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On

Impact of Globalization on Sustainable Development

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Antecedents of Purchase Decision Process in Baby Care Products – Empirical Evidence in Chennai

Mrs.M.Jackulin[1], Dr. K. Sethuraman[2]
[1]Assistant professor, Department of Business Administration St. Thomas college of arts and science
[2]Assistant Professor , Department of Business Administration Annamalai Univerity
Email- Jackulinjas431@gmail.com
Email- sethu.kalian@gmail.com

Abstract

Global retail market has been one of India's favourite spot, as it has reached the top in terms of market potential along with medium economic and political risk. China and Brazil are the performers in retail market getting positioned with first two ranks and India has got the position 3 in this context. In view of the high potential, India is at par to the global players due to its growth potential in particular in the baby care segments. The present article focuses on the antecedents which affect purchase decision of customers in baby care product segment with special focus to Chennai. The study adopted survey method by way of questionnaire to 97 customers who use baby care products. The collected data was analysed using SPSS v 24.0 by applying statistical tools such as factor analysis and rank correlation. The research concluded that quality, price, uniqueness, service availability, buyer's affordability are the key factors contributing to the purchase decision making process of an individual.

Keywords : Purchase Behaviour, Quality, Service Availability, Buyer's Affordability

Introduction :

Liberalization has paved way to multiple players in the retail industry in India which has ensured to gain momentum in the sector. Retail industry contributes for 10 percent of nation's GDP and 8 % of job opportunities. Retail space has made India to position itself as rank 5 worldwide. Baby care is a segment which has wide possible growth in country like India due to its increased population. The prediction in terms of revenue percentage of CAGR is aroung 24 % over the period 2020 – 2025. Baby care products can be segmented in various dimensions such as food, apparel, accessories, toys, cosmetics, etc. Baby care market is an avenue for retailers to trigger the consumers with disposable income group who would prefer to purchase luxury items, which has been an attraction for global retail targets as it is an untapped market with high economic potential in India the reason being the country has the highest population of children in the age group 0 to 3. The present study is an attempt to identify niche market for baby care prdocuts in terms of purchase decision focusing in Chennai region. The research is an attempt to grasp the modus operandi of the strategy of the local players in retail sector to ensure sustenance in baby care segment. The research would create avenues to explore markets to be opened to tap the untapped potentials especially in the semi-urban markets. The local retail players are not able to explore the avenues in developing economies like Chennai unlike developed cities in USA and UK. The study would enhance the retailers to learn and explore opportunities from the developed countries and hence contribute to the GDP of the nation. The scope of the present study is to focus on the baby care market which is termed as the most profitable one as it has been in the boom in the last couple of decades.

Review Of Literature :

Aydin et al (2014) concentrated on both price and quantity of baby care products. The study indicated that it is crucial for both manufacturers and retailers to ensure that the competitive effectiveness of products remains high. According to consumer preferences, producers must act on production, pricing, promotion, and distribution. Dealers are responsible for promotion and distribution in their respective regions. Regular market study will assist in identifying consumer preferences and adjusting production, distribution, etc. accordingly. For establishing and sustaining a brand's image in minds of consumers, consumer-centric marketing is crucial.

According to **Kanchan, Kumar, and Gupta (2015),** consumers have become more opportunistic in recent years. They are receptive to change and actively seek new and improved benefits from online retailers. There is a significant increase in online sales, but for businesses to realise the full potential of this channel, they must have a deeper understanding of their prospective customers, their demands, the reasons to purchase online, and the strategies to convert a physical buyer into an online buyer.

Aswathy.R & Chandrasekar (2019)explained that due to substantial discounts offered to customers, it can be concluded that Internet retailing channels for the promotion of baby care products have grown in

popularity. In the past few years, numerous new marketers have entered this industry through their own internet sites or by establishing themselves on e-commerce websites. After establishing themselves online, few baby care brands have also begun catering to customers' offline by opening a store in order to gain an advantage over competitors and attract more customers. This segment has attracted e playerswho have begun offering a variety of baby care products to their customers. In the past few years, there has been an increase in online sales of child care products. Customers prefer online retailers because of the convenience and time savings.

Nandal et al (2020)found an effective loyalty programme can attract and retain new customers in any market. It has been observed that companies with loyalty programmes enjoy a greater competitive advantage. It aids in establishing lasting, profitable relationships with customers. To effectively implement a loyalty programme, a company must make optimal use of available technology, as an increasing number of customers make purchases digitally.

Yildrim et al. (2021) focused on purchase intention and willingness to pay based on consumer innovativeness, novelty seeking, and trustworthiness by emphasising the direct relationships between the variables within a holistic framework. The research examined the impact of consumer innovativeness, novelty seeking, and trustworthiness on purchase intention and willingness to pay for cosmetics and personal care products in an industry that is constantly evolving and expanding. 407 samples were obtained through convenience sampling. Consumer innovativeness, novelty seeking, and trustworthiness are crucial predictors of purchase intention for cosmetics and personal care products, and consumer innovativeness and trustworthiness influence the formation of willingness to pay for these products.

Debarun Chakraborty et al. (2022) used theory of consumption value to explain consumer behaviour toward BCP. To test the proposed model, information from 878 users of baby care products was gathered. The findings indicate that all consumption values except social values influence brand love for BCP, with emotional value being most influential factor, followed by conditional value. The study confirmed mediating role of purchase intent and moderating role of online risk perceptions and customer engagement in brand loyalty. The study's findings contribute to understanding of consumer behaviour and practice.

Research Question

What are the influencing factors for a customer to purchase baby care products?

Problem Statement

Any business is involved with catering to the needs of the consumer and targeting them for a long term relationship. For this reason, the purchase intention and their purchase behaviour is a venue for the retailers to focus and enhance them to maintain brand loyalty. Meeting the customers' requirement is a problem as there are lot of wavering thoughts in the minds of the customers. Hence, studying the purchase behaviour of BCP is the need of the hour to ensure sustenance in the BCP market.

Research Objectives

To distinguish factors impacting customer purchase decision of BCP.

To evaluate the customers' ranking in terms of the factors impacting purchase decision.

Research Methodology

The present study adopted descriptive method of research with a sample size of 97 residents in Chennai using structured questionnaire. The Buyers' Preference for Baby Care Products was determined using factor analysis and rank correlation. The study factors had reliability score of 0.896 and content validity close to 0.823 for each item of the questionnaire.

Data Analysis

The statistical tool used to reduce the dimensions of the study variables was exploratory factor analysis. Table 1 explained the KMO test of sphericity which was 0.778 showing the sampling adequacy for the present study.

Table 1 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.778
Bartlett's Test of Sphericity	Approx. Chi-Square	3.981E3
	df	96
	Sig.	.000

Table 2 explained the factors which have been extracted based on the factor analysis, wherein the factor loadings more than 0.70 has been considered as a thumb rule.

Item	Factor Loadings
Shop Kind	0.781

Location of the Consumer	0.756
Requirement Match	0.811
Billing Duration	0.799
Service	0.873
Quality	0.792
Variety	0.901
Choice of Product	0.884

Source : Computed Data

Nineteen items were reduced to 8 dimensions which are listed as shop kind, location of the consumer, requirement match, billing duration, service, quality, variety and choice of product. The preference of the customer lies on the quality, service, choice of the product and also if the requirement is matched.

Ranking Analysis :

Table 3 : Rating of Preference of Shop

Statement	Name	Percentage
The shop I prefer to buy BCP	Just Born	14.3
	Indian Babies	11.2
	Kids Zone	9.8
	Smile Baby	8.7
	New Born	7.4
	Infant Zone	6.9

The above table explains the preference of shop by the customers of BCP. Just born is ranked no 1 followed by Indian Babies, Kids Zone, Smile Baby, New Born, Infant Zone. The reasons for the ranking depends on the factors which have been identified through EFA vide table 2.

Table 4 : Ranking of BCP categories

Product Category of BCP	Ranking			
	1	2	3	4
Toys	50.4	49.3	-	-
Accessories	22.5	23.1	27.2	29.1
Food	47	53	-	-
Care	24.3	18.9	31.2	22.4

Table 4 explained that baby toys ranked no 1 followed by baby food products followed by baby care and accessories.

Table 5 Customer Expectation Ranks

Factors	1	2	3	4	5	6	7	8
Cost	23.1	22.3	21.5	20.3	19.8	18.4	17.1	16.3
Proximity	8.9	7.9	6.3	6.1	-	-	-	-
Quality	50	49.7	43.2	-	-	-	-	-
Organic Products	11.2	10.9	9.6	-	-	-	-	-
Service	22	21.6	19.3	19.1	-	-	-	-
Ambience	15.4	14.8	13.2	11.9	10.8	8.7	6.3	-
Variety	8.7	7.4	6.9	5.3	4.9	3.2	3.1	-
Discount	8.9	8.1	7.3	7.2	6.1	6.1	-	-

Table 5 explained that top preference was given to cost and quality followed by service and ambience.

Conclusion & Recommendations

The basic requirements for the BCP providers is to focus on the factors identified based on the present study which would enable them to sustain in the competitive scenario. The providers should plan themselves and procure the products to meet the requirements which would entice them to capture the consumer market. Just born, smile baby, kids zone are few shops which understand the customer requirements and cater to their needs. These outlets follow medical guidelines which facilitate the customers' preference in terms of nurture and maintenance of vaccination schedule as value added service. Location of the shop plays a vital role in the purchase decision process of an individual. The frequency of purchase depends on the venue of the outlet for making hazzle free purchase at any point of time of the day. Price is an added feature which would be attraction for a customer to consider the product for purchase. Discount scheme would attract the buyer. Hence the shop owners are recommended to work on the product pricing strategies by understanding the psychology of the customer in terms of price and work

accordingly. Customer service is a key to ensure optimal turnover in terms of financial avenues. Hence, BC providers are advised to work on the pricing strategy time to time to ensure customer retention, applications of social media platforms and introducing customer loyalty programs.

Summary

The study covers the reasons for the customer to purchase BCP and maintain brand loyalty. Indian retail market consists of middle class families as a majority. In view of this, only if the BC providers focus on the predominant factors the sustainability of the shops in terms of BCP would be ensured. Quality, price and proximity are few factors identified by the study which have to keep in mind of the shop owners to ensure optimal customer satisfaction. The BC providers are suggested to maximise social media to optimise the turnover. The study suffers certain limitations such as time factor and restrictions to Chennai city alone which cannot allow the study to be generalised.

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Geographical Analysis Of Disparity Index Of Scheduled Tribe Population Literacy In Osmanabad District

Dr. Tatipamul R. V
Assistant Professor, Department of Geography S.M.Dnyandeo Mohekar Mahavidyalaya, Kalamb, Dist. - Osmanabad
Email- raghavendra268@gmail.com

Abstract

The present work is based on the disparity index of scheduled tribe population Literacy in Osmanabad district. The Spatio temporal analysis of 1991, 2001 and 2011 Scheduled tribe population disparity index were studied. The level of literacy among male female of Scheduled Tribe population was very low before independence. After Independence the percentage of literacy increased. The tahsil wise study of disparity index of Scheduled population shows variations in values decade by decade.

Introduction

There are many factors affecting on socio economic development. Among them literacy plays vital role in community development. The literacy level was very low in Osmanabad district compared with other district with special reference to Scheduled tribe population. Scheduled tribe population literacy was low compared with overall literacy in the study area. The disparity index applied to find out the level of disparity among the tahsils in the study area with special reference to Scheduled tribe population.

Objectives

The present study is based certain specific objective. To study male female disparity index of literacy of Scheduled Tribe population in the Osmanabad District.

Study area

Osmanabad district is located in Maharashtra state. It is located on east side of Marathwada region. The latitudinal extent of study area is 17^0 35' to 18^0 40' north and longitudinal extend between 75^0 16' to 76^0 40' east. The total area of district is 7512.4sq.km. It is situated about 600 m above mean sea level. Manjra and Terna are major are seasonal river mainly flow in rainy season. Temple of goddess Tuljabhavani at Tuljapur is famous in India. There are eight Tahsil in the district.

Methodology and Data Collection: - The present study is covering entire Osmanabad district. as the study area. Therefore, the analysis is based on secondary data sources. It includes census of India, socio economic abstracts. The data is divided in various categories and processed using disparity index. The comparative approach and disparity index used in is present study. To study disparity in literacy most of the geographer used the disparity index. For the measurement of male and female disparity in literacy, Spheres' disparity index (1974) modified by Kundu and Rao (1983) has been employed.

$DS = \log(X2/X1) + \log [(100-X1)/(100-X2)]$

Kundu and Raos modified disparity index formula as follow

$DS= \log(X2/X1) + \log [(200-X1)/(200-X2)]$

X2 is considered for male and X1 for female literacy rates.

Spatial Analysis of Disparity Index of Scheduled Tribe Population of Osmanabad District

Gender disparity in literacy among Scheduled Tribes was very high compared to general literacy and other Caste. These disparities are very high at National, State and District level. Coming to Osmanabad district disparity index of Scheduled Tribe population was very high. It is because these community far away from main stream of society. This community mostly lives in forest area. They live nomadic life. Table 1.1, 1.2 and 1.3 shows disparity index of Scheduled Tribe population of Osmanabad district. The value of disparity depicted with the help of maps.

Male Female Disparity Index of Scheduled Tribe Population of Osmanabad District (1991-2011)

Scheduled Tribe population was deprived community of Indian society. Education level, social and economic status of Scheduled Tribe was very poor compare to other. After independence various government efforts were taken to improve socio economic condition of Scheduled Tribe community. Presently due to wide spread of education system level of literacy slightly increased among Scheduled Tribe community. Osmanabad district Scheduled Tribe population literacy level increased in last three decade. But still male female disparity index of Scheduled Tribe population was very high. The disparity index of male female has been grouped in to three categories. These are High disparity index, Moderate disparity index and Low disparity index.

High Disparity Index Male Female in Scheduled Tribe As per census 1991 table 1.1 and fig.1.1 show high disparity index of male female in Scheduled Tribe was observed in Kalamb and Paranda tahsil with 0.56 and 0.55 respectively. During the period of 2001 and table 1.2 and fig. 1.2 shows drastic change in scenario due to formation of two new tahsil. The high disparity index of male female in Scheduled Tribe was observed in Washi and Kalamb tahsil with 0.36 and 0.34 in 2001 respectively. In the year 2011 and table 1.3 and fig. 1.3 shows high disparity index of male female of Scheduled Tribe was recorded in Kalamb, Washi and Bhoom tahsil with 0.27, 0.24 and 0.23 respectively. The table 1.1, 1.2 and 1.3 shows continuous reduction in disparity index rate. It is a good indicator of improvement in literacy level.

Moderate Disparity Index of Male Female in Scheduled Tribe

As per census data of 1991 and table 1.1 shows moderate disparity index of male female in Omerga, Tuljapur and Bhoom tahsil with 0.46, 0.43 and 0.43 respectively.

Table 1.1 Male Female Disparity Index of Scheduled Tribe Population of Osmanabad District (1991)

Sr. No	Name of Tahsil	Total	Male	Female	Disparity index
1	Paranda	34.45	50.7	17.11	0.55
2	Bhoom	33.51	46.46	19.86	0.43
3	Kalamb	29.97	44.17	14.48	0.56
4	Osmanabad	43.86	57.58	28.99	0.37
5	Tuljapur	41.99	56.5	25.51	0.43
6	Omerga	43.18	58.85	25.1	0.46
	District total	39.45	54.03	23.43	0.44

(Source:- Socio-economic Abstract of Osmanabad District-1991

Table 1.2 Male Female Disparity Index of Scheduled Tribe Population of Osmanabad District (2001)

Sr. No	Name of Tahsil	Total	Male	Female	Disparity index
1	Paranda	44.02	55.66	31.63	0.31
2	Bhoom	42.03	51.18	32.1	0.25
3	Kalamb	38.79	50.71	26.4	0.34
4	Osmanabad	48.73	57.99	38.2	0.23
5	Tuljapur	51.49	69.92	40.2	0.32
6	Omerga	51.3	64.98	42.77	0.24
7	Washi	36.69	48.6	24.09	0.36
8	Lohara	55.6	65.84	45.23	0.22
	District total	47.37	57.79	36.11	0.26

Source:-Socio-economic Abstract of Osmanabad District-2001

Table 1.3 Male female Disparity Index of Scheduled Tribe Population of Osmanabad District (2011)

Sr. No	Name of tahsil	Total	Male	Female	Disparity index
1	Paranda	68.27	78.14	57.57	0.20
2	Bhoom	64.82	76.18	53.06	0.23
3	Kalamb	65.52	73.3	46.95	0.27
4	Osmanabad	68.61	77.01	59.51	0.16
5	Tuljapur	72.42	81.81	61.64	0.19
6	Omerga	74.57	81.5	67.52	0.13
7	Washi	58.68	70.33	46.95	0.24
8	Lohara	75.86	84.8	66.67	0.16
	District total	68.25	77.38	58.53	0.18

Source:-Socio-economic Abstract of Osmanabad District-2011

In the 2001 census data and table 1.2 shows moderate disparity index of male female in Scheduled Tribe was Tuljapur and Paranda tahsil with 0.32 and 0.31 respectively. As per census data of 2011 and table 1.3 shows moderate disparity index was observed in Paranda and Tuljapur with 0.20 and 0.19 respectively. In the last three decade Tuljapur and Paranda tahsil improved very rapidly. In the 2001 census data and table 1.2 shows moderate disparity index of male female in Scheduled Tribe was Tuljapur and Paranda tahsil with 0.32 and 0.31 respectively.

Low Disparity Index of Male Female in Scheduled Tribe

As per census of 1991 and table 1.1 show low disparity index of male female in Osmanabad tahsil with 0.34. It is the only tahsil show the disparity index rate below 0.40. As per census 2001 and table 1.2 and fig.1.2 recorded low disparity index in Bhoom, Omerga, and Osmanabad and Lohara tahsil with 0.25, 0.24, 0.23 and 0.22 respectively. It is because drastic change in demographic structure. During the period

of 2011 low disparity index of male female in Scheduled Tribe recorded in Osmanabad, Lohara and Omerga with 0.16, 0.16 and 0.13 respectively. The study shows that in 1991, 2001 and 2011 majority of the tahsil falls under high disparity and moderate disparity. Moreover the study shows that apart from a few exceptions, male female disparity ratio in literacy rate is higher am

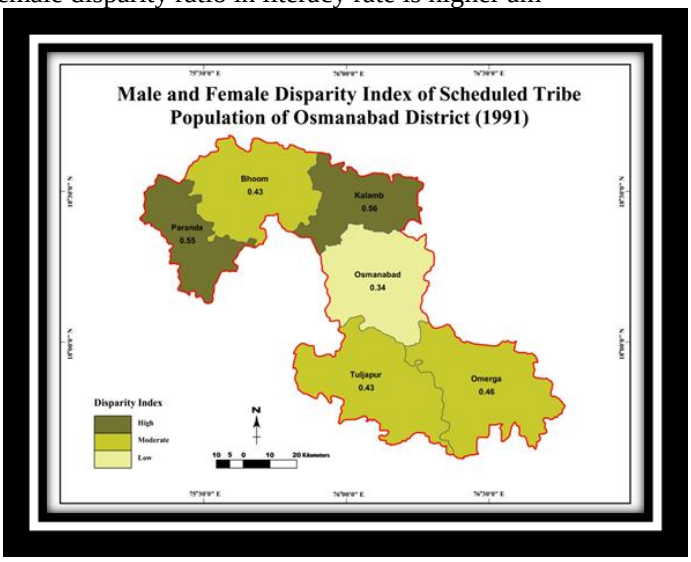

Fig 1.1

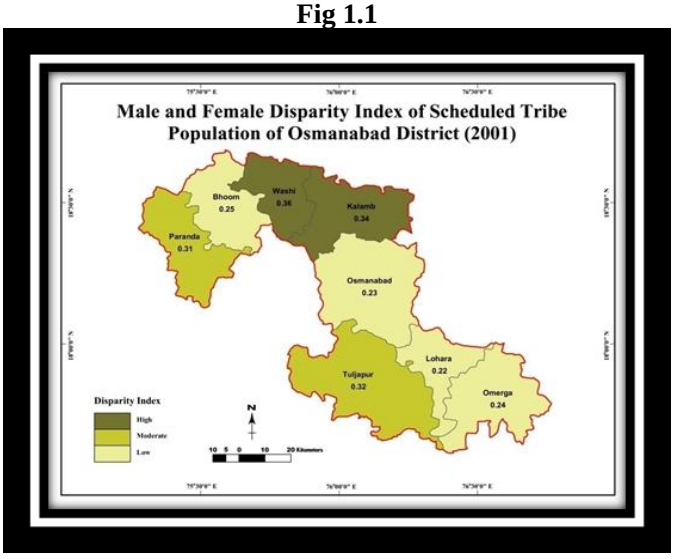

Fig 1.2

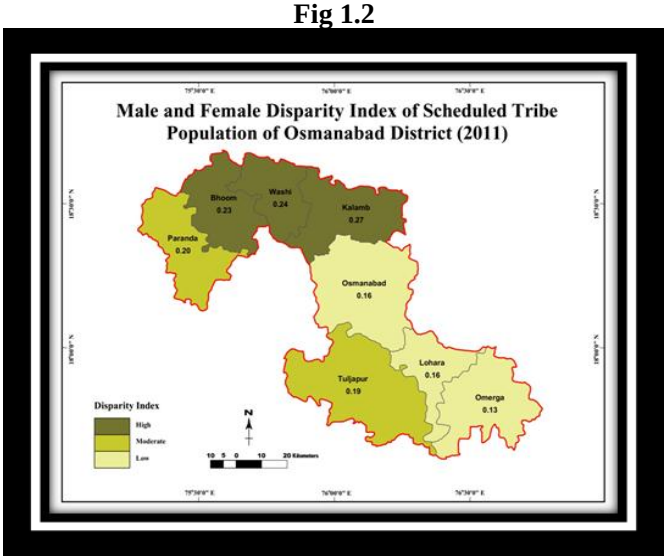

Fig 1.3

Scheduled Tribe population of Osmanabad district. It is due to the female's members of this community socially, economically and educationally backward. Most of the female were engage in household activities, to take care of elders and children's. Major problem faced by Scheduled Tribe population was absence of women teachers of their own community. The gender disparity in literacy among Scheduled Tribe population was high because child marriage, restrictions on girls mobility, poor transport facilities.

Conclusion

The present study explained spatial analysis of Disparity index of Scheduled Tribe population in the study area. The disparity index shows variation in index values. It shows drastic changes in disparity index in last three decade in the study area.

The male female disparity index of Scheduled Tribe population of Osmanabad district was ranges from 0.55 to 0.37 in 1991, 0.36 to 0.22 in 2001 and 0.27to 0.13 in 2011. It shows continuous decreases of disparity index value in the study area.

The high disparity index was observed in Paranda and Kalamb tahsil in 1991, Washi and Kalamb tahsil in 2001 and Bhoom, Kalamb and washi in 2011. The low disparity index was observed Osmanabad tahsil in 1991, Osmanabad, Bhoom, Omerga, Lohara tahsils in 2001 and Osmanabad, Lohara and Omerga tahsil in 2011.

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Government Scholarship Schemes – A Supportive Factor For The Schedule Caste Students For Taking Admission In Engineering Colleges In Maharashtra

Dr. Suresh Deshmukh[1] Sachin Kamble[2]
[1]Ph. D. Guide,Modern College, S. P. College, Pune 411028
[2]Assistant Professor, S. P. College, Pune 411030
Email ID: sach4321a@gmail.com
Email ID: sach4321a@gmail.com

Abstract

Government Scholarship Schemes are the crucial and indispensable part of any college in the process of admissions for any degree specially for the students belong to various types of categories such as Schedule Cast, Schedule Tribe, Other Backward Classes, Nomadic Tribes, Economically Weaker Section, etc. Basically, in the Engineering Colleges students take admission with the goal of achieving higher post in the organisations or to become a successful businessman in the future. But it is very difficult for the students who belongs to the above-mentioned categories to take admission for the professional degrees such as Engineering, Medical, Management, etc. The Government Scholarship Schemes help student to take admission in the better colleges as well as best kind of degrees for their bright career. Government Scholarship Schemes are the bridge for the students to take admissions in the higher level of colleges to get placed in the reputed companies or organisations. The education of the Schedule Caste's students is much depended on the Scholarships. The number of students take advantages of the various types of Scholarships which are made available by the Government, NGO's, etc. through which they always get financial support for their education in order to find out the best college amongst the various colleges. The number of students of Schedule Class has been risen due to Government Scholarship Schemes over the years. Engineering College is like a Gold Mine of the practical knowledge for the students due to which they can find the good opportunities in their life, therefore this research paper includes the Government Scholarship Schemes for the Schedule Caste which is the best supportive factor for taking admissions in the Engineering. This research paper also contains the various schemes of the scholarships for the schedule caste which can help the huge number of candidates to get aware regarding the schemes of scholarship which are helpful to take admission in the reputed Engineering Colleges.

Keywords: Government Scholarship Schemes, Supportive Factor, Admission, Engineering Colleges

Introduction

Achieving degree from an Engineering college improves the standard of the academic qualification of an individual as it upgrades their knowledge base and enhance them to emerge their personality in another manner. Engineering studies focus on the mathematical and scientific approaches to solve the problems. Engineering subject is interesting and ever changing which make the students employable and potential by giving them the knowledge of dealing and handling various activities which include Acoustic Engineering, Aeronautical Engineering, Agriculture, Automobile, Biochemical, Biomedical, Chemical, Civil, Computer, Electronics, Geomatic, Mechanical Engineering, etc. Engineering Colleges have shown the drastic progress in the previous years and have contributed a lot in the development of industrialisation. In the current era, pursuing the professional degree is very expensive which are not affordable for the students who belongs to the Schedule Caste, hence to support the potential students many organisations as well as Government support the students so that no obstacles can restrict their education and encourage them to continue in their journey of career. There are some factors by which students get motivated to take admission in the engineering college which is reputed and successful. There are many factors which are analysed carefully while taking admission for the engineering degrees such as popularity of the college, quality of education, Goodwill of the college, pedagogy and curriculum, how old the college is, well qualified faculties, infrastructure of the college, affiliation, excellent administration, use of advanced technology, high rate of retention of the students till the end of the degrees, facilities and resources and specially the financial aid opportunities and scholarships as these are the factors which affect for the long time. Though the above-mentioned factors are worthwhile for producing the positive result which will be affected in the whole life of the students but the out of these factors, one of the most factors scholarships affects from the very first step of the admission till the end of the degree specially for the Schedule Caste Students. Government Scholarship Schemes are the most necessary factor for students of

schedule caste as well as their parents because it plays a considerable role to choose the degree as well as the college.

Scope of Study

The study is related to the importance of the Government Scholarship Schemes for the Schedule Caste Students while taking admission in engineering colleges for their bright future.

The study comprises the various Government Schemes of the Scholarships for the Schedule Caste Students boosting such students for their career.

Limitation Of Study

1. The study is limited to the Schedule Caste students to take admissions in engineering colleges only.
2. The study is related to only one supportive factor i.e., Government Scholarship Schemes which are effective for taking admission in the engineering college.
3. The study is restricted to the Schedule Caste students in Maharashtra.

Objectives

1. To study the objectives of the various Government Schemes for the Schedule Caste Students.
2. To study how the Government Scholarship Schemes support the schedule caste students to take education in the reputed colleges of the engineering.
3. To make available the information together regarding Government Scholarship Schemes which will be helpful to the schedule caste students.

Research Methodology

This Research Paper is conceptual in nature and purely based on secondary data which has been collected through various articles, journals, various websites of engineering colleges as well as Government which includes the information regarding scholarships in order to know the various schemes and how they are helpful for the students of such society who cannot afford the fees and other expenses of the reputed colleges.

