stable position within the immigrant experience. Bharathi Mukherjee depicts the expectations placed on women as providers of continuity and social cohesion through marriage, motherhood, and their support of the traditional patriarchal family, demonstrating how the very importance of women's roles within the family and community makes it less acceptable, if not impossible, for women to disrupt the patriarchal family, bounds of their own social and psychological environments. In the case of Dimple, her location within the immigrant experience makes her more unique and vulnerable to changes and constraints in family, class, and gender structures.

Keywords: Globalisation, Landscape, Subaltern, Experience.

Introduction

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WISDOM AND COMPASSION IN THE NOVELS BY CHITRABANERJEE DIVAKARUNI

Abstract

In a variety of her writings, Indian-born Chitra Banerjee Divakaruni who currently resides in Houston, Texas, provides new perspectives to contemporary women's literature in the United States. Positioned at the interface of various cultures, Divakaruni draws from her Bengali heritage to combine history, myth and magic, together with the respect for diversity that underscores ethics as the foundation of human interactions. Among Divakaruni's novels, *The Mistress of Spices, The Palace of Illusions, The Brotherhood of the Conch* trilogy and *One Amazing Thing* all propose new paradigms of wisdom and compassion that may bring about a better understanding among all.

Keywords: Chitra Banerjee Divakaruni, rewriting of Indian tradition, ethics, wisdom, compassion.

Introduction

Indian-born Chitra Banerjee Divakaruni brought new perspectives to contemporary women's writings in the United States with a series of highly praised novels and short stories, after she was first honoured as a poet. Positioned at the interface of various cultures—originally from Kolkata and now residing in Houston, Texas—Divakaruni is herself the embodiment of the themes prevalent in her writings, or, as she states on her personal website, those of "women, immigration, the South Asian experience, history, myth, magic and celebrating diversity." Her literature allows for a variety of readings such as Feminism, Transnationalism and Multiculturalism, with notions of exile, postcolonialism, andhybridity

mixing with myth and magic situated at the very core of Divakaruni's numerous narratives that would not exist without these dimensions. While most of Western researchers of Divakaruni's works tend to privilege the new global dimensions in Divakaruni's work such as they appeal to contemporary criticism, the spiritual aspects based on the writer's Indian heritage continue to be somewhat obfuscated, foreign, hard to embrace and difficult to grasp, especially when dealt with in academic settings.

Chitra Divakaruni's originality, literary value and her importance for posterity nevertheless rise above the mere connection to her heritage and to the issues pertaining to (South Asian) women living in a new environment. Rather, Divakaruni's literature represents

Pluralism in the Select Novels of Bharathi Mukherjee

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Abstract:

Identity development for diasporic South Asian women is influenced by a variety of elements, both individual and societal, personal and communal. As a consequence of living between the push and pull of competing cultural pressures, these women experience an identity crisis. This new identity does not require the abandonment of one culture in order to appropriate another, but rather provides for the potential of owning modified components of both cultures at the same time. The lives of Indian immigrant women are not one-dimensional depictions of befuddled traditional ladies adrift in the United States. Their experiences are not simply linear conversions from Indian to modern western civilization. Indian women's lives and perspectives differ greatly, often along with class and traditional lines. Notably, a few women are ready to discard cultural customs for American social patterns and ideals outright. Rather, the sense prevailed, and they were confronted with the difficulty of reframing their traditions and duties in the context of migration. Identity is not so much the process of selecting between cultures as it is the ability to reinterpret the language of cultural practises and conventions to match one's own experience. As a result, diasporic Indian identity becomes unclear, with self-perception shifting as one's opinions on the surrounding environment and emerging culture change.