Discussions

Engineering is a profession in the same way like law, medicine, management, etc. The dictionary meaning of profession is "a calling requiring specialised knowledge and often long and intensive academic preparation." The word engineering is one the best branch of knowledge which always try to solve the real problems. Students prefer to take admission in the engineering colleges who are interested to study the optimum use of the scientific principles which are executed to create the machineries, constructing the various items such as buildings, bridges, tunnels, roads, etc., innovating the software, etc. But fees of the engineering college are the most significant factor which matters for the selection of the degree by the students specially who belong to schedule caste, schedule tribes or other categories. There are lacks of students who are intelligent, brilliant in the Maharashtra but due to the financial issues they could not get better education as well as admission for the professional degrees like engineering, management, medical, law, etc. But the students who are from the Minority Communities can get the benefit of the various schemes of the scholarships through which they can get admissions for the professional and technical courses. There are various scholarships are provided by the Government as well as Private Organisations in Maharashtra to students who purse higher education. The Maharashtra Government best offers to the domiciled students in Maharashtra who belongs to schedule caste, schedule tribe, other backward caste, etc.

Government Scholarship Schemes for Engineering Students

In the current era, the pursuing education from the Engineering Colleges is much expensive from the reputed colleges or universities, it can be from one lack to 20 lack or more than it. Many students cannot afford such expensive education; hence they need financial support or assistance and advantageously Government Scholarship Schemes perform as a most supportive factor for taking admission in the engineering colleges for funding during their whole education. The different Departments of Government offers the scholarships at central level as well as state level for pursuing the colleges level studies. The students from the upcoming generation are more talented and advanced in both technical and professional skills hence State Government and Central Government support the student by providing the funds to complete their engineering degrees from reputed colleges. The support from the Government in the form of scholarship contribute to acquire the dream of the students without any financial constraints.

Following is the relevant information regarding Government Scholarship Schemes for Engineering Students for the Minority Communities:

Book Bank Scheme for Schedule Caste Students:

1. This scheme is initiated by the State Government with the association with Social Justice and Special Assistance Department for supporting the schedule caste students.

2. Under this scheme the funds are provided by the Central Government to the students of medical, agriculture and engineering schedule caste students in Maharashtra.
3. This scheme has been merged with the Post-Metric Scholarship for schedule caste students which is provided by the Central Government.
4. This scheme is for the candidates who is the resident of Maharashtra state and pursuing the degrees such as medical, engineering and agriculture.

Merit Cum Means Based Scholarship for Students Belonging to the Minority Community:

1. This scheme is given to students who study in Government or Private Colleges in India.
2. It provides the funds to the technical and professional courses for under graduation as well as post-graduation.

Central Sector Scheme of Scholarship for College and University Students

1. This scholarship is not only for the Schedule Caste students but all the students who have got the percentage above 80% in 12th standard and pursuing a regular course such as Medical and Engineering in a recognized college by the AICTE.
2. The student's family income should not be higher than 8 lakhs annually from all the source.
3. The students can get the benefit of this scheme who are not availing the benefit of any other scholarship schemes.

Aicte Pg (Gate/Gpat) Scholarship

1. To get the benefit of this scheme, candidate should have to obtain a good score in the GATE/GPAT Examination.
2. This scheme is for the students who have taken admission in the 1st year of M. Tech/M.E./M. Pharma/M. Arch. in the institutions which are recognized by the AICTE.
3. In this scheme, student can get Rs. 12,4000 per month for two years or duration of the course whichever is lower.

Top Class Education Scheme for SC Students

1. This scheme has been started in order to provide full financial support and for promoting the higher standard of education amongst the students who belong to the schedule caste.
2. This scholarship is provided till the completion of the degree.
3. Student's family income should not be more than Rs. 8,00,000 per annum from all the sources.
4. Students who have done SSC from Central/State/Municipal Govt. or Govt. aided school such students can get the benefit of this scheme.

PG Scholarship Scheme for SC & ST Students for Pursuing Professional Courses

1. This scheme has been initiated to avail the opportunities for the schedule caste students to complete the post-graduation level studies.
2. This scholarship is given to the schedule caste students who have taken admission in the professional course such as Technical or Engineering.

Some Private Scholarship Schemes

Concord Biotech Limited Scholarship for B. Tech Courses

This is private funded scholarship scheme have been initiated by the Concord Biotech Limited Company.
This scholarship is given to the weaker sections and who are pursuing the engineering degree.

JSW Udaan Scholarship for B. Tech Students

This is also one of the private funded scholarship schemes given to the students who are pursuing degree from technology.
This scholarship is provided to the candidates who live near the plants of JSW and cannot afford the huge fees.
This scheme is not applicable to the children of the employees of the JSW.

Adobe India Women-In-Technology Scholarship

This scholarship is provided to the Indian girls only.
The girl who is studying in the engineering colleges can get the benefit of this scholarship scheme.

Legrand Scholarship

This scholarship is given to the girls who are studying in the engineering.
Funds are provided to the girls till the completion of the degrees.
Rs. 60,000 per annum or 60% of the tuition fees whichever is less is given for the whole period of education.

Objectives of the Government Scholarship Scheme for the Students:

1. To raise the standard of the communities which belong to schedule caste and economically weak candidates who are below poverty line by supporting them in their higher education.

2. To develop the schedule caste students economically, educationally and socially.
3. To support the economically weaker and deserving candidates to make them enable to achieve technical and professional degrees.
4. To promote the quality education amongst the students who are from the SC Category.
5. To help in reduction of major issues such as poverty and illiteracy amongst the schedule caste.
6. To support the candidates in the higher education for betterment of the society.
7. To provide the financial support to the deserving and meritorious candidates who cannot afford the huge fees of the reputed colleges of the engineering.
8. To lightening up the homes of schedule caste who were far away from the quality education.
9. To assist the schedule cast students to get good opportunities to make their career.
10. To encourage the talented and brilliant students to get higher education.

Conclusion

From the above discussion, the conclusion can be drawn from this study that:

1. Government Scholarship Scheme in the Engineering Colleges is always a fantastic factor for resolving the financial issues of the schedule caste students.
2. After completing the degree from Engineering College, a schedule caste student can develop his or her standard of living and can face the trouble and issues confidently.
3. Scholarships always provide a back-end help to get better future for the students.
4. Many scholarships are awarded on the basis of merit as well as income of the family of the candidate.
5. Many reputed companies have initiated to upgrade the future generation by providing them support in the form of scholarship.
6. There is no need to refund the money of the scholarship like education loan, so that they can focus on their career instead of taking tension of repayment of the education loan.
7. Due to scholarships, the financial constraints have been removed for the schedule caste students, hence they can take the benefit of taking admission in the reputed colleges.

Suggestions

1. Students can find the information regarding scholarship schemes for engineering degree offered by the State Government either at the National Scholarship Portal or from the State Scholarship Portal.
2. Students can contact Assistant Commissioner Social Welfare Department in Maharashtra regarding the issues for getting scholarship.
3. Students belongs to schedule caste should take the benefit of the various scholarship made available by the Government as well private organisations.
4. The knowledge regarding various scholarship schemes should be spread amongst the schedule caste students.

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Indian Mythology: A Study of the Feminist Perspective

Asst. Prof. Vaghmare Bhagyashri Tukaram
Department of English, Shikshan Maharshi Dnyandeo Mohekar Mahavidyalaya, Kalamb, Dist.: - Osmanabad 413504 Maharashtra, India.
Email- bhagyshritwaghmare96@gmail.com

Abstract:-

Mythology is a story based on tradition. Some of the origins may be real, while some are purely fictional. But myths are more than just stories, and they serve a deeper purpose in ancient and modern cultures. Myths are sacred stories that explain the experiences of the world and man. It is as relevant to us today as it was in past. The myth of the lost paradise, for example, gives people hope that by living a virtuous life, they can have a better life in the future. The legend of the Golden Age gives people hope that there are great leaders who will improve their lives. The search for a hero is a model for young men and women, as they accept adult responsibilities. Some myths only offer assurances, such as myths that explain natural phenomena as the actions of the gods rather than the uncontrollable phenomena of nature. Thus, mythology is a common theme in Indian literature that is of interest in our daily lives and reading. The first two epics in Indian literature, the Ramayana and the Mahabharata, have the most influential and contradictory traces. These great epics and their numerous stories, sub-narratives and further additional stories set them apart from other mythological series in ancient Indian literature. Indeed, Indian literature has been replaced by a wide variety of mythological characters and their depiction is also consistent with contemporary Indian society. In the Mahabharata, for example, the conflict between the Pandavas and Kauravas or the Cold War, Arjuna to Lord Krishna, or even the infamous and deceptive game of Bhagavad Gita for pure greed, conflict or enmity with each other in the present Indian context. Even in the Ramayana, the lust for kingdom and power and her father's devotion to her father and his father's fearful honorarium, his ambition in the creation and verses of Rama, Sita, Lakshmana or the divine Ravana have increased. Poetic language almost fables and makes itself.

Keywords: - Myth, Mythology, Tradition, Culture, Devotion, Feminism.

Introduction:-

Myth is important for some reason. On the one hand, it forms a major part of everyone's heritage. It is a continuing reminder of who we are and where we come from. Every culture has its legends, folktales and myths – be it in different countries. Just as a hammer is a useful tool in construction, mythology is a useful tool for spiritual development. The question is not whether the myth is true, the question is whether that particular myth is useful to a particular person at a particular stage of their spiritual journey. Equally important is how and in what context the myth is told. Mythologies are descriptive stories, fables, and myths that define cultural beliefs and affirm and affirm the social values of a community and suggest to us what ideal practices and behaviours should be. Mythology is a term that is widely used for the study of myths, stories, beliefs, and worldviews through some of the aspects narrated in oral stories to teach social values and ethics. However, myth is not found in contemporary times, it is a matter of the past of no one has witnessed. These myths have been passed down from generation to generation who do not know the origin of their creation. Myths usually have false, unrealistic, irrational meanings which make the story and the past related to it only false or fictional. But if the myth is fictional, how can it serve the purpose of educating the masses about moral values and ethics? In the 20th century, many researchers commented on the rationality of mythology. Here our knowledge of related myths comes mainly from literary works – epics and lyric poems, plays, history, romance and other prose stories. But it is important to distinguish between mythology, which is a religious and social belief, and the literary nature of that story. Literature is often the late product of civilization. This happens when there is enough time to record and discover the story and enough literacy to appreciate the record. Since this usually happens late in the culture, mythology sometimes happens when the culture is disintegrating. When doubt becomes widespread, it is doubly necessary to record people's myths – to save them from extinction and to create a nucleus from which other cultures can be formed. When original values are threatened, people take care to preserve them in stories. Mythology can be seen as a symbol of culture to some extent, where a living belief is becoming a historical curiosity. This, of course, is not always true. That is often enough in the myths told. Feminism or mythology is not a modern structure. Strong, feminist characters are a feature of Indian mythology. A famous ancient verse brings together quite a fiery bunch. This verse about Panchakanya or

Panchasati advises us to start our day by remembering the five famous "maids" in Indian epics: Ahalya, Draupadi, Kunti, Tara Mandodari, Tatha / Panchakanya Smaranyam Mahapatka Nashka This may mean that one who always remembers the five great women Ahalya, Draupadi, Kunti, Tara and Mandodari - is saved from all kinds of sins and failures. Indeed, this motley "saviour" force is a perfect example of a strong woman, a rebel, although the prestigious pinnacle of the ideal Indian woman always goes to Sita. Yes, a sweet, humble Sita who accepts all patriarchal rules and whims is what all good Indian girls expect for a long, long time. The origin of Indian mythology most of us are familiar with the Ramayana and Mahabharata. So many writers write about Indian mythology, such as Iravati Karve Yoganta-End of An Epoch, The Place of Illusion by Chitra Banerjee Devkaruni, Lanka's Princess by Kavita Kane, Andhyoga by Dharmvir Bharti, The Liberation of Sita by the Volga, The Pregnant King by Devdutt Pattanaik, The Krishna Key by Ashwin Sanghi, etc. Indian mythology is complex and clear. It takes sab to validate our presumptions and enrich our imagination.

Selected Indian Mythological Female Novelists and Their Selected Works:-

Kavita Kane:-

Despite being born in Mumbai and raised in Patna and Delhi, Kavita Kane calls herself Puneri. Having studied and lived in Pune for many years, she feels good about getting married in the city, where she now lives with her husband, Prakash, two teenage daughters, Kimaya and Amiya, a friendly Rottweiler named Dude, and a cat named Babe. A senior journalist with a degree in English Literature and Mass Communication, Kavita is also fond of cinema and theatre. But she admits that writing is her only skill. Karna's wife is his first novel. Author Kavita Kane is a revolutionary force in Indian writing, mainly bringing feminism to the area where it was most needed - mythology. Just a month before the release of her new book, she delighted the audience at the Bangalore Lit Fest with her roles in women in mythology. Her sessions attracted many girls and women. Kane is making an impression. Going back to how she started writing before her first book Karna's wife introduced her to a cult, Kane was a journalist who didn't handle creative writing - not even in a college magazine! Her fondness for mythology was nurtured in her childhood with the main diet of immortal storybooks, *Ramayana* and *Mahabharata*.

"The Karna's Wife: The Outcast's Queen" (2013*)*

Karna, born from the marriage of Kunti and Surya, was abandoned by his mother at birth. He deserves the fate of a prince but is adopted by a lowly charioteer and becomes himself. Uruvi, a Kshatriya princess, chooses her over Arjuna in her swayamvara, and their marriage is of great social contradiction. Uruvi should accept all her love for Karna, and her tremendous intelligence from her family, counselling and guiding her. However, his blind allegiance to Duryodhana, the ultimate cause of his downfall, the ultimate cause of his downfall, is beyond his power to change. Karna's wife, narrated from Uruvi's point of view, unfolds against the backdrop of the epic conflict between the Pandavas and the Kauravas. Lyrical and ingenious, it is a moving story of love against all odds. Karna's Wife: The Queen of The Outcast, the never-ending hero of the Mahabharata. A skilled Kshatriya princess who falls in love with Arjuna and dares to choose 'Sutputra', Uruvi must adapt to the social consequences of her marriage and learn to use her love and intelligence to be accepted by Karna and his family. Although she became his mainstay, counselling and guiding him, his blind allegiance to Duryodhana is beyond her power to change. The story of Uruvi and Karna unfolds against the backdrop of the struggle between the Pandavas and the Kauravas. While the events leading up to the Great War of the Mahabharata are happening, Uruvi is witnessing the fateful turns of Karna; and how it is connected to the divine creation. The Mahabharata, Karna's wife: The Queen of the Outcast, brings the characters to life in all their glory. During the archery competition in Hastinapur, the only princess of the Pukeya kingdom falls in love with Uruvi Karna. Despite having superior archery skills than Arjuna, Karna questioned the birth of his lower caste. Faced with many hardships from her parents and relatives, she finally married Karna on her own. Karna's loyal friendship with Duryodhana was pushing him into darkness. Despite knowing that Duryodhana is wrong, Karna helps him in everything he does, whether it is wrong or right. Various events in the Mahabharata such as the immersion of Draupadi directly affect his quiet life. Uruvi knows that Karna is on the wrong side, he tries to persuade him to choose the right path but fails. She is afraid of losing him in this ignorant war.

'I'm afraid I'm going to lose you forever .....'

She knows what's going wrong but she has no control over it. Uruvi was a wife who loved her husband and stood by him despite knowing the consequences of the war. She was a woman who could try to show her husband the right way. She questioned the people who made Karna live in exile. The feeling of a wife whose husband is becoming a piece of fortune, who gets nothing from the war except the death of her husband. It is a story never seen before. Other well-known characters in the Mahabharata like Bhishma Pitamah, Kunti, Duryodhana, Arjuna, Bhima, and Dronacharya help to develop the story interestingly.

Chitra Banerjee Divakaruni:-

Chitra Banerjee Divakaruni is best known for Mistress of Spices (a shopkeeper who helps customers fulfil their desires by giving them magically coloured spices) and Olinder Girl (a trip across the United States to find out the true identity of the protagonist after 9/11). The Palace of Illusion, a reproduction of the Mahabharata from Draupadi's POV, is one of the best in Indian mythology. Divakaruni's works are widely set in India and the United States and often focus on the experiences of South Asian migrants. Her novels fall into many categories, including literary fiction, historical fiction, myth, and fiction. Chitra Banerjee Divakaruni is an award-winning author and poet. Her themes include Indian experiences, contemporary America, women, immigration, history, myths and the joys and challenges of living in a multicultural world. Her work is well-known throughout the world, as she has appeared in more than 50 magazines, including The Atlantic Monthly and The New Yorker, and has been featured in more than 50 anthologies. Her works have been translated into 29 languages, including Dutch, Hebrew, Hindi and Japanese. Divakaruni also writes for children and young adults. Her novels One Amazing Thing, Oleander Girl, Sister of My Heart and Palace of Illusion are currently in the process of being made into a film.

"The Palace of Illusions" (2008):-

A re-imagining of the world-famous Indian epic, the Mahabharata told from the perspective of an amazing woman. Relating to today's war-torn world, The Palace of Illusion takes us halfway through history, half through myth and half through magic. This novel, told by Panchali, the wife of the legendary Pandava brothers in the Mahabharata, gives us a new meaning to this ancient story. The novel traces the life of Princess Panchali, which begins with her fiery birth, and follows her enthusiastic balancing act as a woman with five husbands betrayed by her father's kingdom. The Panchali's, in their quest to regain their birthright, backed him for years in a fierce civil war involving exile and all the important kings of India. Meanwhile, we never lose the strategic duel with her mother-in-law, her intimate friendship with the mysterious Krishna, or her secret attraction to the mysterious man who is her husband's most dangerous enemy. Panchali is a fiery woman who redefines for us the world of warriors, gods and the constant handling of destiny. Relating to today's war-torn world, The Palace of Illusion takes us back to the period of the Indian epic Mahabharata - a period of half-history, half-myth and complete magic. Divakaruni, the wife of the five Pandava brothers, gives us a rare feminist interpretation of an epic through her narrator Panchali. The novel traces the life of Panchali, which begins with her magical birth as a king's daughter before she acts out her enthusiastic balance as a woman with five husbands betrayed by her father's kingdom. After years of exile and fierce civil war, Panchali sided with his brother in his quest to regain his birthright. Meanwhile, we never lose sight of her mother-in-law's plot to take over her house, her intimate friendship with the mysterious Krishna, or her secret fascination with the mysterious man who is her husband's most dangerous enemy. Panchali is a fiery female voice in a world where warriors, deities and destiny are constantly struggling. Panchali is a princess born of fire. This is how her brother Dhri Hahi was born. They live in a world where divine creatures and magic are common. Panchali grew up in the palace of her father, King Drupada, who wanted to avenge his slave, Drona. When Panchali was young, sage Vyas prophesied that Panchali would become a great and powerful queen by marrying five husbands. However, Vyas claims that Panchali will be the cause of great destruction in her kingdom. Throughout Panchali's life, Lord Krishna acts as Panchali's guide and faithful. When Panchali gets old for marriage, King Drupada organizes a competition for her to find a husband. Karna is a great warrior, who initially passes the archery test of the competition, but Panchali insults him by asking who his parents are. Even though he can't answer her question, she still has romantic feelings for him. Karna was humiliated and left. Arjuna, one of the Pandava princes, entered and won the competition. Panchali goes to Arjun's family home. His mother Kunti insists that Panchali should marry the remaining four Pandava brothers. The Pandavas hid when their cousin Duryodhana tried to set them on fire.

After Panchali married the Pandava brothers, King Bhishma divided his kingdom into Pandavas and Kauravas, led by Duryodhana. The Pandavas built the prosperous city of Indraprastha and lived in the Palace of Illusion, a magical structure that grows in love with Panchali. During the visit, Duryodhana falls into the lake and Panchali's servants laugh at him, insulting him. The next time the Pandavas visit Duryodhana, Yudhisthira, the oldest Pandava, takes away the palace and freedom of the Pandavas in a dice game. As a result, while Duryodhana took possession of Bhrama's palace, Panchali and her husband have been in exile in the jungle for 12 years. In her exile, Panchali's only focus is revenge. After 12 years in exile, the Pandavas hide in a neighbouring palace. While disguised as a maid, Prince Panchali hates Kichak's progress and threatens to rape her. Kichak was killed by Panchali and her husband Bhim. As a result of this violence, a great war broke out between the Pandavas and the Kauravas. Many people near

Panchali, including Drupada, Dhri and Karna, are killed in battle. After hearing the news of Krishna's death immediately after the battle, Panchali's husband decided that it was time for him to die and after death. Panchali has become one with the trumpet in heaven.

Conclusion:-

Female characters have always been given less importance in mythology. It is the admirable work of the writer that she chose to write from the understanding of Karna's wife, who knows that she is going to lose her husband but still she never loses hope of getting him out of this war. Karna was a symbol of generosity and loyalty. He is one of the characters in the Mahabharata that I like the most. The wife of a cursed man, Uruvi has also faced much discrimination like Karna, but her love for Karna was magical. The last pages of this book will surely make you cry. A must-read for those who love mythology. The life of Princess Panchali begins with her fiery birth and follows her enthusiastic balancing act as a woman with five husbands betrayed by her father's kingdom. The Panchali's, in their quest to regain their birthright, backed him for years in a fierce civil war involving exile and all the important kings of India. Meanwhile, we never lose sight of her strategic duel with her mother-in-law, her intricate friendship with the mysterious Krishna, or her hidden fascination with the mysterious man who is her husband's most dangerous enemy. Panchali is a fiery woman who redefines for us the world of warriors, gods and the constant handling of destiny.

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Geological Scenario of Around Khargone District Madhya Pradesh, India

Lal Singh Solanki
Research Scholar School of Studies in Earth Science, Vikram University, Ujjain, and Asst. Prof. Govt. J.S.T. P.G. College Balaghat, Madhya Pradesh, India.
E-mail: - solankilalu@gmail.com

Abstract

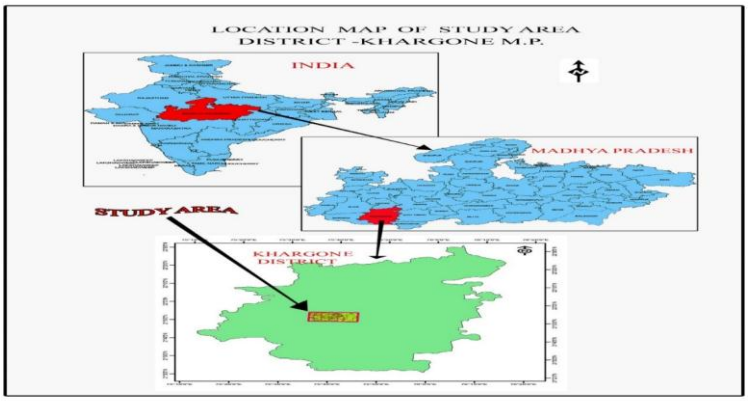
The paper includes a purpose of the geological appearances of Khargone area restricted to Khargone District, Madhya Pradesh in India. The study area is composed of flat terrain with gentle slope, which consists of basaltic lava flows. Geologically, these flows constitute a part of the Deccan Volcanic Province (Upper Cretaceous to Eocene age). There is a distinctive brick red color, fine grained texture moisture content and mineral composition from place to place. This soil is suitable for cotton cultivation. Soil thickness varies from 5 to 2 m in the study area. As well as joint formations, fractures, and spheroidal weathering are structural features. The traps are often capped by ferruginous and aluminous laterite. Natural zeolite filling the cavities in volcanic are useful as gemstone and have industrial and agricultural applications. They are also excellent for use as aggregates in cement concrete.

Key Word: Geology; lava Flows; Physical Feature; Khargone region; Khargone District; Madhya Pradesh; India.

Introduction

As part of the Mesozoic Era, huge lava flows erupted in western, central, and southern India, spreading out over more than 500,000 km². There are hills parallel to the western coast of India (Ghats) in the western portion. Among the largest flood basalt regions on earth, the Deccan Trap formation of India is among one of the largest. In western and central India, subaerially erupted basaltic flows exceed 1.5 km in thickness. Long narrow fissures or cracks are formed from the movement of magma along the earth's surface, so they are known as fissure eruptions (Krishnan 1968). Ykes (1833) proposed the term 'Deccan traps' from the Swedish word 'Trapp-Trapa' meaning stair-like or step-like. In these environments, a particular feature is the existence of flat-topped ridges, caused by the occurrence of more resistant basaltic flow units that formed terraces (Vaidyanathan and Ramakrishnan, 2010).

Location and Study Area: The District of Khargone is situated in the state of Madhya Pradesh in the central region of India. Khargone was formerly known as West Nimar. Khargone city famous for the production of cotton and chilly is built on the banks of River Kunda, surrounded by Dhar, Indore and Dewas as its northern frontier, the state of Maharashtra as the southern, Khandwa, Burhanpur as the eastern side and Barwani as the Western border. The proposed study area is confined to latitude 21^{0}' 45 to 21^{0} 55' N and longitude75^{0} 35' to 75^{0} 40' E (Survey of India Toposheet No.46O/9. The Agra-Mumbai National Highway (NH#3) passes through the district. In the eastern part, the district has a meter- gauge railway line connecting Delhi-Jaipur-Indore-Khandwa-Hyderabad. Important stations on this route include Barwah and Sanawad. The nearest broad gauge line railway station is Khandwa Junction. The nearest airport is located at Indore.



Figures 1. Location map of study area district Khargone Madhya Pradesh Geological of the study area

Basaltic lava flows of Deccan trap occupy a major part of area in the district. They have been classified into two groups viz. malawa and satpura groups respectively confined to the north and south of Narmada River. The narmada valley delineates a contact between these two groups. The malwa groups include a total of 40 basaltic flows, majority of the flows of an Aa type while few are of compound pahoechoe type. The thickness of Aa flows varies from 15 m to 20m, while the individual pahoechoe units are 2 to 5 m thick. These flows are further classified into five formations on the bases of distinct physical characters of the flows. All the flows are nearly horizontally disposed. Basaltic flows of Deccan trap of late cretaceous to palaeogene period (68-62m.y.) and alluvium of quaternary. The stratigraphic sequence of various rock formations exposed in Khargone district is as below: -

Age	Formation	Rock Types
Quaternary to Recent	Recent	Alluvium, Boulder bed and calc-tuffa
Eocene to Cretaceous	Deccan traps	Basaltic flows and basic intrusions
----------**Unconformity**----------		

Bedded lava flows over lie the intra-trappean and at places of the vindhyan. The basaltic flows are black to dark grey in color fine to medium grained, hard, and compact and have uniform texture and composition over wide area. These flows form plateau in the area. The basic rocks are also seen as intrusive near the villages.

Stratigraphic Status : The paper deals with the stratigraphic status of the Khargone area in Indian stratigraphy it has been measured in the Deccan trap group of Madhya Pradesh. (Table 1,2)

Table 1 – Stratigraphic division of Deccan traps (after Krishnan 1956, 1968, 1982).

Upper traps (450m)	Several inter-tangles and layers of volcanic ash have been found in Bombay and Kathiyawar area.
Middle traps (1200m)	There are many ash beds in Central India and Malwa, and intertrappeans are practically nonexistent.
Lower traps (150m)	Central province and eastern area- with intertrappean beds but rare ash beds.

The Deccan traps sub provinces were divided into four groups by Vaidyanadhan and Ramakrishnan (2010): the Main Deccan plateau, the Malwa plateau, the Mandla plateau, and the Saurashtra plateau.

Table 2 - Stratigraphic classification of Deccan Trap

S.No.	Traps	Approximate thickness in feet
1	Upper traps, with numerous beds of volcanic ash and the inter trappean sedimentary deposited of Bombay.	1,500
2	Middle traps, ash bed numerous above but less frequent towards the base, no sedimentary bed known.	4,000
3	Lower traps, with inter trappean of Nagpur, Narbada valley, the volcanic ash of rare occurrence or wanting.	500
4	Lameta or interatrappean group	2 to 20

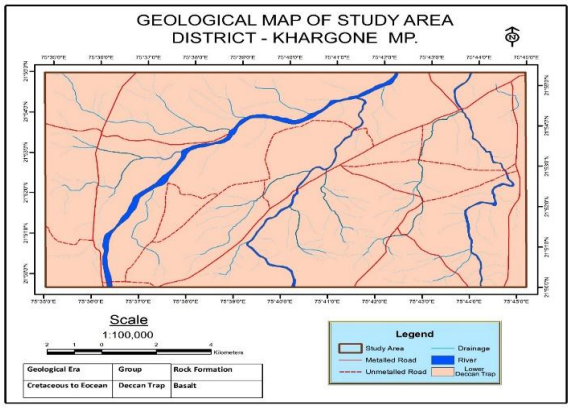


Figure 2. Geological map of study area District Khargone.

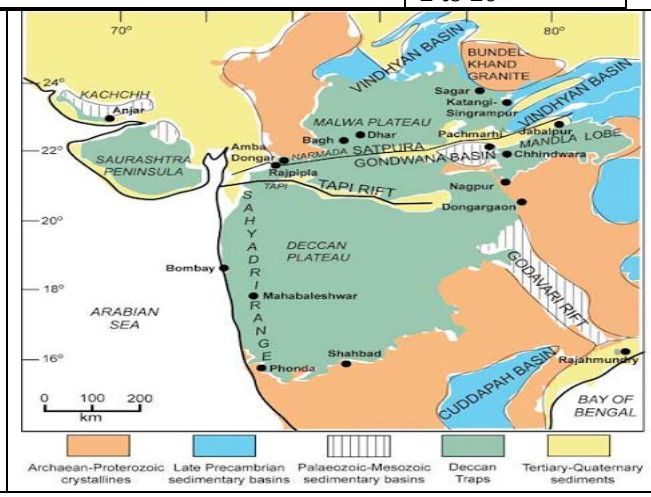


Figure 3. Geological map of the Deccan traps, India

Economics Geology of Area

Deccan traps hard durable used fairly extensively as building stones in the area in which they occur in large masses. Dark in colour they are not used to the extent to which their durability. The light buff and cream-coloured. Deccan traps are excellent for road metal they are hard tough, weather resisting and have good binding properties. They are also excellent for use as aggregates in cement concrete.

The Deccan traps of western India quartz, amethyst, agate, carnelian, onyx other verities of chalcedony which used gem stone. The traps are often capped by ferruginous and aluminous laterite. Natural zeolite filling the cavities in volcanic are useful as gemstone and have industrial and agricultural applications.

Groundwater Occurrence

Hydrogeologically, Khargone region is poor in groundwater which is generally found 6 to 26 meters beneath the outward. Water is held in reserve in vesicles, joints and weathered zone. Practically, groundwater creates as surface water. The principal source of natural recharge includes rainfall, stream flow, and reservoirs. Artificial recharge, arise afterward irrigation, leakage from canals, and water applied to supplement groundwater supplies.

Topography

The study area is composed of flat terrain with gentle slope, which consists of basaltic lava flows. Geologically, these flows constitute a part of the Deccan Volcanic Province (Upper Cretaceous to Eocene age). Khargone area is located in the south-west border of Madhya Pradesh, 258 metres AMSL (above mean sea level) (846 ft) above sea level.

The total field area is an agricultural field and highly fertile for crops like- maize, Chilly, soybean, wheat, cotton, Jawar, groundnut and other.

Climate

The climate is tropical to sub- tropical. The average annual temperature is recorded as 25^0C. Temperature becomes maximum during April and May as 47^0C. The climate of the district on the whole is tropical and dry except during south west monsoon season (middle of June to September) winter season is between Nov. to Feb. Summer season starts from March and ends by June.

Temperature

Temperature data collected from metrological laboratory of Agriculture College, Indore reveals that temperature rises since February and it reaches maximum in the month of May and then it continues to decline till December. Thus, May and December are the hottest and coldest months of the year respectively. In summer, though day temperature remains high, but nights are cool and pleasant which is significant feature of climate of this region. The average ambient temperature remains 26.8°C, varies from 9.7°C to 43.7°C. Wide variation in temperature has also been observed as it varies, from 4.0^0C to 48^0C.

Rainfall

Most of rainfall is recorded during monsoon season. Maximum part of rainfall occurs in the month of July and August. The annual average rainfall varies between 600 to 832.5 mm and the distribution of rainfall is erratic. Maximum precipitation is in between the months mid-July to August. Occasional North-East Monsoon occurs in October to December, winter rains occur in January and February and summer rains from March to May, which helps to some extent in rising of rain fed winter and summer crops.

Wind and Humidity

In the Khargone area, the average wind speed is 3.2 m/s, and the maximum is around 8 m/s. Relative humidity ranges between 13.7% and 98.6%, keeping an average of around 56.6%. There is a wide variation in station pressure, ranging from 971 hPa to 958 hPa, roughly averaging 984 hPa. Khargone's windrose shows that the dominant wind direction is west - about 23.65% of all winds blow from this direction.

Soil: In geological terms, the soil is the upper part of weathered rock (regolith) that resides on bedrock and contains inorganic and organic nutrients. Water is stored in the soil, and it is used to support structures, shelters, and dwellings (Valdiya, 1987). In addition to providing a foundation, the soil is connected to underlying rocks and vegetation growing above, which allows water to percolate through. As far as the soil type is concerned, the Kunda River Basin is composed of four different types of soil - namely,

Black cotton soil : In the study area, black cotton soil results from weathering and disintegration of basaltic lava flows. A majority of the Kunda River Basin is covered by black cotton soil with a thickness of about 1 to 8 meters (Figure 4.1).

Red Soil : There are about 13% of Earth's soils that are composed of red soil, which typically develops in warm, temperate, and humid climates. The name is derived from their rich red color, which ranges between reddish-brown and reddish-yellow due to their high iron content (Figure 4.2).

Laterite soil: Laterite is found as a capping over hillocks of basaltic terrain and it has a brownish to pink color. It is most prevalent in subtropical and tropical regions. This soil has a lot of aluminum and iron in terrigenous soils. The underlying parent rock is weathered intensively and over a long period of time to form a lateritic soil (Figure 4.3).

Alluvial soil: The alluvial soils are found along rivers, in floodplains, in deltas, on ridges, and in areas known as alluvial fans. Soils deposited by surface water are known as alluvial soils. Generally, alluvial soil is gray, yellow or brownish-yellow. A large area of alluvial soil has developed near the banks of the Kunda River and its tributaries (Figure 4.4).'

Figure 4.1. Black cotton soil in the study area.

Figure 4.2. Red soil in the study area.

Figure 4.3. Lateritic soil in the study area.

Figure 4.4. Alluvium soil in the study area.

Spheroidal Weathering

Spheroidal weathering is a typical feature of the Deccan Traps. This structure formed due to exfoliation weathering are found near the top of the flow. In the area, we can observe spheroidal weathering at the Mausampura (Figure 5).

Columnar Joint

One of the most common features of the Deccan traps of Malwa region is columnar joint. These joints exhibit pentagonal to hexagonal appearance in top view. Columnar joints are observed at Kundiya. These structures are generally covered by soils. Lavas and volcanic ash are commonly laid down in successive layers; they may show bedding or stratification. When lavas are extruded in great masses, they show little or no horizontal stratification. (Figure 6).

Figure 5. Spheroidal Weathering in the study area. **Figure 6. Columnar Joint in the study area.**

Conclusion

The paper has presented a short-term version of the significant features of the geological setting of Khargone area confine to Khargone district, Madhya Pradesh. The study area is mostly occupied by three lava flows of the Deccan Traps, ranging in age from Upper Cretaceous to Lower Eocene. The lava flows are distinguished on the basis of elevation, color and petrographic study. The lava flows are showing the presence of columnar joints and spheroidal weathering structures. An elaborative account of geological setting of basaltic lava flows of Deccan traps has been described in brief. Based on the diagnostic features of basaltic lava flows authors have delineated the demarcation of groundwater potential sits which are of considerable value in resolving the prevailing demand of sustain water supply.

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An outline of growth and and rise of Indian English writers

Krishnakant Patil
Research scholar, Sunrise university, alwar
Email- krishpatil000@gmail.com

Abstract

After indian independence the significance of English writing as a language increased. It came the authorized language of India. A generation of Indians was produced who were more comfortable in reading and writing in English than they Were in their mother tongues. It sounds strange but that was the happening in reality. This led to a period when The Indians also started to write in English, thereby producing which is now known as Indian English literature. Numerous researches are being pursued on Indian English literature and the rise and growth of the Indian English authors. That gave an ample scope to review related literatures. The segment on literature reviews has three broad sections. The first one is a section comprising of review of Contextual issues i.e. a review of the conditions prevailing in India regarding the rise and growth of the Indian English authors. The another segment is that of review of literatures written on the content or related motifs. The Third section is the section on reviews of the works of prestigious Indian writers who wrote/ write in English

Key words: Indian English writers, review, literatures. Development

Introduction:

English as a language was brought to India by the British. They first arrived in India with the dreams of Getting the regulators of the spice trade. With time they started realizing their colonizer and imperial Bournes. The result was that English just didn't remain a language in India. It came commodity further. After independence the significance of English as a language increased. It came the authorized language of India. A generation of Indians was produced who were more comfortable in reading and writing in English than they Were in their mother tongues. It sounds strange but that was the happening in reality. This led to a period When the Indians also started to write in English, thereby producing which is moment known as Indian English Literature. Numerous inquiries are being pursued on Indian English literature and the rise and growth of the Indian English writers. That gave an ample compass to review affiliated literatures.

Review Of Literatures

This member has three broad sections. The first one is a section comprising of review of contextual issues i.e. a Review of the conditions prevailing in India regarding the rise and growth of the Indian English writers. The another part is that of review of literatures written on the content or related motifs. The third section is the Section on reviews of the workshop of prestigious Indian writers who wrote/ write in English.

Contextual Reviews

Indian writing in English has a veritably recent history, which is one and a partial century old. British ruled India for 150 times. India and England dealt with each other in trade, military and political affairs. During this period, England acquired wealth and empire of India. India, in return, got English language, literature and the conception Of constitutional government. From the literal perspective, Indian English literature has passed through Several phases similar as Indo-Anglian, Indian-English, Indian writing in English and lately Indian English Literature. In spite of its different societies, races and persuasions Indian writing in English has successfully Reacquired and reflected themulti-cultural, multilingual society. As a result, it has aroused a good deal of Interest at home and abroad also. The workshop of colorful writers get not only a vast order of compendiums, but also Admit a vast critical acclaim. The term Indian writing in English is used in a wider sense. This is the body of Workshop by the writers whose mother tongue is one of the languages of multilingual India. According to K.R.S. Iyengar, there are three types of Indian writers in English. First group included those who have acquired their Entire education in English seminaries and universities. Alternate group includes, Indians who have settled abroad, But are constantly in touch with the changing environing and traditions of their country of adoption. And Eventually, there are Indians who have acquired English as a alternate language. Accordingly, a large number of Indians were greatly moved by the genuine desire to present before the western compendiums an authentic picture Of India through their writings. Numerous Indian pens have chosen English as a medium of expression and left a Great impact on different forms of literature. For

illustration, Toro Dutt, Pandita Ramabai Saraswati, Sri Aurobindo Ghosh, Jawaharlal Nehru, Sarojini Naidu, Mulk Raj Anand,R.K. Narayan, Raja Rao, Nissim Ezekiel, Nayantara Sahgal, Kamala Das, Jayany Mahapatra, Anita Desai, Bharati Mukherjee, Salman Rushdie, Shashi Deshpande and some recent Indian writers similar as Arundhati Roy, Kiran Desai, Aravind Adiga, Chetan Bhagat And numerous others. They've been using English to represent the Indian culture and spirit. In this connection, The reflections of Randolph Quirk and Raja Rao are worth quoting.

Raja Rao says in the Preface of his new Kanthapura " One has to Convey in a language that isn't one's own." One can notice " Indianness" in Indian writing in English.K.R. Srinivasa Iyengar has correctly reflected in this regard " What makes Indo-Anglian literature an Indian Literature and not just a ramshackle outhouse of English literature is the quality of its'Indianness'in the choice Of its subjects, in the texture of study and play of sentiment, in the association of material and in the Creative use of language". Whereas Meenakshi Mukherjee observes " Whatever be the language in which it is Written, a new by an Indian writer demands direct involvement in values and experiences which are valid in The Indian environment." Indian jotting in English expressed a participated tradition, artistic experiences and Indian Heritage. Early Indian pens have used numerous Indian words and the experiences throughout their workshop of art. K. Narayan has created Malgudi analogous to Thomas Hardy's Wessex. NiradC. Coudhury is notorious for his these Autobiography of an Unknown Indian" (1951). As figured by Reddy VenkataK. and Reddy BayapaP. these Writers do comment on the social issues like " superstitions, order, poverty, ignorance and numerous other social Immoralities that were eating the vitals of Indian society." Salman Rushdie is the most notable among all the Indian Writers in English. His Midnight's Children (1980) won the Booker Prize in 1981. We know Shashi Tharoor for His The Great Indian Novel (1989). Bharati Mukherjee, the author of Jasmine (1989) has spent her career on The issues involving immigration and identity. Vikram Seth is known for his A Suitable Boy (1994). Other Remarkable writers include Khuswant Singh, Anita Desai, Shashi Deshpande, Amitav Ghosh, Bharati Kirchner, Arundhati Roy, Kiran Desai, Jhumpa Lahiri,C.R. Krishnan, Vikas Swarup, Chetan Bhagat, Aravind Adiga and Others. Chitra Banerjee Divakaruni is well known for her unique literary creations like'Arranged Marriage' (1996),'The Mistress of Spices' (1997),' Queen of Dreams' (2004),'One Amazing Thing' (2011),'The Oleander Girl' (2013) and others. Indian writing in English has witnessed some controversies in its evolvement. It has to prove itself on the Grounds of superiority and inferiority compared to literature produced in other Indian languages. It also Witnessed Allegations of being superficial, imitative, shallow etc. Indian writers in English have also been Criticized of being not real socio-artistic ministers of India. They've been said to get themselves Pulled from the authentic Indian sense. Still, the new generation of Indian writers in English has Handled the wide range of themes and the subject matters. Shashi Deshpande, Shobha De, Arundhati Roy, Kiran Desai, Chetan Bhagat, Aravind Adiga and Chitra Banerjee Divakaruni have written on variety of themes. For these writers English is a medium of expression of their creative appetite, through which they can reach to the International compendiums. Review of Literatures Rao (2017) reflected that there's a concinnity and variety in India. Numerous writers contribute for writing in English. It has been began from Anglo-Indian literature, which is a product of Indo-Anglian relations. As a result, Indian writing in English is greatly told by writing in England. It led to the creation of a new nation and New people. It causes privileges, responsibilities, advantages and troubles. There was a rapid-fire growth of the Operation of English language in all the fields. It causes Indian writing in English as a distinctive literature. Both the Advantages and disadvantages are balanced by seeing further English and English men in India. Indians tried to Habituate western culture which led to sustained and stimulated life. Originally Indians concentrated on reading, C S Papers Speaking and harkening. Latterly they started writing in English. As a ground between India and England, Raja Rammohan Roy caused the golden age in ultramodern Indian literature. He editorialized that Indians must have Traditional strength with the new scientific disciplines. Roy as well others took part for Indian writing in English. New life is seen by starting Hindu or native seminaries. This new situation challenged the west. Ramkrishna Paramhansa from Bengal tried to cover Indian culture. Actually, he was ignorant of English. After the death Of Ramkrishna Paramhansa, his principal convert, Swami Vivekananda, started the Ramkrishna Mission. He made Some of the verse readings from Bengali mandatory. An English journal has been started form the Mission. He Made some of the verse definitions from Bengali to cover Indian culture and borrow western culture for the Recognition of English language.

This research composition substantially speaks about the history of the inception of English language in India. However it starts from Raja Rammohan Roy's benefactions. But the journey of English language in this country Is much aged than that. This composition would have been more absorbing if it would have spoken about the Inception of the trip of English language in India since the time the English

came to India. Ahlawat (2015) wrote that Indian authors wrote in English and the recognition of their writing has evolved a Term, " Indo-Anglian Literature". He also added that lately similar writings have come to be known as'Indian Writing in English'. There's agreement among literary chroniclers that Indian creative writing in English had Begun indeed before Macaulay's'Minute on Indian Education' (1835) was accepted and endorsed by Lord William Bentinck, the Governor-General of India at that time. Yet, there's considerable disagreement, frequently Verging on confusion, as to the term one should employ in describing and relating this area of writing. As One reviews the development of this literature, one becomes apprehensive on the necessity to agree on a Comprehensive descriptive term for it, therefore assuming in giving credibility to this literature. Looking to the Handicap of writing in a foreign language,Dr. Srinivasa Iyengar aptly remarked that while numerous good Indo- Anglian novels and numerous further short stories have formerly demonstrated the feasibility of Indian writing of English fiction, it's nonetheless true that the unique complications of social life and the untranslatable nuances of Conversational speech are more rendered through the medium of one's own mother- lingo. It's thus Certain that important of the creative work in fiction in the India of the future will be done in the vernaculars; but Good English novels and short stories will continue to appear, either as restatement or as original workshop. Indeed Though the lineage of Indian writers in English had increased in number, there was absence of knowledge to Be identified as a group. The need to inseminate this mindfulness led to hunt in the twentieth century for an Acceptable term to identify and describe these writers. The action was taken byK.R. Srinivasa Iyengar, who Located the term " Indo-Anglian" and used it for his notice on Indian writing in English (Indo-Anglian Literature, Bombay, 1943). Iyengar informed that the term " Indo-Anglian" can be traced to Calcutta, where in 1883 it was used for the first time to describe a volume containing essays written by native scholars. He Approved of its operation as it can be used both as substantial and adjective. Meti (2014) reflected that the possible erudite form for a pen is to keep him always in touch with the Common compendiums is the fiction. It's in this area we find that the Indian writers in English have made the most Significant Donation. So, of all stripes, the novel is the most popular form moment. According toH.M. Williams (1976), " It's really the most popular vehicle for the transmission of Indian ideas to the wider English speaking world." We in India, on a greater extent are indebted to the European and English novel because as an art form, it has been imported to India from the West. In other words, it is a gift of Western literature.

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Sustainable Development A Call for A Change

Mr. Samir Subhash Kulkarni[1] Dr. Harsha Dhule[2]
[1]Assistant Teacher, School Of Scholars Kaulkhed, Akola – 444001
[2]Senior Teacher (TGT) School Of Scholars, Kaulkhed, Akola – 444001
Email Id : samirkulkarni@mgsnagpur.org
Email Id : harsha.dhule@mgsnagpur.org

Abstract

"Without environmental_sustainability, economic stability and social cohesion cannot be achieved."

Sustainable_development refers to all the human developments that meet our current needs, without compromising the nature's ability to provide the resources for the future generations. India has covered almost 2.4 percent of the world's land and 16 percent of the world's population. This started creating extra pressure on the resources which are available in India. This results in severely unsustainable use of natural resources by several generations for so many years. Because of this India is experiencing rapid and widespread environmental degradation at alarming rates. To feed the massive population of the country and to meet the growing needs of it, a tremendous pressure is seen over all the resources in India, especially the land, which is overused for various socio-economic activities. In this paper, our sincere efforts are to present various strategies for Sustainability of the resources which are important for our future generations.

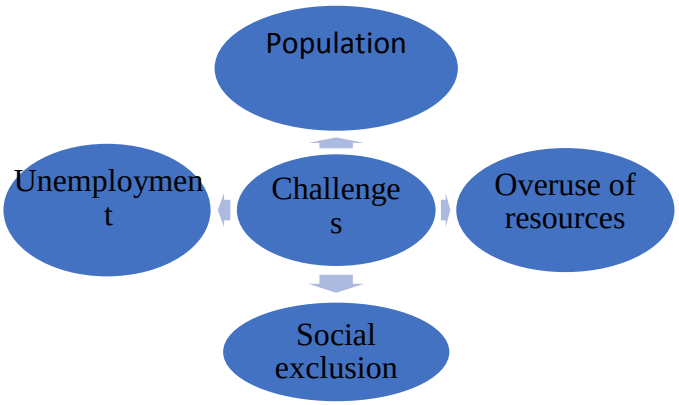
Introduction

We know that development is possible only when we use the available resources around us and a Man started using the resources when he started settling down on the banks of rivers all over the world. Since the last few decades we cannot think of socio- economic development without the Environment. So, to chart out the development of the world without the loss of an Environment, in 1992 an Earth Summit (Agenda 21) was organised at Rio de Janeiro, which became a milestone event focusing the world's attention on the environmental problems faced by the entire world due to development and overuse of the resources. This Agenda 21 adopted at the conference, represents a global consensus and political commitment at the highest level on socio-economic development and environmental cooperation.

Key Words: Sustainable Development; Land Degradation; consensus;

Theme: Sustainable Development and various challenges faced by India to achieve it : There are many different origins and definitions of the term Sustainable Development, but the World Commission on Environment and Development's report called the Brundtland Report in 1987 stated the best and one of the most widely recognized definition i.e.

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." As far as the main challenges to sustainable development are concerned (which are global in nature), they include poverty, exclusion from the main force of the society, unemployment, climate change, conflict and terrorism, building peaceful and inclusive societies, building strong institutions of governments under the guidance of the Constitution and of the Rule of Law etc.



As every nation is deeply committed to the enhancement of the living standards of its people, and actively involved with the international coalition towards sustainable development, the Summit (Agenda 21) provided India an opportunity to recommit itself to the developmental principles that have guided the nation. During 1960s in India, the Green Revolution led to high productivity of crops through adapted measures, such as increased area under farming, multiple-cropping which includes plantation of two or more crops rather than one annually with the adoption of HYV of seeds, use of inorganic and chemical fertilizers and pesticides, improved irrigation facilities, and improved farm implements and crop protection measures and modified farm equipment. As a part of such developmental efforts a large investment is done by the farmers and the governments as well. The study shows that after the Green Revolution, the production of food crops (Wheat and Rice specifically) has tripled which has had a significant impact on poverty reduction and lower food prices and also helped India to move from a state of grain importing country to a state of Food Secure country. After the 1960s a significant increase in the usage of pesticides is seen which made India one of the largest producers of pesticides in Asia and also there is high pesticide residue in India which causes a large amount of water pollution and degradation of various natural resources. Another major issue is that there is an increase in the pest attacks, which are due to an imbalance in the pests. Due to increased usage of different types of pesticides the ecological balance is being disturbed in which the imbalance is seen between predator and prey pests, and hence there is an overpopulation of one kind of pest that would attack certain crops and this also leads to an imbalance in the production of those kinds of crops. This also has led to the disruption in the food chain. According to the Agenda 2030 of the United Nations regarding the Sustainable Development, the goals are set to be fulfilled such as end of poverty of all its kind, end of hunger, provide health to all, achieve all types of equalities and promote women empowerment, protections should be provided to the ecosystem by each and every country with the international collaboration. In India, population is a major challenge which creates many obstacles in the achievement of the sustainable development which leads to the overuse of water, land and food and create the shortages of drinking water and arable land for food production in the country. Along with the above-mentioned problem, our country is also facing the problem of poverty and inequality. In India, more than 25% people of the total population are living below the poverty line. Even socio-economic inequalities are standing like barriers to the development of the country. Inequality continues to be a serious obstacle to sustainable development where the number of people is suffering from malnutrition. The Green Revolution played an important role in the decline of food prices over the past 30 years may have contributed to increases in food consumption, but in many regions of the country, specifically the regions in the remote and arable terrains are limited, and the creation of new ones has a destructive effect on the remaining ecosystems. So that's the biggest challenge in front of us is not only to maintain food security to fulfil the needs of the growing population but also to protect our ecosystem without harm. Another major challenge towards Sustainable development is social exclusion and not getting a clean and hygiene environment. Article 21 of the Indian Constitution guarantees the Right to Life which covers the right to clean environment, right to livelihood, right to live with dignity and a number of other associated rights and as per 'The Directive Principles of State Policy' it is the prime duty of the State to ensure 'distributive justice' to all in which the political democracy in India should be accompanied side by side with social and economic democracy. But unfortunately, this is not at all seen in India. So, to ensure the Sustainable development, the first and most important work we have to do is to join hands together to ensure socio-economic and cultural equality which automatically leads towards the protection of our environment and of course the ecosystem too. Along with the aforesaid barriers to achieve SD, India faces the largest problem of Unemployment. Right to Education, 2005 provided the wide access to get education to everyone, but many of the citizens in the country do not get the proper education due to various socio-economic factors. Even the mode of education which we receive is not creating self-employment and as a result of this many of the population remain unemployed and turn toward other evil ways leading to the increase in the number of crimes in the society. As compared to the previous year the crime rate has increased by 13% (2.66 million in 2020 and 3.06 million in 2021 by TOI report). Unfortunately, these figures are not good for any country's development. Here we would like to suggest that the State should take some measures to create the situations where these people will get the opportunities to get self-employed. The proper self-employment will help in the transformation of the energy of the youth on the right track. Another important issue is the consumption of the energy resource and overuse of the resources. Being the second largest populous country, the total consumption of energy rises by 4.5% as compared to the previous year which created over pressure on the energy resources too. This overuse of the resources leads to the imbalance of the entire Ecosystem and of course the Climate too. As we all are well aware with the increasing prices of Petroleum Day by day which lead the entire country

to face the increasing prices of the daily usable things also. This is not a good sign of Sustainable Development.

Some Strategies to attain the Sustainable Development:

The concept of Education for sustainable development emerged to be aware about sustainable goals on a global level. Education needs to include programs, and activities that promote sustainable development. Sustainable development goals must be integrated into education and education must be integrated into sustainable development. It promotes the integration of all issues in local and global contexts into the curriculum to prepare learners to understand and respond to the changing world. Education for sustainable development aims to achieve learning outcome that include 21st century skills which handle responsibility for the present and future generations. Rote learning teaching strategies are not sufficient to motivate learners to make them as global citizens. The learning environment itself must adapt and apply a whole-institution approach to embed the philosophy of sustainable development. Building the capacity of educators and policy support at international, regional, national and local levels helps drive changes in educational institutions. It leads to empowering Youth and local communities interacting with education institutions to become leaders in advancing sustainable development. Agenda 21 was the first international document that identified education as an essential tool for achieving sustainable development and highlighted areas of action for education. Education for sustainable development is a component of measurement in an indicator for sustainable development goal 12 (SDG) for responsible consumption and production". SDG 12 has 11 targets and Target 12.8 is by 2030, ensuring that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature. Sustainable development does not mean to create any barrier in the development process of the country but this concept aims at the utilization of our resources in justifiable ways so that an inter-relationship can be established among present and future generations. To attain this many possible strategies can be useful. For example:

1. Whenever we are going to make use of any technology, ensure that it should be eco-friendly, locally adaptable. It should be resource efficient and appropriate as per the nature and culture of the society.
2. We should provide Environmental Education and create awareness regarding the justifiable use of all the resources. One should start the awareness drive from his own house first.
3. To minimise the loss of resources and the overpressure, we should adopt 3Rs(Recycle, Reduce and Reuse).
4. We need to support various activities launched by the Government of India with our active participation. Ex. National Solar Mission, National Mission to Sustain Himalayan Ecosystem, National Water Mission, National Mission of Green India, Swaccha Bharat Abhiyan, National Mission of Enhanced Energy Efficiency etc.

Conclusion:

Sustainable development is a mission in which we are made aware of the fact so that we can save the resources and environment for our future generation. It will not be successful by imposing policies but with the awareness among the people of the country. It is clear that the development in various sectors leads to environmental degradation in which the utilisation of the resources causes the largest costs on those generations that are yet to be born. We can only improve sustainable development when each and every citizen and stakeholder will take part actively and with complete responsibility with the vision to provide everyone an economic freedom, social justice and environmental protection, making our own and future generations better off than now. We know that Sustainable development is not that much easy to attain but is not impossible to achieve. Our sincere efforts can make this Herculean Task easy with better planning.