Keywords: Identity, Culture, Class, Women

Identity formation appears as a constant process in Bharati Mukherjee's Desirable Daughters, continuously altered and never fully completed. Tara, the female protagonist, was born and reared in Calcutta but went to San Francisco at the age of nineteen when her parents arranged for her to marry Bishwapriya Chatterjee, an Indian young man studying computer science at Stanford University. Tara quickly embraces American culture, seizing the chances it provides and integrating as best she can into the new society around her. Tara and Bish had one kid, Rabindranath, before divorcing yet retaining a strong connection. Tara also maintains strong connections with her two older sisters, Padma (nicknamed "Didi") and Parvati (the former married and living in Montclair, New Jersey, and the latter in Bombay with her husband and two children). Despite their separation, the sisters (all born on the same day, but three years apart) interact often. Both Didi and Parvati remain Tara's ties to a history she has started to unravel and forget.

The mystery starts when a young man called Christopher Dey, who claims to be the illegitimate son of Tara's sister Didi by her old boyfriend, a Bengali Christian named Ronald Dey, pays Tara a visit at her house in San Francisco. Tara is taken aback by this claim, as she does not think her sister would have had a kid during her adolescence in India. Christopher, on the other hand, is adamant, and tells Tara facts that only Didi's genuine son would know. When Tara confronts her sisters about her concerns, Padma denies it, and Didi is irritated. Tara's concern eventually leads her to contact the police in order to learn the actual identity of Christopher Dey. Tara and her partner Andy are initially apprehensive about the ramifications of studying the past, since it has the potential to rule their whole present. Andy is concerned that he may injure himself by attempting to lift every boulder and throw open every door. It's healthy for him to find his origins, but not if they come back to strangle him. But Tara persists in her search, and as the mystery develops, Tara is forced to confront her family, her history, and a society she has separated herself from, culminating in a confrontation between ancient patterns of thinking and newly generated forms of awareness. She discovers that she is made up of numerous selves, each with their own mind and impulses. Tara sees herself through the ever-shifting prism of culture, her identity and awareness depending on whether she accepts or rejects specific components of both Lidian and American society. Tara learns to realise that she will never be simply American or Lidian, but rather distributed across both categories of identity as she develops new identities throughout her life. Tara is the most proud of her individuality among the characters in the other literature examined. Tara does not battle her diversity, but rather accepts it as a part of her evolving identity.

Bharati Mukherjee has long been famous for her characters as well as her graceful, evocative words. Her characters are inspired by historical conventions and traditions, yet they are also firmly rooted in modern times. Tara Chatterjee, the story's narrator, is a modern literary figure, a twenty-first-century pioneer entrenched in the India of her ancestors, with its ghosts, visions, and rituals that guide her future as much as they have moulded her past. The author's goal, presumably, is to demonstrate the impact of history on people, and to demonstrate the patterns of love, betrayal, and redemption that recur from generation to generation. The argument Ms. Mukherjee wishes to convey contradicts the ones she has made in her previous works. This time, she believes that the opportunity to start a new life afforded by America will always be limited by family imperatives, religious and cultural stereotypes, and more primitive underground forces referred to as destiny by her characters.Ms. Mukherjee's plotting skills have never been

Unveiling the Purdah: A Feminist Reading of Imtiaz Dharker's *Purdah- I & Purdah- II*

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Research Guide

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Abstract: Feminism talks about gender inequalities in the social world. It focuses on the plight of women in patriarchal society. Today women have an equal share of social responsibility. Feminist writers bring out the issues of women. Imtiaz Dharker is one among them. Her Perspective is wider and deeper and extends its horizon to study the problems of other people in a sympathetic way. Dharker has written seven books of poetry *Purdah* (1989), *Postcards from God* (1997), *I speak for the Devil* (2001), *The Terrorist at My Table* (2006), *Leaving Fingerprints* (2009), *Over the Moon* (2014) and *Luck is the Hook* (2018). *Purdah – I* and *Purdah – II* are taken for study. These poems illustrate a Muslim woman's life in various aspects. Dharker explores how women are oppressed by the culture of purdah.

Key Words: Imtiaz Dharker, Feminist reading, Concept of purdah, Condition of Woman, Poetess' view

Feminist literary texts question the current social assumptions which depict women as being subjective, prejudiced and one-sided. They capture the depressing condition of women, implicitly suggesting ways and means for resolving their problems. They plead for a kind of literature which would be free from the biased portraits of individuals because of race, class and gender. Irrespective of the ideologies about women found in religious scriptures, practically speaking all women have been oppressed and treated as the other in all societies at all ages.