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Dr. B.R Ambedkar Contribution to the Modern Indian Society: A Review

Mr. Dundappa Y Badlakkanavar
Research Scholar, P.G Department of Studies and Research in Social Work,
Karnatak University, Dharwad, Karnataka, India.

Abstract:
The present paper is an attempt to explore Dr. B.R Ambedkar contribution to the Modern Indian Society using various indicators based on data from secondary sources. Dr. Ambedkar is a great nationalist, social thinker, political reformer, and philosophical writer. He stood for all political, social and cultural functions that enhanced human development and the cause of happiness. He was the soul of the Constitution of India. They fought for the betterment of the exploited and depressed classes. He had a rare crusading mindset, carving out a mechanism that would play a prominent role among the leading architects of modern India. In the process, Dr. Ambedkar emerges as a valiant upholder of the democratic republic of India, but also occupies a unique position in the Indian pantheon as an extraordinary intellectual collective leader who awakened the social conscience of contemporary India.

Key Words: Dr. B.R Ambedkar, Constitution, Contribution, Modern, Indian , Society.

Introduction

Dr. BR Ambedkar was one of India's finest intellectuals in the 20th century. He was a prominent activist and social reformer who gave his life for the upliftment of Dalits and for the socially disliked class of India. Being the Messiah to the oppressed, he has constantly fought for and abolished the caste discrimination that has mentally disturbed Indian society. Born into a socially backward family, Ambedkar was a victim of caste discrimination, inequality and prejudice. However, fighting against all odds, he got a higher education, so he became the first untouchable to achieve the same. Soon after completing his high school studies, he began to fight politically for the rights of the politically depressed class and for the inequality practiced in society. He was an advocate of social equality and justice. Trained academically as a jurist, he became the first law minister of independent India and became the chief architect of the Constitution of India. He put special emphasis on dignity, unity, freedom and rights for all citizens as enshrined in the Constitution. Ambedkar advocated democracy in every sphere of social, economic and political. For him social justice means maximum happiness for the maximum number of people.

Objective of the Study

The paper is conducted to the following objectives:

1. To understand the early life and Education of Dr. B.R Ambedkar
2. To understand the contribution of Dr. Ambedkar to the Constitution.
3. To understand the Dr. Ambedkar as a Social reformer.

Methodology:

In this paper the research is used secondary data for preparing research article. The data is taken from different research reports, journals, websites and research papers, Magazine and daily News papers, and other educational text books.

Early life of Dr. B.R Ambedkar:

Bhim Rao was born on April 14, 1891, in the untouchable 'Mahar' family of Moho, near present-day Indore. He is the fourteenth child of Ramji Sakpal and Bhimbai. Ramji Sakpal (1848-1913) was the headmaster of the rank of Deputy Master-Major at the Military School. Bhimabai (1854- 96) belonged to the well to make a family of Murbadkars who were employed in the British army. Bhimrao's family originally hailed the Ambawade village in the Ratnagiri district of Maharashtra. His official name on the school register is Bhima Rao Ambawadekar. At his school there was a Brahmin teacher with the surname Ambedkar, who somehow had a soft corner for the boy. It was because of the kindness of these teachers that they finally accepted Ambedkar as their surname. Ambedkar married a nine-year-old girl named Ramabai at the age of fourteen. He passed Matriculation in 1907. With the help of a scholarship given by Maharaja Sajeerao Gaikwad of Baroda, he received a B.A. Degree in 1912. His higher education was in the West. The Maharaja financed his studies there, upon his contract to serve in the State of Baroda upon completion of the study. He graduated with an M.A. in 19 15 and a Ph.D. Degree in 1916 from the prestigious Columbia University of New York. After successfully completing her studies at Columbia University, she moved from New York to London to enter the Grace Inn for Bar-At-Law and simultaneously enrolled at the London School of Economic and Political Science. But, when he was half

way through his studies, the Maharaja of Baroda called him back, because the scholarship awarded to him had expired. Returning to India, he took over as Maharaja's military secretary. But because of the unbearable shame he had to suffer at the hands of the caste- Hindus- he left the state of Baroda. For some time he worked as a professor of political economy at Sydenham College, Bombay. He resigned from his post to resume his financial and legal studies in London. This time he was financed by the Maharaja of Kohlapur. Before moving to London, he had testified in the franchise before the South Borough Commission; And advocated separate voters for the untouchables. In 1921 he received his M.Sc. He graduated from the University of London in 1922 with a DSC (Econ) Degree for the Decentralization of Imperial Finance in British India. "The Rupee Problem: This is the Origin and Its Solution". He graduated from Grace Inn, Bar-At-Law, and went to Germany to attend the renowned University of Bonn for a higher education in economics, but was unable to complete his studies due to lack of funds.

Dr. B.R Ambedkar contribution to the Modern Indian Society

Dr. Ambedkar had great faith in social reformers to create public opinion against extreme inequalities in society. He urged organizations to find ways to deal with cases of discrimination emergencies. Organizations must confront the dominant segment of society to allow the oppressed and depressed classes to work in different sectors. Hindu society should provide space for the depressed by providing employment in their various fields to suit the strength of the applicants. According to him, social change and social justice are indeed crucial to the egalitarianism that any democracy should aspire to. As a social democrat, Dr. Ambedkar worried about a broader view of the country's stable reconstruction with comprehensive expansion and cultural integration in the country without caste discrimination. As a prominent architect of the Indian Constitution, Dr. Ambedkar built the safeguards of establishing a society more equitable to the oppressed and depressed classes of millions. He strongly believed that political institutions were responsible for reforming existing social institutions using legislative power to deliver results. Political institutions remain only when social institutions are actively working towards social reform.

Ambedkar as Education Specialist:

Dr. Ambedkar viewed education as a powerful tool to enhance the overall status of the depressed and deprived classes. They thought, it is education that provides the moral arsenal for any social movement, more education gives more opportunities for advancement. In his fight for the liberation of Dalits from Hindu social slavery, Ambedkar was well aware of the role that education should play. He wished that the upliftment of the depressed classes was the responsibility of the mature people of the country. He thus established a chain of school colleges and hostels under the shield of the People's Education Society, founded in 1945. However, their emphasis is not solely on academic education. They were aware of the importance of mass education. As such, they envisioned education as a tool to educate Dalits on their social realities and to develop courage and commitment to fight against casteism. He has published four journals: 'Mooknayak' (1920), 'Bahishkrit Bharat' (1927), 'Samata' (1929) and 'Janata' (1930).

As a warrior against casteism:

Ambedkar's birth in the 'untouchable' community was subjected to humiliating experiences. Untouchability was deeply ingrained in the minds of caste Hindus in those days. Ambedkar fought against caste-based injustice on all fronts - social, religious, political and economic. His encounter with casteism and untouchability opened a new path in India's social reform movement. Unlike the former reformers who limited the cause of social progress and welfare to general reference, Ambedkar focused his energy and resources on the cause of the liberation of Dalits, a particular category. Ambedkar's ideological conflict with Hindu socialism and casteism grew into a direct act when the Untouchables convened in March 1924 at Damodar Hall, Bombay. The foundation of the "Bhishtak Hittakarini Sabha" constituted a forum for representing the grievances of the depressed classes.

Ambedkar as a renowned economist:

Dr. Ambedkar's work in economics is remarkable. His views on public finance and agriculture are noteworthy in economics. Pro. A. K. Sen said, "Ambedkar is my father in economics. He is a true champion of the backward. He deserves more than he can achieve today. Those who are in charge of public funds should try to evaluate alternatives to achieve objectives and see that there are no leaks.

Dr. B.R Ambedkar as the nation builder:

His thoughts on nation building were talked about. He was very visionary and his warnings about India's future are true today. In his speech before the Constituent Assembly, he warned his fellow legislators against non-constitutional methods of civil disobedience and satyagraha, because they were essentially anarchic. They rally against the Indian tendency to engage in heroic worship. They were afraid that the

people of India would place their liberation at the feet of someone they worship, or exercise extraordinary boundless powers. He has emphasized the importance of creating not just political democracy, but also social and economic. His PhD thesis prompted the establishment of the Finance Commission of India and his work was instrumental in formulating the guidelines of the RBI Act 1934. He is one of the founders of job exchanges in our country. He was instrumental in establishing the National Electricity Grid System, Central Water Irrigation, Navigation Commission, Damodar Valley Project, Hirakud Project and Sone River Project.

Dr. B.R Ambedkar as an architect of the Indian Constitution:

Dr. Ambedkar's drafting of the Constitution of India has helped to eliminate untouchability and prohibit all forms of discrimination on the basis of sex, religion, caste and so on. Because of the sheer extraordinary contributions, Dr. B.R. Ambedkar really deserves to be the Chief Architect of the Indian Constitution. However, it is undeniable that Dr. Ambedkar's vision of building a democratic social system has not yet met. Various countries around the world follow the Indian constitution.

Conclusion:

Dr. BR Ambedkar was a very versatile personality. His public service began in the second decade of the twentieth century. They belong to the class of politicians who put their service to humanity. Dr. Ambedkar's short life and still fabulous. He rose from the dust, became the father of the Indian Constitution, from being treated worse than animals. A true liberator of Dalits, a great national leader and patriot, a great author, a great educator, a great political philosopher, a great religious guide and above all a great humanist with no parallels to his contemporaries. All these aspects of Ambedkar's personality have strong humanist underpinnings. Dr. BR Ambedkar is actually the designer of the nation and the universal leader rather than just the leader of the Dalit or backward classes. Dr. This is due to the efforts of BR. We are pleased with Ambedkar's principles of social justice. Babasaheb was a man who, with his efforts, built India in its early years. He fought for India's independence and then worked hard to build the India of his dreams. It is regrettable that previous papers and contemporaries have elaborated on Ambedkar as a major social rebel and a bitter critic of Hinduism. Dr. Ambedkar's critics have ignored his fundamental human tendencies and strong humanitarian beliefs behind every single act or speech throughout his life. Among the manufacturers of modern India is Dr.. We conclude that Ambedkar is one.

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The economic perspectives of Indian agriculture trades: Problems and Remedies

Dr. Prashant M. Puranik
Gurukul Arts, Commerce & Science College, Nanda Tal. Korpana, Distt. Chandrapur 442917 (M.S.)
Email Id: prashantpuranik1970@gmail.com

Abstract:
Indian economy is standing on three sectors. The names of these sectors are Agriculture sector, Industrial sector and service sector. No doubt that, every sector is having its own contribution to develop India's GDP. But after many decades of India's independence, still more than 65 % peoples are living the small villages and their main source of Income is depend on agriculture and agriculture trades. Today there are many government centers and institutions are established to give the proper training to the farmers who are interested to start their own agro trades. But as far as the total numbers of farmers in India is concerned, the total number of these centers is so low. Due to many problems Indian agro trades are not making their own development. This should be a very genuine barrier in the development of Indian trades because in real sense until and unless the Indian agro trades will not rise its wings, it is not possible to rise the percentage of employment. There must be government initiatives and micro planning by which it is possible to settle new dimensions in era of Indian agro trades.

Keywords: conservation, skills, fixation, motto, establishment

Introduction:

India is a developing country and the major source of bread and butter of its population is agriculture and agriculture trades. Government of India has given much emphasis on the development of agriculture since first five years plan. After implementation of many five years plan, when it was not possible to make the economic as well as productive development or quantitative development, they realize that unless and until they have not given the more importance to start the new agriculture trades, it is not possible to make allover development of this sector. That's why by leaps and bounds they have established the number of training centers. These centers are giving the training to the poor farmers of various agriculture trades viz; earthworm conservation, paltry farm, goat farm, Emu farm, pig farm, ostrich farm, honey bee conservation, fish plantation etc. Moreover there are some new skill developing programs like production of finished goods from the waist products or bi products. These Institutions mostly concentrates on giving the practical training or on job training to the trainees. The main motto of such type of training is to update the required skills of rural youths and to make them strong enough to solve the problems that will arise in the future. Many such Institutions provides raw material to the trained employees and assure them for marketing of finished goods By this way these institutes helps the rural youngsters by providing the skill based programs, finance and employment.

Objectives of the study:

The objective of this research is to know the problems of the agro trades in India.

Hypothesis:

"Indian agro trades are facing a lot of problems."

Research Methodology:

The secondary sources are mainly used for data collection.

The problems of agro trades in India:

In few decades the percentage of agro trades are always increasing. But still they are facing many problems. Some of the major problems are as under;

Lack of awareness :

India's most of the population is having small piece of land. That's why they are called as the small land holders. After taking the limited seasonable crop from their small land of agriculture, most of the farmers are prefer to work in the others land. From few decades Indian government is trying to promote the training centers. The main motto of these centers is to boost the skill of the farmers by giving them the training of various agro trades. But till them the percentage of the farmers who has joined and started their own agro trade is very low.

Limited number of centers :

India is a country of second highest population in the world. As far as the agro training centers in India is concerned, India is having very less number of agro trade institutes

Surya (Skill Upgradation Of Rural Youth In Agriculture) , Icar – Icar- Krushi vigyan Kendra, Vijaypura, MITCON etc. are the some of the main training institutes who are always arranges the excellent training programs one or two times in the year. But as per the rising population, the total number of training centers in India is very low. It is today's need to develop these centers.

Lack of financial support :

No doubt that Indian agro farms institutes are continuously making a very excellent work by providing skill oriented training to the villagers. No doubt that by leaps and bounds the number of these training centers is continuously increasing. But India is a developing country and so the per head income and total gross income of Indian population is so low. Therefore after successfully completing the training program, many trainees can't just think to start their own business. It is not that, they are lacking of confidence, lacking of business skills, not ready to accept the challenges, not ready to bear risk, not ready to stand strongly in the competition but main reason behind this is due to lack of sufficient finance need for the business.

Problem of price fixation :

Just like other products available in the markets, the trained candidates of the agro trade training institutes has to make all the production process, i.e. collection of capital, selection of skilled manpower, giving them proper training to complete the production, actual production etc.. After completing these works of production, they have to fix the prices of that finished goods. The main problem arises in this function is on which criteria these prices should be fixed? Most of the candidates even don't aware about the need of pricing survey. Therefore, most of the traders use to fix the prices either of high rates or the small rates.

Marketing of the production is not so easy :

After fulfilling the production process in agro trade companies, the main problem is always arise is that, 'How to make the marketing of production? Most of the times after well establishment of skilled sales persons, big wholesalers and retailers, it is very difficult to make the proper marketing of the production. It is so because after sailing the products to the consumers there should not create the repeat demand of that product. Due to continuous advertisements on audio visual tools and also the social medias, consumers are already attracts towards the well known branded products. Identifying the potential consumers, create the potential consumers by providing them excellent quality of products and sustain the potential consumers for long period is the main challenge that always facing by the agro traders.

Lacking of infrastructure :

The agro trade institutes are always faces the problem of insufficient capital. That's why they also always having problem of less infrastructure viz; building, machineries, authentic laboratories, laboratory equipments, digital tools etc. The actual cost of the above infrastructure tools is so heavy that, the small agro traders cannot afford it. These agro trade institutes have to manage lot of expenses regarding all the marketing activities so that the production process will be sustained. The big companies can afford these all the expenses but small traders can't afford this.

Lacking of transportation facilities :

India agro trade Institutes are mostly situated in the rural and tribal area. After completing the production process, the produced goods are needed to transport in the urban markets for selling. But, in India the problem of transportation of goods is the major problem. Moreover, due to the less quantity of cold warehouses and less facility of transportation, it is not possible to transport these agro products in the high distance markets. Due to nasty roads and less quantity of transport vehicles and tools, It is very difficult to make the transportation of the agro production. Testing of the hypothesis is the next step of this research paper.

Testing of the Hypothesis:

In this research paper the following hypothesis was taken

"Indian agro trades are facing a lot of problems."

Indian agriculture has now spread its wings of development. Along with the regular and seasonable production of agriculture, they are interested to earn money through another income source i.e. agriculture trade. Today in India there are number of agro training centers established in Maharashtra and other states. But there are lot of problems is arising in front of these centers. lack of awareness, limited number of centers, lack of financial support, Problem of price fixation, marketing of the production is not so easy, lacking of infrastructure, lacking of transportation facilities etc are some of the problems due to which Indian agro trade training institutes are not making progress. By the above information, it is proved that the hypothesis taken in this research paper is true.

Conclusion:

India is a developing country mostly known for its mix economy. Indian economy is mostly relying on three main sectors, i.e. agriculture sector, industrial sector and service sector. Out of these three sectors, the most contribution of GDP is come from agriculture sector. Today India's most of the population is depend on the agriculture sector. Due to lot of agro trading centers many farmers in India of small income group are now earning better. There are versatile trades of different production is located in the various villages of India. But there are lot of social, political, economical, skill based problems due to which these centers are not developed technologically and also authentically. The central as well as state government should take initiatives to solve thiese problems. For this they should establish one central committee. This committee should give suggestions to higher authority regarding all over development of these agro trading centers. For this they should chalk out the strategic planning and also manage the proper financial planning .If the Indian government do this, It should be definitely very beneficial for the agro trade training centers and by this way the new agro trade training centers will come to existence and there will come revolutionary changes in this era.

Bibiography

1. All the information taken in this research paper is taken by own study.

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Sustainable Development & Role Of Lampcs In Empowering Women Farmer Members, A Study In Reference To Koraput District, Odisha.

Dr. Seema B.Mishra
Lecturer, MICM, Bhubaneswar

Abstract

The slow pace of participation of women in the agricultural cooperative credit system in the district under study i.e. Koraput is a matter of concern. Hence an attempt has been made in this study to analyse the issues and challenges of Small and Marginal Women Farmer Members of LAMPCS in Koraput district of Odisha. It is found from the analysis that, the scope for development of women farmers (mostly small and marginal farmers) share in the wholesome activities of LAMPCS is pretty much high. Efforts should be taken in this line.

Introduction:

Women constitute 32.14% of the total workforce in Odisha. About 81.75 % of rural women's workforce engaged in pre and post-harvest activities. For empowerment of women farmers, the state agriculture policy 2013, had given emphasised capacity building of women farmers in post-harvest management area, skill development in food processing, and the extension of easy credit, etc. According to the Food and Agriculture Organization of the United Nations, "if women farmers were given equal access to resources (such as finance) unlike their counterparts, women's agricultural yields could increase by 20-30%: National agricultural production could rise by 2.5% to 4%, and the number of malnourished people could be reduced by 12-17%. " There On this thought number of schemes, programmes have been implemented through the various agency, to strengthen women farmers in the state. 86% of small and marginal farmers in India are having multiple issues of serious concern. Over six decades, since independence, the institutional efficiency attributing to the effective execution, monitoring, and assessment of policies formulated for improvising the farming community was always in the focus of planners. With rising rural migration by male, the entry of women into the agriculture arena became more. They play a vital role in use of rural natural resources and ensuring country's food security policy. So women's access to resources like money, agri inputs, market, land, and water should be ensured to accelerate the growth and strengthen the position of women in agriculture.

Rationale of the Study:

The availability of both farm and non-farm credit in time is one of the major components to enhance agricultural productivity and thereby profitability. In this regard normally, the question arises are whether the farmers especially female farmers belong to small and marginal categories are accessible to both FA and NFS institutional credit, whether the credit made available to them is adequate for farming, whether the micro-credit linkages with SHG/JLG for micro-enterprising is given due importance and whether Cooperatives are capable enough to render the services to the needy farmers timely and effectively.

Objectives of the Study:

Looking at the above stated backdrop, the objective of the study is:

- To analyse the issues and challenges in accessing credit from Cooperative (LAMPCS) by small and marginal women farmers and to give suggestion to improvise the situations.

Data base and Methodology:

Total 76 branches of commercial banks, RRB and its 38 branches (Utkal Grameen Bank), Koraput District Central Cooperative Bank with its 8 branches and 20 LAMPCS (Large Area Multipurpose Cooperative Societies) located in rural and semi-urban area of Koraput district during 2018-19 are catering the credit needs of the local people. The district Koraput, known for its unique socio-economic-cultural legacy and tribal population has purposively been selected for the study. There are 45 villages (out of 1997 Villages, in 226 GPs) not less than 2000 population are still deprived of banking facilities. Thus district is in an unfavourable position in enjoying fully, the fruits of economic development despite various policy measures of the government.

The study is mainly based on the issues of small and marginal women farmers working for various agricultural operations either as owner farmers or tenant farmers or labourers. In order to assess the participation of women farmers in agricultural credit operation through primary level cooperative societies

i.e LAMPCS, there are eight LAMPCS located in different localities of the district have been selected at random for the study. The present study is mainly based on the secondary sources of data collected during the year 2018-19 from various district statistics reports and annual reports of 8 selected LAMPCS of the Koraput district under study. The LAMPCs are largely engaged in crop loan financing. Total 18 number of mini banks are run by LAMPCS.

Literacy rate:

Sex ratio in the literacy rate was 38.92%, as per 2011 census, which was expected to reduce upto 20 % by 2016 with various government measures. Thus economic empowerment of women, reduction of gender disparity, and raising women's participation in every sphere of development are the primary focus of the district authority.

Women in Agriculture and Allied Activities:

The participation of women in agriculture and allied activities like horticulture, animal husbandry, fishery etc. analysed in terms of the flow of funds to women as a percentage of total plan outlay (2018-19) through different schemes were around Rs.567.33 Lakhs(around 35%), as depicted in Table-1. In this the share of Commercial bank was 84%, that of RRB was 12.4% and of Cooperatives, it was around 3.6%. This shows that even though agriculture is the mainstay, major source of livelihood, there was rising man migration to the urban area and increasing participation of women either as Cultivators, Labours, Entrepreneur. Still the allocation made for them through cooperatives is quite low.

Women in Rural Development Activities :

The percentage of funds to the total plan outlay allocated to the women beneficiaries through various rural development policies/schemes/programmes (Viz. NRLM and MGNREGS) was around 11175.61 lakhs as shown in Table-1. This shows that the income and employment of majority of women agricultural labour get supplemented by the opportunities created in rural development programmes.

Women in Industrial and Social service Activities:

The allocation of fund to the total outlay for women in the area of industry and minerals was 56.22 lakhs at 35% as observed from Table-1, that shows a fair opportunity for the women to explore more benefit from this sector. This shows that the benefit accrued to women beneficiaries from this sector is less compared to agricultural sector as a result of which disguised unemployment of women work force is often observed. With a share of 7979.84 lakhs efforts were taken for social development through women self help group.

Table:-1 Flow of Funds for Women out of Total Plan Outlay (2017-18)
(Rs in lakh)

Name of the sector	Total Plan outlay	Flow to women component plan	% of women component to total outlay
Agriculture & Allied Activities	1620.93	567.33	35
Rural Development (mainly under the Programmes like NRLM and MGNREGS)	31930.33	11175.61	35
Industry and Mineral	173.45	60.70	35
Social Service	22799.55	7979.84	35
Grand Total	56524.26	19783.48	35

Source: District Statistics 2017-18

The percentage allocation of funds for women empowerment is around 35% of the total plan outlay (2017-18). This shows that the fund allocated below 50% of the total in this head is one of the major challenges for the development of women in general and small & marginal women farmers in particular.

Women's access to credit and argi-inputs through LAMPCS:

The study of 8 numbers of selected LAMPCS (Large Area Multipurpose Cooperative Societies), covering 87 Gram Panchayats, operating in different GPs of Koraput district shows low women participation in becoming members, availing credit for agricultural and other purposes (Table-2). The average percentage of female membership, female KCC holders, female loanees and amount of loan sanctioned to female loanees to total in LAMPCS under study are found as 15.49%, 8.64%,12.39%, and 8.75% respectively, shows women farmers poor access to credit and lot of scope of improvement.

Table-2 Brief Profile of the LAMPCS under Study (2018-19)

Name of the Lamps	Total Membership	Farmer Membership	Total Female Membership	KCC Holders	Women KCC HolderS	% of female member	% of KCC holder	% of female KCC holder	Total No of Loanee	No of Female Loanee	% of female loanee to total lonee	% of finance to female lonee out of total amount financed
UMURI	9774	6630	1055	8758	942	10.79	89.29	10.76	4225	894	21.16	20.46
MULIPUT	7105	6145	788	6543	416	11.09	52.79	6.36	2030	416	20.49	15.11
GUDA	11113	9938		519		0.00		0.00	1685	42	2.49	14.84
MMA	12176	9150	1900	6315	947	15.60	49.84	15.00	1987	323	16.26	0
EIPDAR	12159	7415	2315	8812	765	19.04	33.05	8.68	2605	215	8.25	2.91
AGADA	8870	7666	586	2968	210	6.61	35.84	7.08	1485	54	3.64	4.25
SUNKI	5114	4123	2972	4853		58.11	0.00	0.00	1560	34	2.18	2.95
PADWA	5709	5631	1540	3153	340	26.97	22.08	10.78	1602	150	9.36	7.91
Average	72020	56698	11156	41921	3620	**15.49**	32.45	**8.64**	17179	2128	**12.39**	**8.75**

Sources:- Record of LAMPCS

Further, the maximum percentage of the loan sanction to the female loanee is pertaining to crops loan. The share of NFS loan is vey insignificant. The participation of women farmer members in the Board of Directors for managing the LAMPS is also found as quite low. However there is significant growth in WSHGs in the district to 19113. Out of which 13346 are keeping credit linkage and 70% of WSHG availed credit. Further, the LAMPCS are having inadequate manpower, technology, infrastructure, and above all funds, which makes their tasks difficult to render the services effectively. The Provision of critical inputs of farming and marketing linkages of their output are also found lacking in the area under study.

Findings:

1. The allocation of the fund made for women farmers by the state policy in the district is found low.
2. The income and employment of the majority of women's agricultural labour get supplemented by the opportunities created in rural development programmes.
3. The fund allocated to women in the social service sector is still insufficient, which shows an opportunity for them to explore more benefits from this sector.
4. The LAMPCS providing formal credit to the farmers are suffering from inadequate staff, infrastructure, technological know-how and funds causing major impediments for the accessibility to credit.
5. Women's participation in becoming members and availing credit for agricultural and other purposes is found quite low due to lack of ownership on land.
6. This resulted in few female KCC holders, female loanee and the amount of loan sanctioned to female loanee in LAMPCS under study are found quite less
7. Less availing of NFS loan, indicates lesser participation in enterprising activities in the area by women, exploring Cooperative credit channel.
8. To supplement the fact the number of SHGs promoted shows a better trend but the credit linkage made for various economic activities of SHGs through Cooperatives need urgent attention.
9. The Provision of critical inputs of farming and marketing linkages of their output effectively through LAMPCS are also found lacking in the area under study.

Recommendations:

1. Allocation of funds for small and marginal women farmers in agriculture and allied activities to be enhanced significantly.
2. The availability and accessibility of credit through cooperatives are to be ensured.
3. The functioning of LAMPCS is to be revamped.

4. The role of LAMPCS for the cause of women farmers & entrepreneurs needs to be redefined.
5. The provision of inputs for farming and marketing linkage for output to be ensured and LAMPCS are to be encouraged to support in this regard
6. Information asymmetry concerning various programmes/schemes meant for women beneficiaries in different sectors and sub-sectors to be minimised through proper extension services, training, and other such measures.

Conclusion:

The issues of small and marginal women farmers in Koraput district in various spheres of their activities need to be addressed to assure gender equality. When we talk of empowerment of women in agriculture and sustainable development, the discussion invariably focuses on access to and control of women over productive assets and their effective use for sustainable livelihood and income. Therefore securing property rights including the land rights for women and providing them access to different agri-extension services and markets would go a long way in improving the status of women farmers. This, in turn, would make agriculture more sustainable. The LAMPCS are to be made more viable and functional to address the issues of credit and other inputs along with marketing of agricultural products of the farmers in general and women farmers in particular. The initiatives at the government level to provide require incentives for the farm and non-farm activities of women farmers, knowledge dissemination regarding modern methods of cultivating remunerative crops, and access to institutional credit should be strengthened to improve their socio-economic status. This will not only improve agricultural productivity but also will minimise the problem of rural indebtedness.

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The Effect of Cinema on Foreign Language Learning Students With Special Reference to French Language

Anirudh Khandelwal
Research Scholar, Amity University, Rajasthan
Email- anirudh.khandelwal1@s.amity.edu

Abstract

The linguists have always been considered the cinema as an important tool in teaching and learning of French language. Many teachers prefer using cinema in their class for effective way of teaching the language. Cinema is one of the ways for students learning a foreign language to get accustomed to the culture of France during the corona pandemic, and the restrictions that the world is facing. It has become less and less feasible to travel to another country and thus cinema is the most natural way to show to the students the French world and French lifestyle. Hence, cinema is now an effective way of teaching the language, and along with that the theories that highlights its importance in teaching and learning. This paper deals with the theories related to language acquisition, for example, social capital theory by Pierre Bourdieu. Another theory is called Field Theory, which is given by Kurt Lewin. This paper tries to link these two theories with reference to cinema to talk about their effect on teaching and learning of French as a foreign language.

Key words: Cinema, Teaching, Learning, Culture, Language.

Introduction

Cinema is the reflection of the society and thus to comprehend it better, the language learners need to impregnate themselves in this domain too. Recently there has been an impetuous in the fusion between cinema and the language learning. There is a connection between cinemas and teaching. Broadly speaking, the effect that cinema has on teaching and learning of foreign language. The use of cinema in the foreign language manuals is to ease the integration of foreign culture among the French learning students. In higher level of manuals, like B1 onwards, we see many cinema excerpts in the books, which help students learn about the foreign culture. Hence, it is possible to use cinema individually for teaching purpose. It can be a very effective tool of teaching, as it attracts students to watch the movies, which is more entertaining than reading books and even more interacting and enriching in way of inculcating the cultural aspects among the students. Just as the Indian culture can only be described by the movies made in India, in the same way, the movies that are made in France correctly depict the cultural, social, and political situation of the country that cannot be described that accurately by Francophone countries. The French cinema is very useful to integrate students learning French language to get accustomed to the current world situation of France. By integrating cinema into teaching, the teacher tries to expose foreign language students with new culture, to forge their identities as a culturally, politically, and socially enriched person who can cope with the situations of the foreign country better than other learners can. This paper tries to verify the assimilation of cinematographic aspect, which students imbibe. The main motive of teaching cinema through incorporating theories is to make them understand the values, culture, tradition and all the other aspects that come with learning a new language. The students who learn a new language not only to learn new words, but also to use it and allow it to diversify their knowledge and accepting the cultural difference. Thus, this is a way of "cultural immersion" into the language. Also, as we all have witnessed the coronavirus pandemic, and how the world became further away from personal interaction and started using the online medium, along with musical and cinematic ways of learning via online platforms like YouTube, Facebook, Amazon Prime, Netflix, Hotstar and others, the craze of learning and understanding a language has taken a new turn. In this paper, we will be analysing the two theories given by two psychologists, namely "**Social Capital Theory**" of Pierre Bourdieu, and "**Field Theory**" of Kurt Lewin and try to apply it with cinema to see whether it can have a positive impact on students or can it become more attractive and efficient way of teaching of language.

Field Theory by Kurt Lewin and its Relationship with Cinema and Teaching

The field theory by Kurt Lewin is one of the most important theories in the teaching world. He developed this theory in 1930s. Lewin is the founder of modern social psychology. Gestalt therapy influenced Lewin's field theory. His theory talked about the impact that a society and environment have on a person's behaviour. Along with this, it emphasised on interpersonal qualities, individual personalities as well as situational variables.[i] For this, Lewin experimented on children, as their behaviour is to be developed. During his experiment, he controlled the child's environment for whole of the experiment

period. He observed that the study of behaviour is combination of psychological as well as social situation. According to him, the laws of psychology are not based solely on statistics, but on individual, his drive, life space, passion, affairs etc. The next thing here involves the two forces, the positive force, and the negative force. A positive force is a force, which drives a person closer towards his goal, and adversely, the negative force is a force, which drives him away from his goal. Here the desire is the problem in achieving goals. Once a person achieves his goals, his desire set him to another goal and the process restarts. There are three main factors in Lewin's theory: threat, goal, and barrier. To achieve a goal, person must overcome a barrier. This barrier can by psychological or physical in nature. Since these barriers' changes over time, the goals and threats keep changing throughout one's life. According to him, learning is a process in which a person relates to something and tries to make use out of it. It includes everything about a person, his past, his present, his future, his imaginations, his expectations, his goals, his life, all other events. Thus, everything that happens around a person defines who he is. Even more so his actions and the way he lives his life, the force fields, and how he responds to these events, his force fields, is known as his "life-space".[ii] Now that we know what the field theory is, we will try to relate it to the cinema and see if they are related or not. For this part, the field theory is divided into three parts**.** Since this theory is based on learning through children's development, the first part talks about the need to understand the environment of the person or learner concerned. The student who learns the foreign language is an Indian, so his environment is India. Since there are so many cultural aspects, which differ from one country to another, there are some changes as to the learning and understanding of a student, who knows the Indian culture but not the French culture. The second part is further divided into sub parts, which talks about the factors involved in the learning as per the field theory. The third part involves the process of learning according to the field theory.

The environment of the learner

The field theory mainly focuses on the environment of the learner. We know that learning a new language is a challenge, and in an Asian country like India, many people do not have resources to travel to France to learn more about the language and get in touch with the French people so that they can get that native touch which is required to learn a language. This is where cinema comes in. Through French cinemas, the learners can peek at the French culture without having to go to France, and thus explore more about the language that they are learning. France is one of the developed and elite countries, and the French language is one of the most subtle languages in the world. In addition to this, the French language is the "language of love". These are some facts, which the movies can prove. The use of vocabulary and grammar in a language is very different and differs from situation to situation. Books and teachers can only teach to an extent, but the presence of native person who can show that is even better. In comparison of two students, an Indian teacher, who is a master of French, teaches one of them and a French native, who is a resident of France, teaches another one. When both of them speaks French, one can clearly note out the difference in speaking, vocabulary, explanation, and many more. One of the most distinguished features that instantly make the language learner stand out from the crowd is his accent. The moment one starts speaking French with the perfect accent, or with the same accent that French people speak with, makes their identity as a distinguished French learner or expert from rest of the people learning French. To teach the language, one must take care of all competences simultaneously. A teacher and a book can teach a student, but today's books include cinema in their chapters because it is the most effective way of teaching. In Saison 3 book, this is used to teach B1 or third level students. It has so many videos in each chapter, which made the study fun, and many teachers already prefer Saison to teach students at all levels, because there is audio, video lessons included in all levels, that is more interesting and more attraction seeking. Furthermore, in Saison B1, there are eight movie citations[iii], six from Version Originale 3[iv], four in Alter Ego 3[v], two in Echo B1.1[vi] three in Echo B1.2[vii], one in Edito B1[viii], two in Edito B2[ix] three in Saison 4[x].

We saw that cinema is a very important tool of teaching a foreign language. All these foreign language books have cinema integrated in them. The teachers and learners know that the transition of students from level 2 to level 3 is difficult. Thus, cinema has always been a proven cog in the wheel of this transition. All the level 3 books have lot of cinemas included in them, which indicates the fact that the cinema helps ease the transition towards a new and bigger level of learning a language.

Factors involved in learning of foreign language as per Kurt Lewin

Kurt Lewin proposed a model of learning which involved various factors, which influence learning at different levels.

Life Space

The life space of a person is one's understanding and reaction to everything that is happening around him. While learning a new language, a student tries to encompass everything happening around him has never

happened to him before, he tries to grasp as much as he can. Gradually, a person finds himself at more ease in learning of new language. The more time students start spending with language, they started get the grip of it. In other words, people adapted to the change of learning a new language and included it into their life space. After doing that, it became easier. Lewin said that learning is a process by which a person constantly interacts and add it to his inventory to improve his skills. In addition, sometimes he alters his habits according to the new things he learnt and gets rid of the old one. In the case of learning a new language, a person interacts with the new environment and continuously upgrades his inventory and adds what he has learnt. Sometimes, it also brings changes in his habits.

The Pull and Push

Another thing Lewin focused on was the pull and push, which happens at every stage in human life. During one's life, i.e., his life space, at different times, one must make decisions, which involves moving towards a particular situation, or away from it. Learning a new language is no different. There are so many factors, which motivate a person to continue learning a new language, for example, getting a lucrative job, meeting new people, etc. There are also some factors, which are responsible for pushing people away from learning a new language, for example, financial situations, etc.

Vector

One of the most important factors, which could also be deciding factor in the field of learning, is vector. It is a force, which influence the movement of a person towards or away from a particular situation. It is divided in two parts: Restraining Force: A force that restrains a person from achieving his goal or push away from what he aims to achieve. In learning, the difference in the languages that we know, and the difficulty of French language is a reason many people feel like giving up learning a new language.

Driving Force:

A force that drives a person closer to his goal or motivates him to achieve his goal. In learning, one factor of learning a new language is to become a professor of that language, or because one loves the culture of a language, and decides to learn the language. What restrains a person from learning a new language is the difficulty of a new language. Fortunately, cinema is there to save people from trouble of facing difficulty of interacting with a new language. There are countless films out there available for all levels, which is very easy to access, and are of immense help in easing the transition to a new language. The goal of Lewin's theory is to find a way to strengthen the driving force, and to weaken the restraining force. Hence, the integration of cinema in teaching and learning of foreign language is because of easing the learning process, and thus, strengthening the driving force and weaken the restraining force.

Social Capital Theory by Pierre Bourdieu

Pierre Bourdieu have coined the term "Social Capital Theory". Here he talks about the capital that a person earns throughout his life while interacting with people, and thus gaining experience, which he termed as "capital". For him, the capital of a person is measured individually, not collectively. It also includes a person's social status and his position, which is very important as it helps him impose power on the socially weaker section. The stronger a person is socially, the more he can impose himself on the other weaker sections and the more his value will be. Since the ability to interact with environment differs person to person, the spread of this power is not uniform; it depends on the ability of a person to develop his own goodwill in the society. For Bourdieu, one earns the social capital through his social networks, his connections, and the goodwill earned his social, economic, and cultural structures.[xi] The power and status have the immediate ripple effects on the society. Richer and powerful people usually impose themselves on the other sections because what it is worth what these people say. People will usually listen what Ambani have to say, rather than what Rishabh has to say. Now, for understanding Bourdieu's social capital theory in the field of teaching and learning through cinema, we must divide it into parts. First part talks about the social position and status, second part talks about the goodwill of a person and lastly, the third part talks about the forms of capital according to Bourdieu.

Social Position of students learning French language

The students, who learn French language, usually carry a good social position in society. As learning a foreign language is always costly, not everyone takes coaching classes to learn the language. Sometimes people learn the language on their own. The learners of foreign language are always considered to be of a better social position than others, regardless of how they learnt it. It all comes down to better knowledge and better understanding of a different culture, the culture people have not explored yet. In addition, France has always been considered as an elite country, and its language is very popular and attracting. How do people get the image of France being an elite country? They have never visited France. One of the possible reasons is cinema. People have seen France in movies, their culture, their language, and all the things that movies showed them, which made an image in their minds about France. Hence, the

social position of students learning French is related to France. Naturally, the language influences the point of view of people of looking at others. Thus, cinema plays a very important role in deciding the social position of learners in the society.

Goodwill of a person in French world

Bourdieu talks about the goodwill as a deciding factor of person's social status. Goodwill is earned by continuous interaction of person in the society. The more his interaction with people, the more people around him know him. A person who only restricts himself in his own sphere, and do not interact with anyone, do not have a social status, as nobody even knows he is a part of the society. Conversely, an active person, who is continuously in touch with everyone around him, tends to learn more about people and this understanding will finally enable him to get into the social sphere where he can survive and crave his own place. In language of another country, one of the ways of developing goodwill is to get in touch with people. Another way to earn goodwill around people, and French community, is to get in touch with movies, and explore more about their culture, tradition, religion and other things, which will be of tremendous help to learners, and they will be more precise as to the local and cultural things.

Forms of capital in relation to cinema

Bourdieu talks about three forms of capital namely, economic capital, cultural capital and social capital.

Economic Capital

Economic capital is related to money aspects, or the capital that can be converted into money. It is related to institutionalised form of capital. Learning a new language is a challenge for many. Most of the time, the problem relates to money. However, now a days, everyone has access to internet, and thus, everyone has access to cinema. Improving learning skills has never been this easy.

Cultural Capital

Cultural capital is further divided into three parts:

Embodied State

It exists in the long-lasting disposition of mind and body.

As for this state, it takes time to gain this state, and these changes over time. However, embodiment is one of the most effective ways of learning. Once a person has embodied something, it is very hard to let it go. For example, there are some phrases a person keeps on repeating, because it is catchy, or it is rhythmic, and he cannot forget it.

Objectified State

Objectified state is in the form of cultural goods, for example, pictures, books, dictionary, instruments, machines, etc., which are the trace of realisation of theories or critiques of these theories, problematics, etc. This is the form of capital that a person gains over time. After watching many movies, a learner can point out that, instead of saying bonjour or Salut, he can simply say "coucou", that no book will teach him.

Institutionalised State

This state includes the form of objectification, which must be set apart because, as will be seen in the case of educational qualifications, it confers entirely original properties on the cultural capital, which it is presumed guarantee. The institutionalised state in foreign language teaching and learning is related to the cost of the foreign language acquisition. Learning a foreign language is not a cheap option, hence, many people do not pursue it. Fortunately, there are learners who are very enthusiast in learning a language that they go online and learn the language by the help of beginner videos, cinema, video lectures, etc., and this way the cinema is a tool that anybody can use according to his own convenience.

Conclusion

The cinema has proven itself a valuable tool in teaching and learning of French as a foreign language. The integration of cinema in the teaching has changed the dynamics of teaching and made it more interesting. Students are now much more interested in learning a new language, even more so exploring the language and culture on their own. These two theories have proven beyond doubt that cinema is a reliable medium of teaching on its own. It has been considered as an auxiliary mode of teaching by integrating it into the books, but we have seen, along with the psychological theories that, it is as effective in teaching without its integration as it is with its integration with cinema.

[i] (Observatoire Le Lab Le Musee L'agora & Vigie, n.d.)
[ii] (*Lewin's Field Theory of Learning _ Education*, n.d.)
[iii] (Marie-Noëlle Cocton et al., 2015)
[iv] (Monique Denyer et al., 2011)
[v] (Catherine Dollez & Sylvie Pons, 2007)
[vi] (Jacky Girardet & Jacques Pécheur, 2010a)

[vii] (Jacky Girardet & Jacques Pécheur, 2010b)
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Odonata assemblage at a small garden near Harsul lake (Aurangabad city)

JB Aghade[1], SA Saraf [2]
[1,2]Department of Zoology, Government College of Arts and science, Dr. B. A. M. University, Aurangabad.
Email. jayeshaghade@gmail.com
Email. surekhasaraf@gmail.com

Abstract:
During a study done from December 2021 to April 2022, 5 Odonata species belonging to 5 taxa, 3 families, and 2 suborders were gathered from a fairly limited area of Harsul Lake Garden Aurangabad city. The Ashnidae family has the species (2), followed by the Coenagrionidae family (1 species), and the Libellulidae family (2 species).

Keywords: Assemblage, Diversity, Harsul lake garden, Odonata.

Introduction:

Odonates are generally the main predators in aquatic ecosystems since they are a flagship group. Odonates can be found in almost every type of freshwater habitat on the planet. Though the majority of the species are habitat-specific, some exploit man-made water bodies and have adapted to urban environments. They are a good biological indicator of environmental changes due to their sensitivity to environmental variables. (Brown K. 1991). Odonata can be found in a wide variety of environments, from permanent running streams and lakes to small transient rain ponds. Adults are visible, easy to record, well-studied taxonomically, and vulnerable to habitat changes caused by human activity. (Brown K. 1991). With 5,952 species globally, the order Odonata is quite large, with 474 species in 142 genera and 18 families found in India. The Western Ghats of India is extremely diverse, with over 174 species, including 56 endemics. (Prasad M et, al. 2000).

Numerous pieces of literature on taxonomic information on Odonata of India and the Western Ghats, which include, have been published in recent years. Kulkarni and Subramanian have published an account of the odonates of Maharashtra's Mula-Mutha river basins. (Kulkarni AS et, al. 2013). The goal of this study is to look at the variety and richness of Odonata assemblages in a tiny, disturbed habitat in the heart of Aurangabad, which is a highly urbanized city. As a result, it will be easier to assess the critical ecological conditions that promote Odonata variety and richness.

Materials and Method:

On the western fringe of the Deccan plateau, Aurangabad city (Maharashtra, India) is approximately 568 meters above sea level. The study area is a little garden near a lake (19.9282° N, 75.3368° E) in Harsul, Aurangabad, Maharashtra, with an area of around 500 sq. m adjacent to a lake (Fig-I). The study location is surrounded by a lake. The results reported here are based on field surveys and investigations conducted by random sampling method throughout the months of December, January, February, March, and April in the year 2021-2022. Photographs of odonates were taken with a point-and-shoot camera.

Odonata key identification was used to identify the specimens that were photographed. Specimens with suitable labels containing their scientific names and details about specimens with the date of the collection were properly stored in the laptop after identification. The field has been recognized. The number of species seen was recorded in a field notebook and the time and date.

Fraser and Subramanian gave identifying keys that were used to identify the Photograph specimens. (Fraser FC et, al. 1993). Subramanian's Odonata taxonomy and binomial names were followed. After Fraser and Subramanian, the diagnostic characters for identification are used. (Fraser FC et, al. 1993). Some of the specimens have been photographed and are available for viewing. The abundance of Odonates in the study area was classified (as Very common, Common, or Rare). (Tiple AD et, al. 2012).

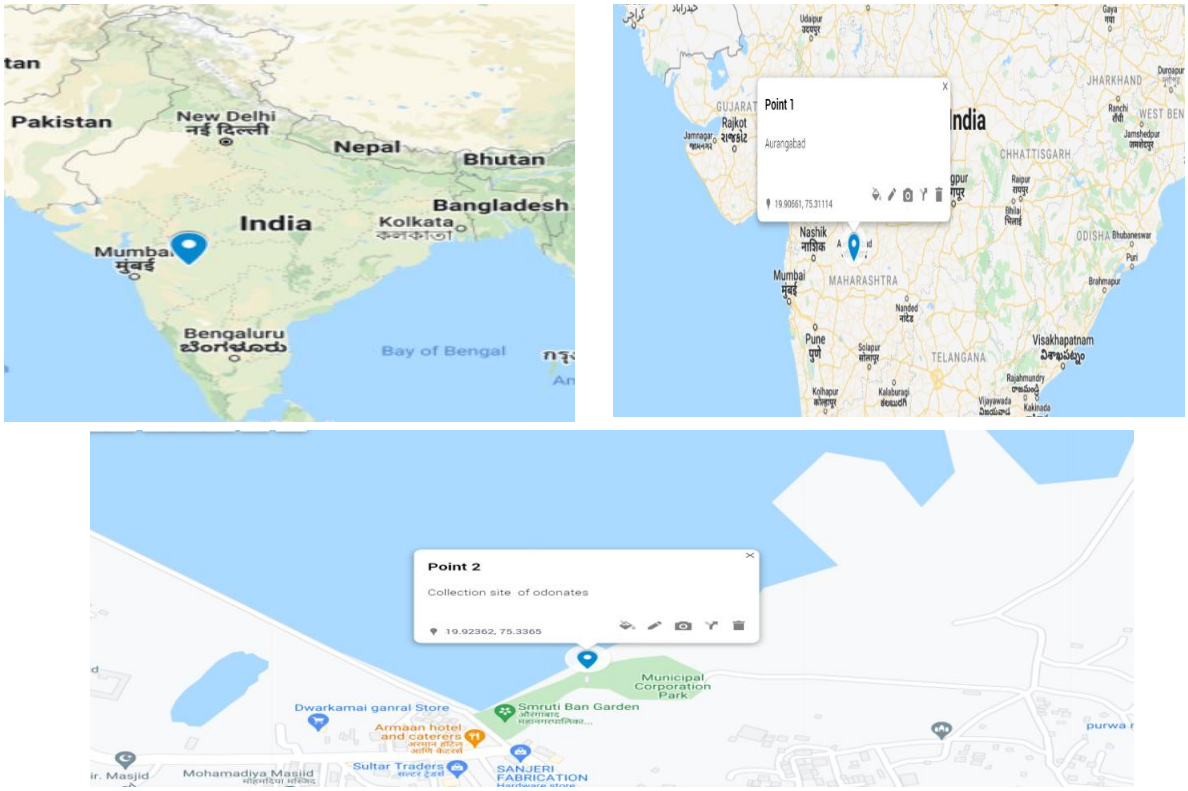

Fig 1-3: Map showing the study site, Harsul Garden, Aurangabad city, Maharashtra, India.

Results:

A total of 53 Odonates were discovered. The current investigation discovered 5 Odonate species belonging to 5 genera, 3 families, and two suborders.

Systematic Account:

Order: Odonata

Sub Order: Anisoptera

Family: Aeshnidae

Genus: Aeshna

Aeshna affins

Description: Hawker is a little migratory species, Blue eyes, male. Blue patterns on a dark abdomen. Brown eyes, female. The abdomen is brown with yellow streaks.

Latin Name: *Aeshna affinis*

Habitat: Often seen hawking along reedy, wet ditches. In its natural Mediterranean habitat, it breeds in standing water.

Status & Distribution: The Southern Migrant Hawker has been nesting in the Estuary since 2010. Migrant influxes have been more common in recent decades, with the majority of sightings originating from the southeast coast and Asia.

Similar Species: Other Hawker species may cause confusion, Southern Migrant Hawker can be distinguished by its: Colouration,Segment 2 has a distinct triangle marking On the back of the thorax, there are few antehumeral marks.

Identification Notes: 60mm in length, Down the abdomen, paired dots, Segment 2 has an elongated triangular marking and on the back of the thorax, there are little antehumeral marks.

Genus: Anax

Anax imperator:

Description: The largest Dragonfly in the UK and Asia.Male: Sky blue abdomen with a dark line running through it.Female: Green abdomen with a dark line running down the middle. A blue abdomen is occasionally seen.

Latin Name: *Anax imperator*

Habitat: Large, well-vegetated ponds and lakes are the most common habitats, but canals and slow-moving rivers can also be found.The female lays her eggs on floating pondweed by herself.

Status & Distribution: It can be found all over the world, including most of England; its range has expanded dramatically during the 1990s. The species has been recorded in Scotland since 2003, and it can be found along the southern and eastern coasts of the country, as well as in Asia.
Similar Species: May be confused with other Hawkers.Can be differentiated by its: Large dimensions, Abdomen drooping (in flight) and colours of bright blue and green.
Identification Notes: 78mm in length, Costa in bright yellow (leading wing vein).Thorax is apple-green. Eyes that are green or blue, the dark line runs down the center the abdomen, It rarely lands and even eats its prey while in flight and they frequently fly with their backs curved slightly downward
Family: Libellulidae
Genus: Orthetrum
Orthetrum cancellatum:
Description: A dragonfly of medium size with a tapering abdomen.Males have a blue and black abdomen that darkens toward the back. Females have a yellow abdomen with a dark ladder pattern.
Latin Name: *Orthetrum cancellatum*
Habitat: Favours open water and bare spots near the coast in lakes, slow rivers, ponds, and occasionally marshy areas. Male patrollers frequently take a break in the sun on bare ground.
Status & Distribution: In southeast England, it's quite frequent. Since the late 1980s, this species has expanded rapidly in both the UK and Asia, however, it was only discovered in Scotland in 2006.
Similar Species: Yellow pterostigma on Keeled Skimmer is not dark, the abdomen of males is not darkly colored, instead of the ladder pattern, females have a thin black line running down the center of their abdomen and Chaser Black costa (not yellow) is rare.
Identification Notes: 44-49 mm in length, the cost of the wings is yellow (leading wing vein), Pterostigma dark (wing spots), females and immature adults are similar and they skim the water's surface, flying quickly and low.
4] *Orthetrum coerulescens*:
Description: Dragonfly with a prominent dorsal keel (dark line down the middle of the back).
Male with blue-grey eyes and a blue body. female features include an orange abdomen and brown eyes.
Latin Name: *Orthetrum coerulescens*
Habitat: Wet heathland habitats with pools and streams are preferred. At such locations, it may be found resting low in the heather.
Threats: Unpredictable rainfall due to climate change and Pollution removal and drainage.
Status & Distribution: The species has a patchy distribution over Asia, but is more frequent in the west. Since 1990, in India.
Similar Species: Similar to the Black-tailed Skimmer and the Scarce Chaser. The Paler Wing Spots of the Keeled Skimmer differentiate it. costa in yellow (leading wing vein), On the rear of the thorax, there are faint antehumeral stripes and keel black.
Identification Notes: 40-44mm in length, The abdomen is slim, with a prominent dorsal keel (dark line down the middle of the back), Costa in yellow (leading wing vein), Pterostigma, yellow or brown (wing spots), On the rear of the thorax, pale ante-humeral streaks, Females and immature adults are similar. The wings are frequently yellow in color and the wings are frequently held forward when at rest.
Order: Odonata
Sub Order: Zygoptera
Family: Coenagrionidae
Genus: Ceriagrion
5] *Cerigrion tenellum*:
Description: Reddish legs, eyes, and wing markings distinguish this species from the other two red Damselfly species. Male: Red abdomen and black thorax. Female: Red/black abdomen and black thorax.
Latin Name: *Ceriagrion tenellum*
Habitat: bogs in southern India and west Bangladesh have shallow pools, seepages, and streams.
Threats: Habitat loss and fragmentation, as well as changes in hydrology such as drainage that diverts water away from existing seepages and flushes. Plant succession and invasion wreak havoc on unmanaged areas.
Status & Distribution: The World Odonata Red List 2008 lists it as Nationally Scarce.
Similar Species: Red Damselfly with Black Legs, Larger. On top of the thorax, black pterostigma (wing dots) and larger coloured antehumeral stripes.
Identification Notes: Redlegs, 31mm in length, thorax bronze-black on top and pale yellow on the side, red pterostigma (wing dots). Red abdomen in males and Erythrogastrum females have a completely red

abdomen. The red and black abdomen of the Typica form. The abdomen of the Melanogastrum form is black.

Plate 1: A: *Aesha affins*; B: *Cerigrion tenellum*; C: *Orthetrum cancellatum*; D: *Anax imperator*; E: *Orthetrum coerulescens.*

Table 1: Odonates from the research area: taxonomic composition, occurrence, and seasonal variation.

Sr. No.	**Species**	**Family**	**Sampling Data**					
			Actual Photograph			**Observed Data**		
			Dec.-Jan **(**Post-monsoon)	eb.-Mar. (Post-Monsoon)	April (Summer)	Dec.-Jan **(**Post-monsoon)	eb.-Mar. (Post-monsoon)	April (Summer)
1	*Aeshna affins*	Aeshnidae	1			2		
2	*Anax imperator*	Aeshnidae	1	1	1	2	6	2
3	*Orthetrum cancellatum*	Libellulidae		1		2		
4	*Orthetrum coerulescens*	Libellulidae		1	1		7	2
5	*Cerigrion tenellum*	Coenagrionidae		1			20	2
Total number of Individuals			**2**	**4**	**2**	**6**	**33**	**6**

Table 2 shows the abundance of Odonata in the study area.