Imtiaz Dharker born in Pakistan, living in Glasgow is also adopted in the circle of Indian English poetry as she had married an Indian Anil Dharker and begot Ayesha Dharker. She started her poetic career with *Purdah and Other Poems (1989)* in Indian English poetry. Her first poem *Purdah-1* portrays the oppression against women by the name of culture and religion. Wearing purdah is a religious practice in Muslim culture to cover a skin of women from the evil sight of men. The religion advocates a woman to

Diversity of Butterfly Species in Selected Sites of Dindigul, Tamil Nadu

P. Sathiya Bama

C A R A S

Diversity of Butterfly Species in Selected Sites of Dindigul, Tamil Nadu

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A B S T R A C T

Butterflies are the most beautiful insects on the earth and are recognized for their splendour, attractiveness and graceful flight. They are good pollinators impacting good amount of benefits to humankind and ecosystem. Considering the importance of this species, the diversity of butterfly fauna in Dindigul, Tamil Nadu was documented. The study was carried out in three different study areas of different ecosystems at Dindigul. Field observation was carried out between September 2020 to March 2021. The study revealed a total of 40 species of butterflies belonging to 29 genera, grouped under four families and 9 sub families were recorded. Some species namely *Danaus chrysippus*, *Acraea violae*, *Catopsilian pomona*, *Euploea core*, *Pachliopta aristolochiae*, *Papilio polymnestor*, *Appias albino* and *Zizula hylax* were observed regularly and very common (VC) in occurrence. Likewise, 6 species *Euploea klugii*, *Phalanta phalantha*, *Vaenessa cardui*, *Colotis danae*, *Chilades lajus* and *Spindasis vulvanus* were observed as rare occurrence species (RO). The percentage of occurrence was found to be high in the month of November, December and January on par with plant productivity and flowers bloom. The distribution might also be associated with specialties in the floral composition of plants in a particular habitat. Many of the butterfly species are strictly seasonal with less population and they are good indicators in terms of anthropogenic disturbance, poor vegetation and habitat degradation.

Key words: Butterflies, Species, diversity, Occurrence, Habitat, Vegetation

Biodiversity is the variety of life describing the number and variability in relation to ecosystem in which they occur. Insects comprise more than the world's known animal species [1] of which the second largest and more diverse order is the Lepidoptera of class Insecta [2]. Butterflies are one of the most amazing and magnificent elements of bio-diversity. They are most beautiful and attractive than most other insects and have fascinated human imagination and creativity. Their landing with graceful take off give pleasure to everyone [3]. Compared to other groups of insects, their appealing-coloured body with beautiful wings and eyespots have attracted biologists and scientists to carry on research and study on its diversity. In India there are about 1500 butterfly species which is about 9% of the total butterfly species of the world. Out of these about 500 species are reported from the western Himalayan region. They are taxonomically well studied group, which have received a reasonable amount of attention throughout the world [4].

Butterflies can be used us surrogate to assess the conservation threat to the biodiversity. The population of butterflies in a particular area reflects the luxuriant plant growth with healthy environment. A number of flowering plants and fruits depend on this species for reproduction and propagation. Besides being good pollinators, butterflies extend their role as pests, predators and weed killers too. These species are highly sensitive to habitat disturbances which are used as an indicator of environmental quality [5]. Butterfly community assembly and the factors which influence it, have long been a topic of interest to ecologists and conservationists [6]. In Tamil Nadu, the butterfly fauna have been studied in few areas. Since no biodiversity study was carried out in Dindigul adjoining areas, I preferred to carry out a survey on butterfly in Dindigul. The present investigation reveals the abundance of butterfly, its diversity, taxonomy and seasonal richness in the study areas of varied vegetative growth.

MATERIALS AND METHODS

The Dindigul district consists of 7 blocks and two blocks are noticed as driest parts. The average annual rainfall over the district varies from about 700 mm to about 1600 mm. The location is situated at 10.35°N latitude and 77.95°E longitude with an average elevation of 265m (869

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