Sr. No	**Family**	**Species**	**Status**
Suborder: Anisoptera (Dragonflies)			
1	Aeshnidae	*Aeshna affins*	Rare
2	Aeshnidae	*Anax imperator*	Very Common
3	Libellulidae	*Orthetrum cancellatum*	Common
4	Libellulidae	*Orthetrum coerulescens*	Common
		Suborder: Zygoptera (Damselflies)	

5	Coenagrionidae	*Cerigrion tenellum*	Very Common

Discussion: The water at the research site is perennial and covered in floating macrophytes. Animal excreta, plastic bottles, brick and cement wastes, and other degradable and non-degradable contaminants pollute the water. Dragonfly habitat selection involves three steps: biotope selection, habitat selection, and oviposition site selection. (Corbet PS. 1999). For some environments, macrophytes play an important role in determining Odonata assemblages. (Clark TE et, al. 1996).

Conclusion:

This research shows how a modest man-made ecosystem in the center of a highly industrialized city may support a significant portion of the species variety on a broader scale. It is a source of concern that urban and industrial expansion in Aurangabad is destroying Odonate habitat. This small section of stagnant water in a lake has an abundance of Odonates, forming a small hotspot. Because they support a good aggregation of aquatic/semi-aquatic insects, these small hotspots should be maintained and kept pollution-free across the city limit.

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Depiction of War and Dark Reality of War in Selected War Poems in Twentieth Century

Assist. Prof. Jadhav Ganesh Shankarrao
Department of English, Late Ramesh Warpudkar Arts, Commerce & Science College Dist.: Parbhani. 431516. Maharashtra. India.

Abstract:-

War is one of the major social problems facing the world today. War has plagued humanity since time immemorial. Many countries have to go through this experience at some point in their lives. It can cause great emotional trauma and grief to those left behind by the dead. Experiences and emotions related to war have always inspired poetry, prose and literary music. War literature often provokes strong reactions. War literature is powerful. War literature can provoke emotions that some would like those emotions should not to enter. This became clear after World War I when some people felt that certain war materials would affect the government's ability to persuade civilians to take up arms. It can also reduce the tendency to fight. It can also be seen as a negative reflection on those who fought and sacrificed. World War shook the foundations of the Western world, causing social upheaval that left an immediate and lasting impression on every aspect of society and culture. And experienced a wave of social and artistic change as a direct result of the war. Literature is one of the cultural areas most affected by the war. World War literature often reflects and critiques the horrors of war and provides a dramatic transition to societal changes and pre-war and post-war operations. Literature is one of the cultural areas most affected by the war. World War literature often reflects and critiques the horrors of war and provides a dramatic transition to the changes taking place in society and to pre-and post-war operations. During the war many social, political and economic changes took place and any writer of that time felt the need to speak out against the flaws in their society, sometimes even risking their lives in the trenches. The new style of warfare gave the soldiers an unprecedented amount of time to reflect on the wars they had fought; Not only in the literal sense, but the battles of mind and soul that they endured were no less than the hellish conditions they endured. Literature has become a common way for soldiers to get to the reality of war, whether to disagree with it or to understand it.

Keywords: - War, Literature, Culture, Society, Patriotic, Death.

Introduction:-

A war poet is a poet who takes part in wars and writes about their experiences or poems about war. These war poets are also called trench poets. The word war poetry mainly refers to poems written under the direct influence of the First World War. He is also called a romantic opponent. We used to have war poets, but after World War I, these types of poets and poems come in the form of 'war poems'. Poetry is the best way to express one's feelings and expressions during a war. Another major reason for writing war poems is to show a true picture of war. It also helps to spend time and creates a sense of honour through war poetry. It used gruesome and showy images that deviated from the contemporary poetic tradition. It uses the true language of the people involved in the war and realistic documentation of war with all brutality. War poetry captures a theme that has been passed down from generation to generation, regardless of the age from which it originated. It seeks to create new languages, which later generations use as a framework for understanding war history.

Beginning with the Anglo-Saxon period, English war poems were written by a large number of civilians who had no real experience. So what he wrote was either his thoughts or an idea of how the war happened. With the extraordinary flourishing between 1914 and 1918, war poetry established itself as a genre. And although thousands of soldiers were poets, only a few of them are remembered today. World War I began in July 1914, and lasted until Christmas of that year; but in reality, it lasted till 1918. As a result, young people from all over the world were called up to join the army and perform their duties and services for the motherland. Thousands of young men enlisted in the army to play their part in the war, with only one thought in mind, that is, to take part in the war is an honourable act and to die for the country is to be brave. These young men enlisted in the army had no idea how long it would last, and how much destruction it would cause. When the war broke out in 1914, Thomas Hardy, Rupert Brooke, Lawrence Beanian, and many others began to inspire their countrymen with their patriotic poetry. Here, we are going to compare some of the poets of World War I and their poetry, and, did they all have the same war ideology, or did they have some differences of opinion, and if so, how much? As long as the war is going

on, men have written poems about it. The story of World War I has been glorified over the last hundred years by the work of great men like Oliver Wendell Holmes Sr., Walt Whitman, Isaac Rosenberg and Joyce Kilmer. Now that operations in Iraq and Afghanistan have ended, we look forward to the emergence of a new generation of war poets.

Selected War Poets and Their Poetry:-

Edward Thomas:-

Philip Edward Thomas was born in London in 1878, the eldest of Welsh parents. Born with talent, the young Thomas created essays on rural topics that were featured in the weekly paper. He was educated at Lincoln College, Oxford. While in Oxford, he met his wife, Helen Noble, and their son, Morphine, who was born before he graduated. After graduating, he became a literary critic as well as a poet, editor and writer. Thomas and his wife had two more children, daughters Bronwen and Myfanvi. Although he was long depressed, he worked incredibly well and was the first to recognize new poets like Ezra Pound and Robert Frost. In 1914, he first met Robert Frost, who encouraged him to try to write poetry. In 1915, Thomas the Artist joined the Rifles during World War I. Thomas 'unit advanced on Flanders but was killed in an explosion of Thomas' shell on April 9, 1917, the first day of the Battle of Aras. During his lifetime, he was nicknamed Edward Eastway, and six of his poems were published under that name. Apart from those six, none of his other poems was published before his death. He was buried in Agni Military Cemetery in France.

"Rain":-

Rain, written by Edward Thomas, describes the speaker's relationship to death as he contemplates the future in the trenches of World War I. The poem begins with the speaker saying that the rain is constantly falling on the roof of his "separate hut". His condition is not good. The speaker is alone, in a ditch, somewhere on the battlefield of the First World War. While there, he thinks of his death and the nature of his death. He goes on to describe how bad the rain is. He has been able to wash it "clean" for a long time. By doing so, he has revealed himself to be a love on which he can depend. In the last lines, the speaker seems to turn from any "perfect" because it cannot be trusted. Although death is a constant.

Blessed are the dead that the rain rains upon:
But here I pray that none whom once I loved
Is dying to-night or lying still awake
Solitary, listening to the rain,
Either in pain or thus in sympathy

In the above line has said about the speaker goes on to describe the nature of rain and how it affects oneself. He begins by referring to the "dead" on the way to the rain. Wherever they are, they are "blessed" as long as they are touched by the rain. It comes as a purifying force, helping to wash away the stains of war and the great tragedy of death. From where the speaker is sitting, in his hut, he "prays [that] those whom he once "loved" are no longer alive. He knows the loneliness of his situation and does not want it on anyone. The speaker hopes his friends and family are safe, "not dying tonight or still awake/alone." This section ends by recognizing that some people in this section may be "sympathetic", thinking about those they love in private. Either way, it's not a wish for his loved ones.

Wilfred Owen:-

Wilfred Owen (1893-1918) is known as one of Britain's greatest war poets. Writing from the perspective of his intense personal experience at the forefront, his poems, which include *'Songs for Destined Youth'* and *'Dals at Decorum East'*, bring to life the physical and mental traumas of war. Owen's goal was, to tell the truth about what he called The Peat of War. He was born in 1893 into a middle-class family near Oswestry, Shropshire, Owen was the eldest of three. His father, Tom Owen, was a railway clerk, and his mother, Susan, was from a devoutly religious family. In 1915, Owen enlisted in the army and in December 1916 joined the 2nd Manchester Regiment at Somme and was sent to France. Within two weeks of his arrival, he was commanding a platoon on the front line. During heavy gunfire, in constant danger of gas attacks, he wandered miles and miles through trenches in the water. The brutal reality of the war had a profound effect on him, as he told his mother in letters. His poems *'The Sentry'* and *'Exposure'* record specific tests of this period. In April, after the shell flew into the air, Owen took refuge for several days in a hole near the body of a fellow officer and was soon diagnosed with shell shock. In June 1917, he was transferred to Craiglockheart War Hospital near Edinburgh, where he spent four months under the care of the famous doctor Captain Arthur Brock. Here Owen wrote many poems and became the editor of Hydra, a hospital magazine. He also met fellow poet Siegfried Sassoon, who gave him significant support and encouragement in the literary friendship that transformed Owen's life.

"**Futility":-**

"*Futility*" is a poem by Wilfred Owen, a British soldier in World War I. Written in 1918, it adorns an anonymous soldier lying dead in the snow in France, in recognition of the inevitability of death. There is a given tone, which underlines the speaker's action of mourning the "futility" of life in the face of death. Move the dead soldier into the sunlight. His warm touch would wake him up in the morning, reminding him of the fields filled with seeds. Until this icy morning, he always woke her up on the battlefield of France. If anything can awaken him now, the kind old sun will know about it. Think about how the sun allows the seed to grow as it awakens and how it allows human life to grow from the earth, which was once a barren, cold planet. Dead bodies — still precious, full of nerves and warm Is it hard to move now? Will he die because of the origin of life on earth? Why would useless sunlight bother to wake up the earth? Owen's *"Futility"* resembles an unknown soldier lying dead in the snow in France. The speaker begins with a hopeful tone, the sun wants to "awaken" the dead body, but it is confusing to know that death always triumphs over life. Through this change of tone, the poem uses the dead soldier as a catalyst for larger, deeper mourning: the "futility" of the act of creation in the face of the inevitability of death. The poet's confident description of the sun's power to nourish life in the first verse differs from the second verse expressing doubts about life's purpose. The speaker's first response to seeing a dead soldier is "move him to the sun," because the sun has awakened him "always" for a lifetime. Even if the soldier dies, the speaker is sure that the old sun will find a way to resurrect him. Even though the sun can "wake up" the seeds and keep the surface of the distant star "warm", it cannot resurrect a fallen soldier. The speaker is puzzled as to how something as precious and beautiful as life can be lost before death, and raises an eloquent question to underline its impact: Anxious, still warm, and too hard to shake? "The dead body, though surrounded by warm sunshine, will never come back to life. The speaker then asks," Is that why the soil was raised? "("Earth" refers to the earth from which man originally came — a common notion in creation myths around the world, including the Bible), expressing disbelief that life exists because it always defeats death.

—O what made fatuous sunbeams toil
To break earth's sleep at all?

In the last two lines of the poem, the speaker sadly wonders why "meaning" or meaningless, "sun rays" help to create life on earth, when that life eventually dies. The speaker's vision expands to include all life beyond the dead soldier. Rather than just mourning for a particular person (whose name the poem doesn't even bother with), the poem is dedicated to mourning the power of death over life - an idea that has been extended in the context of war. Although there is a hint of hope in it, the tone of the poem is ultimately mournful, dubious and depressing. When located in a historical context, these tonal points make sense. Wilfred Owen was a British soldier in World War I and was therefore surrounded by death. No matter how many sunny days came during the war, death probably dominated his mind, this attitude manifests itself in "futility".

Conclusion:-

The differences in the writing of those who have no experience of war or who were soldiers can be easily noticed. The earlier war was presented as a brave, honourable, knightly, noble event. In his poems, he presents death as a sacrifice that immortalizes the soldier. But the poetry and attitudes of the soldiers who fought in the First World War were completely different, seeing their lives always in danger, bloodshed, wounds, seeing their soldier friends die, and the trauma of living in the narrow, dark. And the suffocating trenches and, most importantly, away from home, with the possibility of being buried somewhere abroad, deprived of all funeral rites, were for them a new, sad and dark, but real reality of war. So they worked hard to write down their experiences and reveal the hidden truths about war. Eventually, the so-called notion of war being brave and noble was destroyed. And so 'war poetry' became 'anti-war poetry'. War poems capture the darkest moments in human history and are also the brightest. From ancient texts to modern free verse, war poetry explores various experiences, celebrating victory, honouring the fallen, mourning for loss, complaining of oppression, and rebelling against those who turn a blind eye. War poems include familiar, surprising, and disturbing. These poems are remembered for their lyric mystery, insights, power to inspire, and role in historical events.

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Mahatma Gandhi's Vision Of Ture Swaraj Is Attainmnet Of Moral Elevation

Dr. Govind Digambar Kokane
Associate Professor, Department of English, Dr. Babasaheb Ambedkar Marathwada University, Sub-Campus, Osmanabad 413582.
E-mail- koknegovind@gmail.com

Abstract

Mahatma Gandhi was a great leader in India's freedom struggle against British colonialism. He practiced truth and non-violence. He assumed the leadership of Indian National Congress in 1921. He launched Quit India movement against British people in 1942. He attacked modern civilization and machinery. Mohandas Karamchand Gandhi wrote Hind Swaraj or Indian Home Rule in 1909. In it he has expressed views on modern civilization, Swaraj, and mechanization etc. Mahatma Gandhi has written about problems faced by the humanity and above all his home country, India. He describes the suffering of India under British colonization. He delineated the causes of the problems and the possible remedies thereof. The book is written in dialogue form. There are two characters, a reader that is Indian countryman and an editor that is Gandhi. The reader asks the questions about the current colonial situation while the editor provides solutions for the problems of colonialism. Gandhi advocates for "Home Rule." He is of the view that Indian should get self rule. They should get it through non-violence. According to him the way of violence is the coward's choice. Independence should be gained through passive resistance, soul-force. Home rule should not be the same style of administrations as the British have been doing. The style of Government should be based on Indian cultural value system. Mahatma Gandhi firmly believed that India should get real freedom not false. Charles Kingsley makes distinction between two kinds of freedoms:

Introduction

There are two freedoms- the false, where a man is free to do what he likes; the true where he is free to do what he ought. If we ponder over the seventy years of Indian independence, we will come to know that it is not the real freedom envisioned by our freedom fighters. People are yet exploited by the brown. We have to yet work hard to get real swaraj. Gandhi had written the original book in Gujarati. The book, Hind Swaraj teaches the gospel of love instead of hate. Mahatma condemned the modern civilization severely. According to him railway and hospitals are not the test of a high and pure civilization. They are a necessary evil. Neither of them add one inch to the moral stature of a nation. He believes through the practice of non-violence, India will get independence. If India follows the doctrine of love as an active part of her religion, and it becomes part of her politics, Swaraj will come to India from heaven. Great leaders like Gokhale are pillars of Home Rule. They have sacrificed their life for the motherland. They have embraced poverty for the great cause of nation building. Gokhale is of the view that we should learn political wisdom from the British people for the realization of Home Rule. Indian people resisted Lord Curzon's decision of the partition. The sense of sense of self-rule awakened in the minds of the Indian people. The formation of a nation does not take place in a year. It takes number of years. Mahatma Gandhi emphasizes that division among the leaders is not a good thing. They should establish unity of thought and action. Gandhi compares British Parliament to a barren woman. He described the condition of slavery in the new form. Previously people were made slaves by physical compulsion. He observed that newspaper is Bible to the British people. But these newspapers do not have living conscience and honesty. He expresses the view that Indian parliament should never be like British parliament. He compares British parliament with a prostitute because the parliament worked under different ministers. He finds that members of parliament are selfish and hypocritical. Each thinks of his own little interest. He calls modern civilization self-destructive. The present civilization mainly concentrates on the bodily pleasure. He calls it a satanic civilization. Parliaments have become emblems of slavery. Conditions of many people in the modern civilization have become slavish. Mahatma Gandhi ponders over the colonization process of India. British people came as traders but later became rulers. They have not become rulers themselves. Indians have made them rulers. Indian princes fought among themselves and they sought help from the company against each other. Hindus and Muslims had drawn daggers against each other. This internal division gave the British people to establish their rule. He calls England as a trading nation. They expanded their trade in different nations. Mahatma Gandhi opposes cruelty in the name of religion. Thousands of people are killed in the name of the religion. He says that these things will continue as long as people are credulous and ignorant. We should not be afraid of our own brethren Bhils, Pindaris. To conquer and transform is the responsibility of our own. We should not seek unmanly protection. Our farmers sleep in the field where no

English man will dare to sleep. Strength lies in absence of fear. According to the great leader, Mahatma Gandhi railways, doctors and lawyers have impoverished our country. He expresses the view that nationality and religion are no the synonymous terms. In India people of different religions live. They have assimilated in Indian culture. Irrespective of their difference with regard to faith, they should be united. Their interests are better served if they are united. Hindus flourished under the Muslim monarchs and the Muslims flourished under the Hindus. Both understood that communal fighting was suicidal. Knowledge is the true remedy for all problems. If people are educated they will comprehend that different religions are the different roads which lead to the same goal of life with quality and dignity. Our ancestors were united. There was no aloofness between them. Indian people knew the idea of nationality when it was unknown to the people of other nations. He points out that a man who has inspired confidence in another has lost nothing in this world. Those who fight are injured.

Lawyers have enslaved our country. When two men fight they go to lawyers to seek justice. He said that lawyers have done nothing good. Whatever they have done well, it is because there may be good people among lawyers. They use the profession not to help the poor but to enrich themselves. Their interests are served with maximizing the quarrels. Mahatma Gandhi also pointed out that doctors have ruined the people. They make show of their knowledge. They charge the exorbitant fees. Doctors become doctors not because curing the people of diseases. They become doctors to get honours and riches. According to him Indian civilization is better than Greece, Rome, and Japanese. It has proved a strong civilization. He is full of praise for ancient Indian civilization. He described Swaraj. According to him swaraj is self rule. He holds the view that if the causes of the disease are removed, a person becomes free from disease. If the causes of India's slavery are removed, India will become a free nation. He firmly tells that Indian civilization elevated moral human beings, whereas the western civilization spreads immortality. Therefore he is of the opinion that Indian civilization must be preserved with the necessary modifications. He appeals to the end of slavery. People become weak in the condition of slavery. Garibaldi said that Italy should be free from Austrian yoke. He strongly advocated that what happened with regard to Italian freedom struggle should not happen in India. Italian people became rulers instead of the Austrians. The condition of the people remained the same. He is of the view that swaraj means the welfare of whole people. After freedom Indian people should not be crushed by the Indian princes. In that context he said that he would resist the tyranny of the Indian princes.

He advocated the use of the method of passive resistance for achieving our swaraj. He points out that there is a correlation between means and ends. A man devoid of courage and manhood can never be a passive resister. Those people who follow pious, fearless and truthful can become passive resisters. Mahatma Gandhi describes the importance of education in human life. It is an instrument. Instrument can be well used or abused. The same instrument can be used for the treatment of a patient, or may be used to take his life. Many men abuse education. Very few people have used it for good purposes. It has done more harm than good. The general meaning of education is the knowledge of letters. Teaching reading, writing and arithmetic is called primary education. A peasant earns his bread honestly. He knows how to behave well with his parents, wife and children. He has demonstrated the ill effects of false education and rottenness of the education system. He refers to Professor Huxley's definition of higher education:

" That man I think has had a liberal education who has been so trained in youth that his body is the ready servant of his will and does with ease and pleasure all the work that a mechanism it is capable of; whose intellect is a clear, cold, logic engine with all its parts of equal strength and in smooth working order…whose mind is stored with a knowledge of the fundamental truths of nature… whose passions are trained to come to heel by a vigorous will, the servant of a tender conscience… who has learnt to hate all vileness and to respect others as himself. Such a one and no other, I conceive, has had a liberal education, for he is in harmony with nature. he will make the best of her and she of him." He explains that education is useful when we have subjugated our senses and we have based our life on strong ethical foundation. He has observes that throughout the world mother tongue is considered the most suitable language for the instruction. Welsh parents think that their children should learn Welsh language. Hypocrisy and tyranny has increased because of faulty education system. English knowing Indians have enslaved India. Through our slavery nation has been enslaved. Indian languages like Sanskrit, Marathi, Hindi, Tamil, Kannda, Malayalam, Oriya, Punjabi, Gujarati, all regional languages should be used for the medium of instruction and administration. In courts instead of using our languages we are using English language. With it we should encourage use of regional languages. Justice should be given in our own language. Our best ideas are expressed in English. Our best newspapers are published in English. If we do not give appropriate place to our own languages, future generations will curse us.

Regional languages are important. They need to be improved. In education system ethical education should occupy the first place in our life. In our own civilizations we may progress materially and spiritually in the right manner. Machinery is the main symbol of modern civilization. He condemned use of machinery. He says that we should not rely on the use of machinery. It has not done any good to the people. It has enslaved the people. Many western people have appreciated the Indian civilization, which is spiritual and practical. Mahatma Gandhi dedicated his life for the attainment of Swaraj. Religious education is important. This country should drive out the western civilization all necessary things will follow. True religion never teaches to hate each other. Mutual respect creates a true sense of fellow feeling. Many western scholars affirmed that Indians lived best and peaceful life with their own civilization.

Hind Swaraj is a great world book written by Mahatma Gandhi. He expresses his valuable views on modern civilization, education, machinery, and swaraj. He has dedicated his life for the attainment of true Swaraj. For him just change in the people in power is not the Swaraj, according to him welfare of all people, attainment of moral elevation is true swaraj. People should be free from any kind of exploitation. He cautions against the evil effects of machinery on human life. The book makes a tremendous impact on the people. It is relevant, useful and appealing. *Hind Swaraj* is a great world book. Mahatma Gandhi has brilliantly and splendidly explained the real meaning of swaraj and the proper ways of its attainment.

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Pest and predators of honeybee- a review

A. M. Shinde[1], S. A. Saraf [2], J. B. Aghade[3]
[1,2,3]Department of Zoology, Government College of Arts and science, Dr. B. A. M. University, Aurangabad.
Email. anurathshinde@gmail.com
Email. surekhasaraf@gmail.com
Email. jayeshaghade@gmail.com

Abstract

At least nine honeybee species live on the planet, including the invasive Apis mellifera. A. mellifera and Apis cerana is frequently used for commercial beekeeping, but the remaining non-managed species have important ecological and economic roles on the continent as well. The majority of honeybee species have different distributions. Species overlap all around the globe. This increases the risk of pests and predators spreading between species. Human translocation has allowed them to spread to other parts of the earth. Honeybee population reduction is a major concern. There is a concern all throughout the world. A. mellifera colony losses are thought to be caused, in part, by parasites, predators, and pests are all caused in part by parasites, predators, and pests. Important pests and predators are discussed in this overview.

Keywords: honeybee, pest, predators, beekeeping

Introduction:

Every beekeeper wants to keep their colonies healthy and productive. This is accomplished by minimising the frequency and prevalence of disease in beehives. Many diseases affect honeybees. They are preyed upon by a variety of pests, predators, and other adversaries. Brood diseases including American foulbrood, European foulbrood, Thai sacbrood, and adult bee diseases are prevalent in India. Acarine, Nosema, and Clustering Disease have all been documented. in the hive bees Wax moths, wasps, birds, ants, and other insects are prominent bee enemies. hive beetles, mites, mice, and bears, who eat the elevated combs and destroy the hives and hive parts, capture and kill bees, colony formation, eat away at the honeycomb food stores and annoy the bees, resulting in fewer bees. Returns per colony and colony productivity. As a result, continuous monitoring and surveillance of colonies are necessary for the early detection of diseases and enemies, as well as the employment of non-chemical means to keep pest population densities under control. For the management of economic injuries, a level of injury that is below the economic injury level should be used. Diseases that affect bees and their enemies. Diseases of the brood; diseases that solely affect adult bees; insect enemies of the adults and the comb; and other adversaries such as toads, reptiles, birds, mice, skunks, and other pests as well as bears.

Pests:

Galleria mellonella, the bigger wax moth, is a lepidopterous bug that destroys combs in its larval stage. It does not target adult bees, but it may begin destroying a poor colony's combs long before the bees arrive. are no longer there. It's also capable of destroying honeycombs that have been kept. When the larvae have matured, when they're ready to pupate, they'll seek a location to weave their cocoons in the sun. The beehive's softwood causes damage to the frames and other hive elements. The best way to combat this issue is to keep colonies healthy. Combs that have been stored are fumigated, kept in a chilly environment, or piled in a way that a strong air current passes through them They are surrounded by draught. The lesser wax moth larvae, Achroia grisella, produce identical damage to stored combs as the greater wax moth larvae. Anagasta kuehniella, a Mediterranean flour moth larva, feeds on pollen. the combs and inflicts some harm Both of these moths can be controlled. The greater wax moth is the same as the greater wax moth. Braula caeca, often known as the bee louse, is a small, wingless fly that is infrequently discovered on bees. It feeds on nectar or honey from its host's mouthparts. Its larvae dig into the cappings of trees and shrubs. Ants occasionally infiltrate hives, disrupting or killing the bees. Termites can harm or destroy hive sections that are buried in the ground. Dragonflies (Odonata), robberflies (Diptera), and praying mantises are examples of other insects (Orthoptera), ambush bugs (Hemiptera), and several wasps and yellow jackets (Orthoptera). Honeybees' natural enemy are jackets (Hymenoptera). (NBU Source).

Predators:

Mice frequently enter the hive during the winter when the bees congregate, or they get inside stored combs and despoil or damage them by eating the frames and combs to build their nest. Skunks eat a lot of people. a swarm of bees near the entrance to the hive, generally at night Traps, fences, and other

obstacles They are hunted down and poisoned. Honeybees and their brood are eaten by bears. Usually, the hive and its contents are destroyed in the process. In the case of the bear to safeguard bee hives in the country, electric fences and traps are deployed. Bees can sometimes become their own worst enemy. Honey will be fought over by bees from various colonies if it is presented to them while no flowers are in bloom and the weather is mild. Occasionally, this combat, or Robbery becomes fiercer and spreads in a moblike fashion from hive to hive. When all of the bees in a colony are destroyed, the honey is quickly depleted. The bees were abducted and taken to other colonies. The robbery becomes much more intense as a result of this. that a cluster that had been transporting honey into its hive just a few minutes before is assaulted, all of its people are slaughtered, the honey is stolen once more, and the honey is stolen again. The procedure was repeated. When robbing turns serious, only darkness is left. or bad weather will put a halt to it. (Muhammad S, 2016).

Insect Enemies of Honeybee:

The Greater wax moth (Galleria mellonella):

In tropical and sub-tropical Asia, the larger wax moth is known to inflict damage to honey bee colonies and bee products. It can be seen all year, but it is most common from July through August, October, November, and December are the best months to visit. Combs that have been emptied, wax that has been rendered If not properly preserved and left, comb foundation and pollen obtained by bees would deteriorate. Wax-moth damage is almost usually severe when left untreated infestation. The wax moth, according to numerous reports, is a major pest of Apis cerana, driving colonies to flee. The adult female of a wax-moth attack on a colony enters the hive at night, through the entrance or via openings in the walls, she lays her eggs directly on the combs or in the fissures tiny fissures that allow the ovipositor to work and provide protection from predators Worker bees were used to remove the hive. Each batch lays between 50 and 150 eggs; They're cemented together and securely stick to the surface they're on are positioned. Galleria larvae feed on honey and pollen as they hatch, then burrow into pollen storage cells or the outer edge of cell walls, eventually expanding their tunnels to the comb's midrib. At this point, the developing larvae are relatively protected from worker bees at this time. As a result, as they move further into the combs, they leave a trail of web and debris in their wake detritus; neglected combs are generally completely destroyed. within ten to fifteen days in addition to pollen and beeswax stored in the hive, larvae of When the bigger wax moth runs out of food, it will attack bee brood. The Galleria larvae growth time is determined by two factors: diet and environment temperature and availability. In tropical regions, larvae only need 18-20 days to spin cocoons and become pupae; but, in cooler climates, this time can be extended. When colonies are feeble, when infected, the 'gallerias' sign is usually seen: the developing Adult worker and drone bees are unable to exit their cells due to their lack of ability to fly. Galleria larvae created silken threads that were used to bind the corpses. (Lalita et.al, 2019)

The Lesser wax moth (Achroia grisella):

Except when the latter is dwarfed due to poor food during its larval stage, the lesser wax moth is normally smaller than the greater wax moth. Achroia grisella adults are silver-grey in color and have a unique odor. The Head color is yellow. The insect has a thin body and is extremely small: a healthy body Adult female and male lengths are around 13 and 10 mm, respectively. The adult female's life span is roughly seven days, during which she may lay between 250 and 300 eggs the lesser wax moth is frequently the source of infestation. occurs in honey bee colonies that aren't doing well. The larvae prefer to eat dark foods. pollen comb or brood cell comb They are frequently found at the bottom of the ocean a board amidst the wax shards. The brood is lifted because larvae prefer to build little canals between the bottoms of the brood cells. The bees continue to build cells that lead to the classic honeycomb structure comb surface that has been scraped. (Lalita et.al,2019).

Ants:

In tropical and subtropical locations, ants of all kinds are among the most prevalent honey bee predators. They are highly sociable insects that will assault hives in large groups, stealing almost everything in them, whether it is dead or alive. Adult bees, brood, and honey are all alive and well. Aside from this devastation, they can also be a nuisance to beekeepers, causing pain in some cases. a result of their bites When Apis mellifera apiaries are attacked by ants, they become weak colonies can be aggressive and difficult to maintain escape, which is also A. cerana's defence against recurrent ant attacks. invasions. Several ant genera and species have been recognised to be problematic in comparison to traditional beekeeping. (Michael Hood et. al)

Wasps and Hornets:

In all Asian countries, including India, these insects pose a threat to honey bees. Social wasps of the genus Vespa, which are found all over the world, are among the most commonly documented. Both A.

cerana and A. mellifera colonies are frequently attacked. Hornet attacks on A. cerana colonies usually result in the bees dying. Weak colonies of A. abscond, and similar behaviour has been documented. Mellifera Other wasp species, in addition to hornets of the genus Vespa, have been known to cause apiary harm on rare occasions. Vespa spp. predation on commercial apiaries is typically a rainy season issue. Hornet attacks on apiaries are at their highest during this time. In tropical countries, the most serious wasp infestation occurs in September-October, but in the United States, the most significant wasp infestation occurs in September-October. During the monsoon season, particularly from late June to early July, invasions occur. From June to August, the weather is hot. Apiaries located near tropical woods and foothills Those who live on the plains suffer more than those who live in the mountains. (J.D. Ellis et. al, 2010).

Honey bee Mites:

Parasitic mites are one of the most dangerous enemies of honey bees that beekeepers must contend with. The success or failure of Apis mellifera beekeeping operations is primarily determined by mite management. Beemite problems on the continent are exacerbated by a number of important factors. To begin with, all main parasitic honey bee mite species are currently found in Asia, with the majority being native to the continent. Second, complete mite elimination from an apiary is impossible due to feral mites. Mite reservoirs are found in the nests of parasitized native bees. Honey bee colonies that have been domesticated are re-infested. Furthermore, certain mites Species can survive, and even thrive, on the presence of many species of the host bee Several mite species have been linked to the spread of the disease. Both A. mellifera and A. cerana beekeeping enterprises have been devastated. Though not all mite species present within the hives or across the country True parasites are seen in connection with bees. (M. D. Meixner et.al, 2011).

Varroa Mite (VARROASIS) –

Throughout Asia, this mite is a natural parasite of A. cerana. It has been recorded as causing damage in both temperate and tropical climates since the start of beekeeping development programmes with A. mellifera on the continent. Asia's tropical climate. Varroa infestation has the overall effect of weakening the immune system. Honey bee colonies suffer as a result, and honey output suffers as a result. Heavy blooms occur occasionally in A. mellifera and more frequently in A. cerana. Absconding is a possibility if there is an infestation. This mite can now be found all over the world. Except for Australia and New Zealand's South Island, the rest of the planet. (. Ben Hamida B et.al, 1999).

Tropilaelaps Mite –

Infestation with Tropilaelaps spp. is a common concern in modern Apis mellifera beekeeping in the tropical and sub-tropical parts of the country. This A native parasite of the gigantic honey bee A. dorsata, the mite is a parasitic mite. As a result, beekeepers see Tropilaelaps as a more significant pest than varroa mites, despite its ease of management. A. mellifera has a dual parasitism. It is possible for both parasites to form colonies at the same time. Tropilaelaps populations are frequently higher than those of other species. The Tropilaelaps mite can almost entirely eliminate varroa. Stop the varroa mite from multiplying. Tropilaelaps Mites are substantially smaller than varroa mites, despite the fact that the two are related. They can still be seen by a skilled unaided eye. The mite has a light reddish-brown colour and an oval form body length is 0.96 mm and width is 0.55 mm. With a bright magnifying glass, a red streak running lengthwise on the ventral surface of the adult female can be seen. When mites are found in a honey bee colony, it means the colony is infected. They can be seen walking quickly on the street in big numbers. the comb's outer surface Adults are rarely found with them bees the mite lives within the host in all of its juvenile phases. bees' brood cells, which feed on the brood haemolymph. Adult females who have been fertilised enter the cells before being capped and ready to lay their eggs. The mite goes through the following phases of development: egg, six-legged larva, protonymph, deutonymph, and adult. Adult males of the species Tropilaelaps don't eat, but their chelicerae (organs) do initially used to pierce the integument of bees. As with the varroa mite, it has been adapted to transport sperm. The mite's life cycle is nearly identical to that of the spider the hive-bee. The harm done to colonies as a result of Tropilaelaps infestation is comparable to that caused by the damage done on bee brood by varroa are the same. Bees that survive mite assaults have a smaller abdomen and live for a shorter time than healthy bees. Bees with malformed wings might be found in badly infested colonies be seen crawling around the hive's perimeter comb surfaces, and on the entrance, while a piece of dead the house bees can remove bee brood from the hive. be seen just in front of the door Beehive inspection Tropilaelaps-infested vegetation exhibits an uneven pattern. As with all brood, there is a pattern of sealed and unsealed brood. Diseases of the brood. Because this symptom can be seen as a warning, the position of a poor-laying queen must be checked. The ideal method is to gently open sealed cells and check them to see if there is a mite present. Adult females will be

seen walking quickly out of the cells if mites are present. Obtaining a sufficiently accurate estimation of the quantity of pollution 100-200 cells should be opened and the brood removed if there is an infestation. For a closer look, forceps were used to extract the item.

Tracheal Mite (ACARINE DISEASE) –

This mite, Acarapis woodi, attacks the tracheal system of adult bees, queens, workers, and drones, all of whom are equally vulnerable. It has been reported since the beginning. Opinions on Apis mellifera colonies in Europe in 1921. in terms of the extent of the harm, it can do to honey Bee colonies have changed over time. India and Pakistani reports show that the tracheal mite was responsible for Apis's death. woodi is a very little mite (0.1 mm) that lives and reproduces in adult bees' thoracic tracheae. The mite enters the first tracheal pair of bronchi through the spiracles. a 10-day-old honey bee's thorax It lays eggs there. a couple of days' intervals Males enter the deutonymph stage after the deutonymph stage. Females emerge after around 12 days, and offspring after about 13 days up to 16 days Symptoms The most common visible symptoms of the appearance of crawler bees around the hive indicates an infestation. Wing condition of the 'K' type. It has been proven to be true. that bees with severe mite infestations can feed normally. Nonetheless, there are some distinctions in terms of regards the capacity of afflicted and healthy insects to overwinter colonies. Individual bees' lifespans are shortened by infection; therefore, a severe infestation of a colony leads it to lose vigour, increasing the colony's susceptibility to disease. Losses in the winter the most reliable way of diagnosis is dissection in the lab A total of 20 or more bees were identified in the samples. Those who are unable to fly and crawl close the hive are killed. The heads and legs of the animals were removed, and their thoraxes were dissected. examination under a microscope If mites are present, they are usually harmless. In the thorax, it is found at the end of the first pair of trachea. Chemotherapeutic techniques are commonly used for control. control of mites the best results could be obtained by evaporating the water. Formic acid and ethereal oils are examples of such compounds. Formic acid is a kind of formic acid. When applied by the drops, formic acid yields positive results as described in the varroa control section.

Bee Scorpion –

This insect attaches itself to the bees' legs and follows them to the nest. It's most commonly found in the comb of the Indian honey bee A. cerana.

Reptiles :

Tropical forests, woods, meadows, and urban areas are the most prevalent habitats for reptiles. Among the reptile species that have been reported as being present in the area on a regular basis, Calotes spp., Acanthosaura spp., Calotes spp., Calotes spp., Calotes spp., Calotes spp., Calotes s Arboreal reptiles such as Sphenomorphus spp. Bees can be attacked by geckos and skinks either near or far from the hive entrance or on the branches of flowering trees that are frequented by scavenger bees Geckos, for example, are smaller lizards. Hemidactylus frenatus likes to lurk in the void. between the hive's outer and inner coverings Management: The beekeeper has limited control over the situation. Foragers are being displaced by extremely mobile arboreal reptiles. The majority of the time, they are well disguised in the trees. Hives set on 40-60 cm high stands are somewhat safe from reptiles attacking from the ground, covering the legs of the bees. Reptiles may be deterred by stands containing used engine oil or grease from ascending to the hive's entrance A well-kept hive of bees a lawn that is regularly groomed and free of dense vegetation shrubbery and long grass, which serve as safe hiding spots for the animals. predators, it is less likely to be preyed upon by reptiles than one that hasn't been tended to.

Honey Bee Eater Birds:

Various species of birds may be valuable in the agriculture industry because they reduce insect pest populations in cropping fields. Many different insect species are preyed upon by many different birds. Honey bees are no different. The bees take to the air once they've taken to the air. are virtually vulnerable in the face of birds, including various kinds of which are capable of withstanding their deadly stinging defense The Bees buzzing in and out of hives in large numbers Commercial apiaries offer a once-in-a-lifetime chance. for insectivorous birds, of which there may be a great number This situation has piqued my interest. The extent of the harm caused by Honey bee-eating birds comes in a variety of shapes and sizes. A single bird or a small group of birds attacking together rarely causes a severe problem, but when a huge flock falls upon a few colonies or an area, it can cause havoc apiary, a significant drop in the number of workers in It is possible to see some or all of the hives. In contrast, the extent to which commercial apiaries have been harmed by the number of predatory birds is mostly determined by the number of preys. predators and the severity of the attack, just being there a few predators in apiaries where queens are being reared inflict significant losses.

Mammals: The honey bee's enemies could include a variety of mammalian species. They feed on colonies for honey and/or brood in general; some attacks are entirely predatory accidental. This generally happens when apiaries are being built. They're planted in or near woodlands and aren't well-protected.

Pine Martins: The pine marten is a type of weasel that lives in trees. In primarily hilly areas, pine martens destroy the combs of cultivated and wild bees for honey areas. Pine beetle attacks can be mitigated by enclosing the apiary with a fence marten.

Raccoons: Raccoons cause damage to the apiary by removing the beekeepers from the hive and constructing a nest to rear their young. They'll even take off the top or inner covers. Stacks of supers the honey jars are removed from the scene. They drink the honey from the hives. Raccoons can be dangerous. Red reflective ribbons were used around the apiary to capture the bees.

Bears: It's nearly impossible to keep a bear away from apiaries once it's had a taste of honey and brood. It's normally tough to keep colonies safe against bear attacks, especially in the winter. when the creatures are huge and powerful the damage caused by bears is significant. It's fairly obvious. The bears smashed the hives to bits. to obtain the honey and brood comb They disperse the Around the yard, there are several pieces of machinery. Choosing a location for the apiary. Getting out of the bear's way decreases the bear's attack. The barbed wire that has been electrified When bears are around, wire fences are frequently used. This is a common issue. Bringing beehives closer to people It is also effective to live in a house.

Skunks: scratch the bottom board or the front of the hive body to draw bees out of the hive and consume them. In the evenings, skunks visit the apiary. hours of darkness Raising the hive to a height of 15 to 18 inches above the ground the use of wire netting around the hive and on the ground is effective to keep the skunks away.

Rodents: Rodents like mice and rats are a typical beekeeping pest. They create nests in hive boxes, damage comb in frames, and rip equipment apart. In They also leave their droppings all over the area. Rats have the ability to There may be major issues in storage spaces where bees are present. The equipment is retained. A mouse trap is used to keep mice out of hives. A trap can be placed at the hive's entrance. Reducing Bees will be able to enter the hive through a 14-inch opening. Mice will not be allowed to enter, but they will be free to come and go. Bait Rats and mice can both be caught in traps.

Conclusion:

Honeybee pollinators are many more benefits for the farmers, beekeepers, and society, it’s helpful to the pollination services provided free of the coast and unfortunately effect the agricultural sector. Pollinators are also helpful of maintain biodiversity. But there are many affecting factors of pollinators (viz. Beetles, Moths, Ant, Wasps, Birds, Mammals, etc.) that cause the number of pollinating insects to be declining. In general, we can conclude that pests and predators are a very potentially threatening challenge to beekeepers all over the world. Beekeepers need to take measures to eliminate pests or change their bad habits. Beekeepers have a need the best biodiversity practices in each state, beekeeping practice training, as well as educate, and training in the inspection.

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Influence of Saq Training on Selected Physical Physiological Variables Among College Women

V.Preethi[1], Dr.S.Saroja[2]
[1]Ph.D Scholar, Alagappa University College of Physical Education,Alagappa University,Karaikudi
[2]Associate Professor,Alagappa University College of Physical Education,Alagappa University,Karaikudi
Email- preethivenkatesh2894@gmail.com
Email- dr.s.saroja@gmail.com

Abstract

The purpose of this study was to find out the Effect of Speed, Agility, and Quickness Training on Selected Physical, Physiological variables among college women. The subjects were selected forty women from Alagappa University College of Physical Education,Karaikudi. Tamil nadu. The age ranged between 18 to 25 Years. Forty subjects were selected at randomly subjects were divided into two equal groups designed one experimental group and one Control Group. The each group consisted of 20 subjects. Before the training pre test was taken for the entire group, the control group did not undergo any type of training. SAQ training was given to the experimental group every day in the morning and evening over a period of six weeks. The data collected from the control group, and experimental group. The selected variables were statistically examined using the't' ratio.The level of significance was fixed at 0.05 levels of confidence.

Key words: Speed, Agility, speed, Pulse Rate, Blood Pressure.

Introduction

SAQ Training is Speed, Agility and Quickness Training. This method of training aims to improve an athlete's multi-directional movement by reprogramming their neuromuscular system.The Baechle (1994) defined speed as "the rapidity of movement" (Brown, Woodman & Yap, 2000). Agility is the rapid whole body movement with change of velocity or direction in response to a stimulus (Sheppard & Young, 2006). Moreno (1995) defined quickness as "the ability to read and react to a situation; it is a multidirectional skill that combines explosiveness, reactivates, and acceleration" (Brown, Woodman & Yap, 2000). SAQ aims to coach the necessary techniques to provide the basic skill to complete the movements. Little & Williams (2005) found that acceleration, maximum speed, and agility share common physiological and biomechanical determinants. This suggests that adaptations of physical and mental skills to improve sprint speed will also offer improvements in agility, specifically improvements in muscular power, brain signal efficiency, motor skills and reaction time (Brown & Ferriano, 2005). Although the key physiological components of sprint speed and agility are related, they are clearly different skills and therefore require the correct technical coaching points in order for athletes to improve (Brechue, Mayhew & Fontaine, 2010). Moreno (1995) defined quickness as "the ability to read and react to a situation; it is a multidirectional skill that combines explosiveness, reactiveness, and acceleration" (Brown, Woodman & Yap, 2000). Polman, Bloomfield & Edwards (2009) found that "SAQ training enables athletes to become better at reacting to stimuli, start more quickly and efficiently, move effectively in multiple directions, and change direction or stop quickly to make a play in a fast, smooth, efficient, and repeatable manner". Along with increased ground reaction force and muscle strength, adaptations in brain signal efficiency and reaction could allow the athlete to improve their mental attributes allowing a quick reaction time enabling improvement in quickness, acceleration and explosiveness.

S.A.Q Training

Speed

First Step Quickness – The ability to cover the ground efficiently and economically over the first few yards. Then to open the stride length and increase stride frequency when working over 40 + yards.

Agility

Agility is the ability to change direction without the loss of balance, strength or body control. Agility should not be taken for granted as is often the case in many players training programmes.

Quickness

When a player accelerates from static to motion a great deal of force has to be generated and transferred through the foot to the ground.

Methodology

Selection of subjects

To achieve the purpose of the present study forty women players were selected from Alagappa University College of Physical Education,Karaikudi. The subject were selected randomly and age ranged from 18 to 25 years. The subject were divided into two equal group as group-I experimental group and group-II control group. No specific motivation given to the control group. The collected data on physical fitness, physiological variables were statistically examined to test the various hypothesis formulated by the researcher for comparison't' ratio was used.

Selection of variable

1. Dependent variables- speed, agility and quickness training.
2. Independent variables- Speed, Agility, Pulse rate, Blood pressure.

Experimental design

The primary responsibility of the investigator is to select the experimental methodology before proceeding with data collection. A pre test, post test randomized group design was used each group consisted of twenty subjects. Before the training pre test was taken for the entire group, the control group did not undergo any type of training. SAQ training was given to the experimental group every day in the morning and evening over a period of six weeks.

Selection of test

Physical Fitness Variables Tests

1	Speed	50yards run	Seconds
2	Agility	Illinois test	Seconds

Physiological Variables Tests

1.	Resting Pulse Rate	Stethoscope	(Beat per Min)
2.	Blood Pressure	Blood Sample Analysis	(mm Hg)

Analysis Of Data

Table I: The Summary Of Mean And Dependent 'T' Test For Pre And Post Tests On Speed Of Saq Training Group And Control Group

Groups	Pre test mean	Post test mean	't' test
SAQ training group	7.88	7.18	10.41
Control group	7.97	7.87	7.03

Table value required for 0.05 level of significant 1and 19is 2.093.

The table I shows that the pre-test means value of SAQ training group and Control group are 7.88, 7.97 respectively and the post-test means are 7.18, 7.87 respectively. The obtained dependent t- ratio values of SAQ training and control group are 10.41, 7.03 respectively 2.093, The require table value of 0.05 level with of confidence is 2.093 the obtained 't' ratio value of experimental groups are greater than the table value, it is understood that SAQ training groups and Control group had significantly improved Speed . However, the control group has not improved significantly.

Table Ii: The Summary Of Mean And Dependent 'T' Test For Pre-Test And Post-Test On Agility Of Saq Training Group And Controlgroup

Group	Pre test mean	Post test mean	't' test
SAQ training group	22.07	20.61	9.273
Control group	22.01	21.74	2.526

The table value required for 0.05 level of significant 1and 19 is 2.093.

The table II shows that the pre-test means value of SAQ training group and control group are 22.07, 22.01 respectively and the post-test means are 20.61, 21.74 respectively. The obtained dependent t- ratio values of SAQ training group and control group are 9.273, 2.526 respectively 2.093, 2.09 the require table value of 0.05 level with of confidence is 2.093 the obtained 't' ratio value of experimental groups are greater than the table value, it is understood that SAQ training groups and Control group had significantly improved agility. However, the control group has not improved significantly.

Table- Iii: The Summary Of Mean And Dependent'T' Test For Pre- And Post-Tests On Pulserate Of Saq Training Group And Control Group

Group	Pre test mean	Post test mean	't' test
SAQ training group	84.60	80.15	1.289
Control group	77.55	80.00	2.617

Table value required for 0.05 level of significant 1and 19 is 2.093.

The table III shows that the per-test means value of SAQ training group and Control group are 84.60, 77.55 respectively and the post-test means are 80.15, 80.00 respectively. The obtained dependent t- ratio values of SAQ training and control group are 1.289,2.617 respectively 2.093 the require table value of 0.05 level with of confidence is 2.093 the obtained 't' ratio value of experimental groups are greater than the table value, it is understood that SAQ training groups and Control training group had significantly improved Pulse rate. However, the control group has not improved significantly.

Table – Iv: The Summary Of Mean And Dependent 'T' Test For Pre- Test And Post-Test On Blood Pressure Of Saq Training Group And Controlgroup

Groups	Pre test mean	Post test mean	't' test
SAQ training group	90.37	59.00	17.71
Control group	88.54	53.15	10.89

The table value required for 0.05 level of significant 1and 19is 2.093.

The table IV shows that the per-test mean value of SAQ training group and control group are 90.37, 88.54 respectively and the post-test means are 59.00, 53.15 respectively. The obtained dependent t- ratio values of SAQ training and control training group are 17.71, 10.89 respectively 2.093 the require table value of 0.05 level with of confidence is 2.093 the obtained 't' ratio value of experimental groups are greater than the table value, it is understood that SAQ training groups and Control training group had significantly improved blood pressure. However, the control group has not improved significantly.

Conclusions

1. The selected physical variables such as speed and agility have significantly improvement due to the SAQ training when compared to control group.
2. The selected physiological variable such as pulse rate and blood pressure has significantly improvement due to the SAQ training when compared to control group.

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A new eulophid species of Stenomesius Westwood, 1833 (Hymenoptera: Chalcidoidea) parasitizing Phyllocnistis citrella (Lepidoptera: Gracillaridae) in Uttarakhand, India

Puja Pant[1], Manish Kaneria[2]
[1]Insect Biosystematics & Insect-Pest Management Laboratory
Deptt.of Zoology, Kumaun University-SSJ Campus, Almora, Uttarakhand, India
[2]Department of Botany, Government College Baldeogarh, Tikamgarh, Madhya Pradesh, India
Email- pujapant15april@gmail.com

Abstract
A new species of eulophid parasitoid i.e. Stenomesius citrella Puja & Kaneria sp.nov. (Hymenoptera : Eulophidae : Eulophinae) is described which were found to parasitize citrus leaf miner Phyllocnistis citrella Stainton (Lepidoptera: Gracillaridae) from Uttarakhand.
Keywords: Eulophidae, Eulophinae, Gracillaridae, Hymenoptera, Lepidoptera

Introduction

The family Eulophidae constitute an economically important group of microparasitic Hymenoptera, containing more than 4500 described species in over 332 extant genera . Of the megadiverse family, subfamily Eulophinae is represented by 97 genera and 1316 species worldwide (Noyes, 2021). Westwood (1833) established the genus *Stenomesius* (Eulophidae: Eulophinae) based on European species *S. pulchellus* Westwood and *S. maculatus* Westwood. The genus is currently represented by 21 species worldwide (Noyes,2021). Many species of the genus are parasitoids of Lepidoptera, and recorded host families contain Gelechiidae, Lyonettiidae, Glyphipterygidae, Tortricidae, Pyralidae, and Noctuidae (Bouček 1988, Fan & Li , 2021). The species of subfamily eulophinae are frequently involved in biological control programs directed against dipteran and lepidopteran pests, and many species of eulophid parasitoids have been utilized successfully in biological control programmes all over the world (Greathead, 1986).The present investigation has been carried out to identify a parasitoid species which is parasitizing on *P. citrella* , a serious pest of citrus and related species of the plant family Rutaceae (Kalshoven 1981, Achor 1996).

Materials and Methods

The infested leaves with citrus leaf miner, *P. citrella* (Lepidoptera: Gracillaridae) (Plate A) were collected during the month of July 2021 from Pithoragarh (29.5829° N, 80.2182° E) Uttarakhand. The infested leaves were placed in rearing glass jars covered with muslin cloth. The rearing jars were daily observed carefully for the emergence of parasitoids. After the onset of emergence of parasitoids, all reared parasitoid specimens were collected from the rearing jars using a manually operated aspirator and then preserved in 70% Ethyl alcohol. For the observation of taxonomic characters, standard procedure given by Noyes (1982) was followed for preparing permanent slides of the parasitoid specimen. Olympus Magnus MSZ-TR (Binocular Stereo Microscope) was used to take various morphological photographs and Olympus Trinocular Research Microscope Model-CX-31-Tr assembled with drawing tube attachment was used for the line diagrams. Used morphological terms and abbreviations adopted from Gibson (1997).
Abbreviations used in text are: **POL**= postocellar length; **OOL**=oculoocellar length; **Fx**= funicles, x being the funicular segment number; **SMV**= submarginal vein; **MLM=** midlobe of mesoscutum; **CC=**costal cell; **MV=** marginal vein; **PMV=** postmarginal vein; **STV**= stigmal vein; All measurements used are in millimeters (mm).

Results

Order Hymenoptera ,Family Eulophidae , Subfamily Eulophinae

***Stenomesius* Westwood, 1833**

Stenomesius Westwood, 1833: 343. Type species: *Stenomesius pulchellus* Westwood, by subsequent designation of Westwood 1839: 73.
Euryscotolinx Girault, 1913: 266. Type species: *Euryscotolinx guttativertex* Girault, by original designation and monotypy. [Synonymised with *Stenomesius* Westwood by Bouček 1977: 401].
Stenelachistus Masi, 1917: 201. Type species: *Stenelachistus impressus* Masi, by subsequent designation of Gahan and Fagan 1923: 136. [Synonymised with *Stenomesius* Westwood by Bouček, 1977: 401].
Nioro Risbec, 1951: 25. Type species: *Nioro elegantula* Risbec, by monotypy. [Synonymised with *Stenomesius* Westwood by Bouček 1977: 401].

Diagnosis : Members can be easily separated from other eulophine genera by the following combination of characters: female funicle 4-segmented–,club 2–3-segmented; mandible developed; pronotum without transverse carina; scutellum with sublateral grooves; propodeum medially with X- or H-shaped carinae; hind tibial spurs normal; petiole shorter than hind coxa; gaster usually elongate.

Stenomesius citrella sp.nov.

(Plate B Fig.1-7;Plate C Fig.1-11)

Material examined : Holotype : 1 ♀, specimen mounted on a slide under coverslip (Hym. Eulo, 00321). Paratype: 1♀ in vial (Hym.Eulo,00321), same data as the holotype, Uttarakhand ,Pithoragarh 29.5829°N, 80.2182°E, ex., citrus leaf miner , *Phyllocnistis citrella* (Lepidoptera: Gracillaridae).,17.vii.2021, coll. Puja Pant.

Description: ♀, Body length 1.9 mm; fore wing length 1.56 mm.

Body colouration (Plate B Fig.1) **:** Head yellow except clypeal region pale yellow extending to malar space; eyes black ;ocelli orange yellow; antenna brown except scape and pedicel light yellow; thorax yellowish brown; legs yellowish; gaster yellow except dorsal tergite brown on both sides and with 3 brown spot at posterior end, third one is smaller; third valvulae black; wings hyaline with veins pale yellow .

Head (Plate B Fig.2,3,7 ; Plate C Fig.3,4,5) **:** 1.3× as wide as high in anterior view ; ocelli arranged in obtuse angled; OOL 1.2× POL ; antennal torulus located above the lower margin of eye; eye 2.5× as high as wide; malar space 0.2× of eye height ; mandible pentadentate with two acute teeth; antennal formula 11142; scape more than 4.5× as long as wide; pedicel setose , 2.1× as long as wide ; F1 2.4× as long as wide ,1.2 × as long as pedicel; F2 2.7× as long as wide; F3 2.3× as long as wide ; F4 2.4× as long as wide ; clava 2 segmented, more than 3.7× as long as wide , shorter than length of preceding three funiculars combined.

Mesosoma (Plate B Fig.4,5; Plate C, Fig .6,7) **:** Median width of pronotum 3.4× its median length; MLM with 2 pairs of setae, mesoscutum width 1.7× its median length ; scutellum 1.1× as long as wide , with 2 pairs of setae; dorsellum 3 × as wide as long ; propodeum 2.3 × wide of its length , plicae and 'H' shaped carina present; propodeal spiracles separated from the anterior margin of propodeum ;each propodeal callus with 5 setae.

Wings (Plate C, Fig.1,2) **:** Fore wing 2.6 × as long as wide , more than 1.2× as long as hind wing; CC 18.3× long as wide ; SMV with 5 dorsal setae; MV 1.1 × as long as SMV , 2.1× as long as PMV; PMV 2.3× longer than STV ; cubital vein sinuate ; speculum absent ; marginal fringe spaced by a distance almost $1/4^{h}$ of their length; Hind wing more than 6.2× as long as wide , 1.6× the length of vein ; marginal fringes spaced by a distance $1/5^{th}$ of their length; wing apex subacute.

Legs (Plate C Fig.8,10,11) **:** Fore leg: coxa 3× as long as wide , 4× as long as fore trochanter; femur 5× as long as wide ; tibia 9× as long as wide , slightly longer to femur in length ; tibia 1.1 × as long as combined length of tarsomeres ; fore basitarsus with setae arranged in an oblique rows; fore basitarsus 1.7× as long as fore tibial spur ; Mid leg: coxa 1.5× as long as wide , 1.6× as long as mid trochanter ; femur 8× as long as wide ; tibia 11× as long as wide , 1.3 × as long as femur, 1.4 × as long as combined lengths of tarsomeres ; mid basitarsus 1.2× as long as midtibial spur ; Hind leg: coxa about 2 × as long as wide , 2.9 × as long as hind trochanter ; femur 6 × as long as wide ; tibia 11.4 × as long as wide , 1.1× as long as femur, 1.5 × as long as combined length of tarsomeres ; hind basitarsus 1.4× as long as hind tibial spur .

Metasoma (Plate B Fig.6; Plate C Fig.9) **:** Petiole 1.2 × as long as wide ; metasoma 1.5× as long as wide ,1.1 × as long as mesosoma in dorsal view ; first valvifer subtriangular ; anterior margin of basal part of second valvifer curved; second valvifer 1.08 × as long as outer plate of ovipositor, 4.4 × longer than third valvula ; third valvula 5× as long as wide ; cerci bearing 2 hairs.

Male: Unknown

Host: Citrus leaf miner, *P. citrella* (Lepidoptera: Gracillaridae) (Plate A)

Distribution: India :Uttarakhand (Pithoragarh)

Etymology: Species epithet is after the host generic name

Remarks: This new species resemble with *S.orientalis* in the key of Khan *et al.* (2005) and Narendran (2011), and as per the description given by Agnihotri & Khan (2004), both species have head, thorax and pronotum without any infuscation; funicle segments variable in size; pedicel more than twice as long as wide; speculum greatly reduced; scutellum longer than wide, however, it differ in terms of having : head 1.3× as wide as high in anterior view (head 1.4× as wide as high in anterior view); antenna with 1 anelli (*vs.* antenna with 2 anelli); mandibles pentadentate (*vs.*mandibles hexadentate); eyes black (*vs.*eyes red); scape more than 4.5 × as long as wide (*vs.*scape more than 5 × as long as wide); costal cell bare on underside and 6 setae on its outer margin (*vs.*costal cell moderate with 4 setae on upper margin and with a row of 14 setae on its underside); fore wing 2.6× as long as wide (*vs.* fore wing 2.5× long as wide); gaster

with 3 brown spot at posterior end, third one is smaller (*vs.* gaster with a brown spot just below centre of the gaster); gaster slightly shorter than head and thorax together (*vs.* gaster longer than head and thorax together).

Conclusion

The majority of the Eulophidae are primary parasitoids of concealed larvae especially those inhabiting leaf mines .Hymenopteran parasitoids have been proved to be a successful biological control agent on several insect pests. Therefore, to improve the suppression of citrus leaf miner population, these hymenopteran parasitoids could provide information on effective biological agents for future management.

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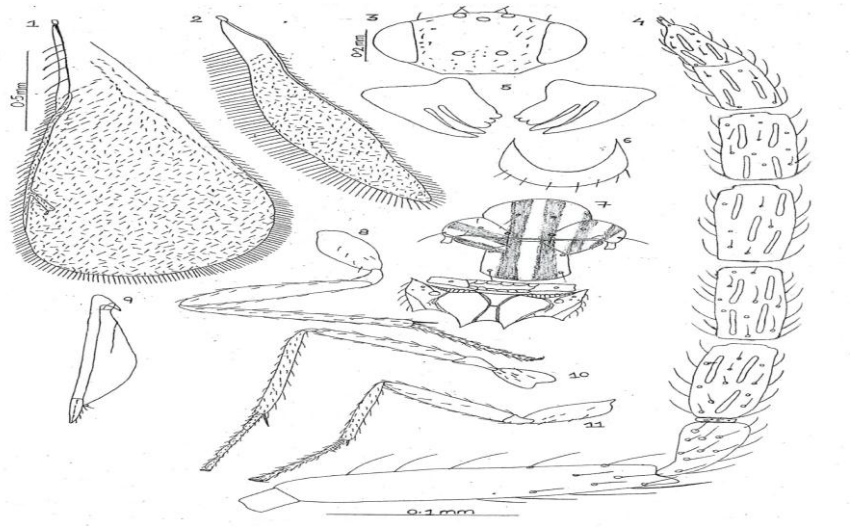
1

Plate B (Fig. 1-7) *Stenomesius citrella* sp.nov .♀ **:** 1 –habitus lateral view,2-head dorsal view,3-head anterior view,4- dorsellum and propodeum,5- mesoscutum and scutellum,6-metasoma,7-antenna



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Quite India Movement in Tamrolipto Jatiyo Sarkar

Dhirendra Nath Ghosh
Research scholar RKDF University, Ranchi
Mail id:dhirendranathghosh23@gmail.com

Abstract

The Quit India Movement has rightly been described as the most massive anti-imperialist struggle on the eve of Partition and Independence. 1942, the year that the movement was launched and the next five years witnessed unparalleled and tumultuous events in the political history of India. On 9th August, the Quit India Movement spread all over India as well as Midnapore District in Bengal Province also joined. In the time of August movement sub-divisional Congress Committee has set up a Parallel Government against ruthless British rule as "Tamralipta National Government'' It had greater consequent on the main motto i.e freedom from the clutch of British. Therefore the researcher has conducted this study to throw light on the contribution of students of Midnapore during quite India movement, to study the contribution of the women of Midnapore during the Quite India Movement and to study the various steps taken by the Tamrolipto Jatiyo Sarkar.

Keywords: Revolution of 1942, India Movement, Partition, Independence, Congress Committee.

Introduction:

Before the revolution of 1942, all the revolutions or movements that used to take place were in small areas, due to which they could not be fully successful, but the revolution of 1942 has happened in the whole country, people of every religion of every caste. Join together which proved to be very effective for India Before the revolution of 1942, all the revolutions or movements that used to take place were in small areas, due to which they could not be fully successful, but the revolution of 1942 has happened in the whole country, people of every religion of every caste. Join together which proved to be very effective for India(**Tanay Kumar Khalua,2019)**

From Bihar to Bengal to Orissa to Kashmir, all the people in the country were completely on the path about this revolution, whether old, whether students, whether women or men, even women, the revolution of 1942 was complete. It had landed on the way, there was a complete fire in our country Which was a very positive thought for independence. Congress and Subhash Chandra Bose had a great contribution in the Quit India Movement, the way Subhash Chandra Bose took it forward in the Second World War, our country got a lot of benefit, along with the students. Be students, those students who were studying in continents like Britain and America, those people came to our country and participated in this 1942 revolution, due to which the country was completely sporadic before all the movements for better independence. Again the government was comfortably abolished than it used to be. This movement, where the world war was going on, completely led India in this movement and for the independence of the country There, due to which we got independence in 1947.(**Sanjib Bera,2018)**

Objectives: The study based on the following objectives-

1. To throw light on the contribution of students of Midnapore during quite India movement
2. To study the contribution of the women of Midnapore during the Quite India Movement
3. To study the various steps taken by the Tamrolipto Jatiyo Sarkar.

Method: As it is descriptive study, the paper is based on the information gathered from different related existing studies, books. Some information have also been gathered by following internet sources.

Discussion : Many people were fully involved in the revolution of 1942, then the people of Bengal, especially the people of Medinipur in Bengal and the students there participated in the revolution of 1942 with full enthusiasm, they have done full force against the British. Because of which Lord Curzon got down on the way, many of the masters taking action against them as usually.

Students contribution:

In Medinipur the student movement is not only with arms, There begin avoid mind set Lord Curzon's splitting of the Bengal Rule had builed calamity in completely Bengal . Student opposed the unfair rute of 'Union of Medinipur roseboldy of British on that time when they taken some step like avoiding and picketing etc. The home-rule movement had being established under the guidance of revolutionary Satyendranath Baus by arranging some elective batches where the motivating person for using handmade items and avoiding foreign goods. The builed the organization fir help the poor students. On that time

students were hugely being nationalistic caring take parts on the march without appropriate outfits the were became malice due to heavy rainfall on the roads of Medinipurtown . Not only in Medinipur the all most towns but in Danton, Khirpai, Mahisadal, Ghatal,contaietc There the student were taking part in various March of anti-splitting of Bengal also. The students alliance in Medinipur to appear group's of consonance cheerfully throughout the complaintopposed if splitting of Bengal. On that time the moment of xld celebrating , The huge assembly clasps for the Master person of Medinipur. National song was sang on the assembly to motivate person for the nationalism.. They are non- cooperation movement had been victoriously reveals through the students the courageous direction of BirendraNath is this judge " Your are disobedience but achieved success ". Motivating form Netaji Subhas Chandra Bose, revolutionary Dinesh Gupta approach to come Medinipur and arrange the revolutionary group with the students of the Medinipurcollege. The group had been stabilised the region movement to opposed the British Empire

Contribution of farmer / aritisans:

Just one month after august revolutionary had begin and events take place which accelerated the steps for revolutionary. The holder of Rice Mill, located at Danipur village on the bank of river Rupnarayan, under Mahisadal Police station, rice and paddy had been distributing away to the locating connivance with Government official. The local public had arrested that all good grain finished in their house. Hence, some thousands villages get together almost there mill and order to undertaking from the mill hold to finish export of food grains. The collecting there details of police party came at the mill site and shoot several rounds of firing to distribute the defenceless gathering in the situation three of villagers died. It was the terrible of injury occurrence in the community in 1942, But the killing didn't gone to conceited. Muskrupa and Myna Mayna come under the same sub-division police station where the Congress was raided and ousted from the swayamsevaks due to poor functioning of the police station and other government offices 14 September 14 September 28 September Important routes to reach Amritsar. The road was closed, There was cut off, the police had taken various actions to block the road. Telephone and telegram lines Karthiki's 194 telegraph posts were demolished and the boat was buried in the Hooghly River.

Terrible Cyclone in Midnapore District: With police cruelty for August movement , In Midnapore observe unrivalled natural disaster that never expected in dreams also. The horrible cyclone of 16th October 1942 keep at it extreme on the entire Tamluk Sub-division in Midnapore. the report of the local approximately around Ten Thousand [10,000] peoples and seventy percent [70%] of the cattle died.

Conclusion:

in Indian history quite india movement was of great significance in India's freedom struggle. People from every section participated spontaneously in this movement. In this regard the Tamraliptojatiyosarkar also played important role to fulfill the goals. Different activities taken by the said sarkar forced the british government to acknowledge the demands of the Indians. Though it caused agreat loss of human resources as many students and common people had to sacrifice their lives, it brought about 'Purnoswaraj'. Therefore in the history of Indian freedom struggle the first Indian govt. i.e. TamroliptoJatiyoSarkar is one of the most notable matter which may be a matter of great pride and inspiration.

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White Grub: A Nefarious Pest.

M. A. Aute[1], S. A. Saraf[2]
[1,2]Department of Zoology, Government College of Arts and Science, Dr. B. A. M. University, Aurangabad.
Email - maheshaute5767@gmail.com
Email – surekhasaraf@gmail.com

Abstract

White grub is a polyphagous pest which adversely affects the productivity of agricultural crops. They cause extensive damage to many agricultural and horticultural crops as well as grasses. Most of the field crops grown during the rainy season in India are damaged due to the attacks of white grubs viz., groundnut, sugarcane, pearl millet, sorghum, cowpea, pigeon pea, green gram, cluster bean, chillies, upland paddy etc., This article tries to reveal the predatory nature of white grubs and also flashes on relevant literature regarding the host plants of these pests.

Keywords: White grubs, polyphagous, crops, attack, damage.

Introduction:

The family Scarabaeidae is the second largest family which comprises 30,000 species recorded worldwide (Gupta, 2012) and about 2500 species are reported from India (Krajcik,2012) and most of them are phytophagous (sub families Melonthinae, Rutelinae, Dynastinae and Cetoninae) (Chandra *et al.*, 2012). White grubs are larvae of melolonthinae (Scarabaeidae: Coleoptera). The adults of white grubs are known as Chafers, May or June beetles all over the World. White grubs are one of the most destructive soil insects, affecting the gains from agricultural crop fields. White grubs are common dweller of soils and are considered as most destructive soil pests of many crops in India. White grubs feed on the roots of host plants, while the adult beetles feed on the foliage of plants. An appearance of attacked plant becomes pale, wilted and finally dries. The damage caused by them can be seen in patches but during epidemics the entire crop may be exhausted. The damage due to white grubs is severe in economic crops like sugarcane, groundnut, cereals, millets, pulses, vegetables and plantation. *Holotrichia longipennis H.consanguinea Blanch, H.reynaudi Blanch, H.seticollis Moser, Brahmina coriacea (Hope), dimidiata (Hope), Leucopholis lepidophora L.coneophora Brum., Melolontha spp.*, are some major pest species that attack different plants in different regions of the country (Gitanjali Devi, 2019). White grubs cause serious damage to cereal crops such as maize, wheat, barley, jowar, bajra, oil seed crops like groundnut, sesame, sunflower, soyabean, vegetable crops like brinjal, cucurbit and okra and other commercial crops like sugarcane, cotton, tobacco etc., (Fujiie and Yoloyama). White grubs cause damage to roots of commercial crops the damage caused by the White grub up to 70% (Bhawane et al., 1997). Due to the abundance and significant ecological roles, the structure and composition of scarab has a crucial role in determining the nature of the ecosystem. They have various ecological roles and can be broadly categorized as phytophagous and non-phytophagous. (Spector, 2006). They function as scavengers, plant feeders, earth movers, pollinators, predators (Halffter, 1966). The ICAR recognized the importance of white grubs and empowered the research work through Ad-hoc research project from 1974 at five different localities in the country as AICRP on white grubs.

The fauna of the Indian sub-region is abundant and diverse, but it is yet to be fully explored. Many researchers from India and abroad have studied about the diversity, distribution, abundance and host range of white grubs. In India work and awareness regirding the white grub attacks is not very encouraging and is restricted to certain geographical regions of the country. This article flashes on damage caused by white grubs to various host plants and tries to assemble some relevant information related with this issue. An attempt has been made to review the available literature on the white grubs attacking various agricultural crops in India.

Review on Predaceous Behaviour and Host Plants of White Grubs:

Arrow (1910, 1917, 1931) published first comprehensive account of scarabaeid beetles of Indian region wise three volumes of fauna of British India, in which he reported 58 species from Madhya Pradesh. Srivastava and Khan (1963) observed that *H. instilaris* in Rajasthan showed preference for drumstick and made severe damage. Y Chandra and Rai (1967) recorded Oxycetonia albopunctata for the first time on bajra hybrid. Singh (1964) observed that Holotrichia longipennis, Anomala, and Adoretus sp. and Brahmina coriacea belonging to this group damage the semi ripe fruits of apple, peach, palm and apricot in Himachal Pradesh and hilly areas of U.P. Vasu (1970) observed that the adults of *Orycetes rhinoceros*

feed on palm leaves. This pest destroys the tissue at the leaf base. Coconut white grubs feed on tender parts of the coconut roots. In case of severe attack, shedding of immature nuts results in great loss to the yield. Srivastava (1971) reported that *Chiloloba acuta* damage to the inflorescence of bajra and feed gregariously on the anthers and stigma of bajra. Veeresh (1974) recorded an unusual damage to guava trees due to white grubs which lead to death of trees through the scrapping of barks. Pal (1977) reported that the adult beetles of *H. serrata* were attracted to neem, acacia, ber, guava. The white grubs feed on the roots, causing the plant to show, varying degrees of yellowing, wilting and die ultimately. The roots show a sharp cut which can be differentiated from usual damage. The affected plants can be pulled up easily. Patches of dead plants are seen throughout the field which later coalesce to produce intensive areas of damage (Yadava, 1991). White grubs have been reported to be pod borers too (Anitha, 1992). The presence of one grub may cause mortality of 80-100 percent plants. Because of the taproot system and smaller amount of roots, the damage to groundnut is more pronounced as compared to fibrous rooted crops. *H. consanguinea* was found to cause 50-100% damage to groundnut (Joshi et al., 1969, Sharma and Shinde, 1970 and Yadava et al, 1978). Yadava (1991) reported 20.100% plant mortality in affected areas, 10.60% in H serrara areas. Husain (1974) recorded 100% damage in vast tracts extending from 320-400 m in 1968 and 1969 in Andhra Pradesh. Pal (1977) reported 5000 ha to be affected in Andhra Pradesh. Rao et al., (1976) reported 10,000 ha in localized areas of Gooty, Kalyandurg and Penukonda areas of Anantapur and Dhone and Pattikonda of Kurnooi where a crop loss of 60.80% annually was recorded.

The adults of white grubs come out generally during May-June from the soil and settle on the trees like neem, moringa, Prosopis, Acacia, apple and plants like wild rose, Polygonum, etc. for feeding and mating (Yadava and Sharma, 1995). Tiwari et al., (1999) recorded 47 species of white grubs, nineteen species, viz., Apogonia sp., A. setosa, Holotrichia sp. nr. cavifrons, Adoretus (Chaetadoretus) sp., A. caliginosus, A. versutus, Anomala marginipennis, A. polita, A. xanthoptera, M. horsfieldi, Popillia cyanea, P, macclellandi, P. nasuta, Rhinyptia suturalis, Xylotropes gideon, Anatona stillata, Chiloloba acuta, Clinteria klugi and Glycyphana horsfieldi from Himachal Pradesh (India) and observed that Brahmina coriacea caused 99.0 per cent damage to apple leaves and destroyed potato cropThe many Melolonthine genera found under the crop in India, the genus Holotrachia includes the most important pest species in groundnut (Yadava and Sharma 1995). They recorded Holotrachia serrata as a serious pest in many parts of western Maharashtra. . Mehta et al., (2010) Observed the most destructive species causing economic losses viz., Brahmina coriacea (Hope), Holotrichia longipennis Blanch, Anomala dimidiata Hope, Phyllognathus dionysius (Fabricius.), Lepidiota stigma (Fabricius.), Holotrichia seticollis Moser and Melolontha spp. Bhawane et al., (2012) observed that the grubs of Leucopholis lepidophora, Holotrichia fissa, Holotrichia karschi, Holotrichia serrata, Adoretus versutus, Adoretus lasiopygus, Anomala bengalensis are polyphagous root grubs and serious pests of agricultural, horticultural and silvicultural crops. Kulkarni et al., (2019) stated that white grubs are among the toughest-to-manage pests of economic importance and they observed the damage made by H. rustica and H. mucida on teak plants.

Table 1: Major Host Plants of White grubs in various states of India.

State	Species	Host (Grub)	Reference
Andhra Pradesh	*Holotrichia serrata F.*	Jowar, Tobacco	Pal, 1977
Maharashtra	*H. serrata F.*	Jowar, Sugarcane	Joshi et al., 1969, Sharma & Shinde 1970
Bihar	*H. serrata F.*	Gauva, Bean	Pal,1977
Gujrat	*Holotrichia consanguinea .*	Groundnut	Pal, 1977
Rajasthan	*H. consanguinea* *H. insularis*	Bajra, Chillies, Maize, Sugarcane	Khan, 1963. Pal, 1977.
Haryana	*H. insularis* *Anomala sp.*	Bajra	Pal,1977
Karnataka	*H. serrata F.*	Coffee, Tobacco	Pal, 1977
Kerala	*Leucophilis concophora*	Coconut	Pal, 1977
Uttar Pradesh	*H. serrata F.*	Groundnut, Sugarcane	Singh, 1964
Tamil Nadu	*H. serrata F.*	Sugarcane	Pal, 1977
Himachal Pradesh	*Brahmina coriacea*	Apple leaves, Potato, Peach, Palm	Singh, 1964 Pal, 1977

Conclusion:

This article has attempted to assemble all the relevant information regarding predatory nature and host range of white grubs. Many researchers from different parts of the country have studied diversity, distribution, host range and attacks of white grubs. Out of all the works mentioned above majority of them found that *Holotrichia serrata*, *Holotrichia consanguinea* are most commonly occurring white grub species in India. White grubs are polyphagous pests which adversely affect the yield of agricultural and horticultural crops. Propper management practices are essential in order to reduce the attacks of white grubs. Reduction in the attacks of these severe pests is necessary to increase the crop yield in plantation, agricultural and horticultural field.

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The Study of Physico-chemical Parameters of Soil Samples from the Kannad locality of Marathwada Region

Nitin S. Muley[1] Dr. R. T. Parihar[2]
[1]Research Scholar Vidnyan Mahavidyalaya, Malkapur
[2]Asso. Prof. Dept of Chemistry Vidnyan Mahavidyalaya, Malkapur
Email- ni3muley@gmail.com
Email- rtparihar22@yahoo.in

Abstract-
The soils are chemically abnormal and have an alkaline reaction. Fifteen representative samples were obtained and analyzed. In terms of electrical conductivity, the pH range of 7.4 to 8.2 soluble salts is in the average range, with an average E.C. of 0.10–0.41 mm hos/cm. The majority of soils have low to medium organic carbon concentration. The phosphorus level is in the middle of the scale. Iron levels in soi samples ranges from 0.4 to 6.8 ppm. As a result, soils are generally high in Sulphur and magnesium carbonates but low in nitrogen and phosphorus. This chemical composition is mostly responsible for summertime soil cracking. This information will help to farmer solve the problems regarding the contents present in soil and also construction professional to know soil properties to avoid rapid corrosion occurs in underground condition. Certain external factor control plant growth, air, temperature, mechanical support, nutrients, and water.

Keywords-
Soil, Soil samples, Physiochemical Parameters, Soil analysis, Underground Condition, Moisture contents.

Introduction-

Soil analysis is a set of various chemical processes that not only determine the amount of available plant nutrients in the soil, but also chemical, physical and biological soil properties which are essential in the study of corrosion in the underground condition. The soil forms the middle zone in between atmosphere and the rock cover of the earth, the lithosphere. It also serves as a link between water bodies (hydrosphere) and the land surface, making it an essential part of the biosphere. The soil may be defined as the upper most weathered layer of the earth's layer in which are blended organisms and products of their death and decay. It's also known as the area of the earth's crust wherever plants are rooted. Agriculture has evolved in recent years from conventional and traditional agricultural techniques to more intensive activities that involve chemical fertilizers and pesticides, as well as irrigation methods. Steady use of chemical fertilizers eventually transformed soil qualities, significantly lowering productivity in the long run. Chemicals have leached into the surface and groundwater sources as a result. Because of the growing need for cash crops, commercial agricultural farming patterns have accelerated the degradation of water and soil quality. [1-6] The soil is a complicated system made up of six components: inorganic matter, organic matter, soil organisms, soil moisture, soil solution, and soil air. Approximately 50-60% mineral content, 25-35% of water, 15-25 % of air, and a small percent of organic matter make up the soil.[7] Industrial litter, agricultural residues, urban waste materials, biological contaminants, and radioactive waste are all directly contributing for the pollution of soil. The toxicity of the soil is increased by industrial pollution. Pollution from soluble salt causes damage to irrigated farms. Sewage pollution of the soil is also very severe. Humans are infected with a variety of diseases as a result of pathogenic organisms present in soil. [8-10] Soil contamination results from man's deposit of minerals to soils, the use of agricultural chemicals including herbicides, fungicides, and insecticides, dust fall and precipitation, fertilizer use, and contaminated water. [11-15] The main aim of this study was to understand the status of soil of the selected areas by studying the various physicochemical and microbiological parameters of soil of selected 15 samples. The soil sample were collected from different areas i.e., Residential, Commercial, Industrial, Roadside and along construction sites (where agricultural activities are carried out) of fields from kannad from the Marathwada region and was analyzed for different parameters as per the standard procedures.

Materials And Methods-

Sample Collection: The present study has been undertaken to investigate physic-chemical parameter of soil samples collected from the study area of kannad of Aurangabad district from the region of Marathwada. The soil characterization was carried out for the parameters of like temperature, Ph, Electrical conductivity, Total organic Carbon, Nitrogen, Phosphorus(P2O5), Potassium(K2O). The samples were targeted to collect from the soil surface at a deep of 0 to 20 cm. The process of hot air drying is used

to dry the samples thoroughly, sieved at 2mm, and stored in suitably marked plastic bags for analysis. The targeted samples were collected in January of 2022. To analyze the physio- chemical properties of the soil samples which are collected, they are dissolved in the distilled water and allowed particles to settle down at the bottom. Temperature of all the samples were measured at °C using a thermometer.

General Characteristics of the Location: Kannad taluka is the location lies in the Aurangabad district in Marathwada region of the Maharashtra with Coordinates: 20.27°N 75.13°E, with most of blackish soil present in it. Average rainfall in it is between 720.10-749.20 mm in average 40-44 rainy days in a year. The temperature range of this study area lies between 9-43 °C. The humidity percentage lies between 10-91%.[16-17] Agriculture is the main occupation in Kannad. Sugarcane, Onion, Ginger, Wheat, Maize and Jower are main crops cultured in Kannad Taluka.

Physio-chemical analysis of the samples: The analysis of the collected soil samples from the specific depth is conducted to analyze major chemical and physical parameters of the soil i.e. pH, EC, OC, N, P, K, Zn, B, Fe, Mn, Cu.[18-24] Also, the values at different locations differ from each other due to the various activities carried out around that area. Certain parameters exceeded the desirable limit while some parameters show less content as compared to their desired value range in the soil. 15 representative samples were obtained and analysed for this present study.

Table A Methods use for estimation of soil parameters.

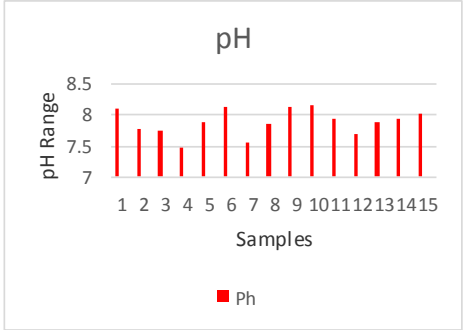
Parameter	Method
Colour, Nature	By viewing
pH	Pontentiometry
EC	Conductometry
Organic carbon	Wet oxidation
Available nitrogen	Alkaline permagnate
Available Potassium	Flame photometry
Available Phosphorous	Colorimetry

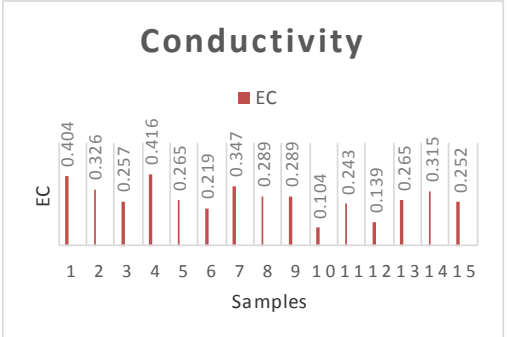
Results and discussion: The values of physio-chemical parameters are presented in Table B and figure 1 to 9. Colour of the soil sample was observed visually and black and brownish colour.

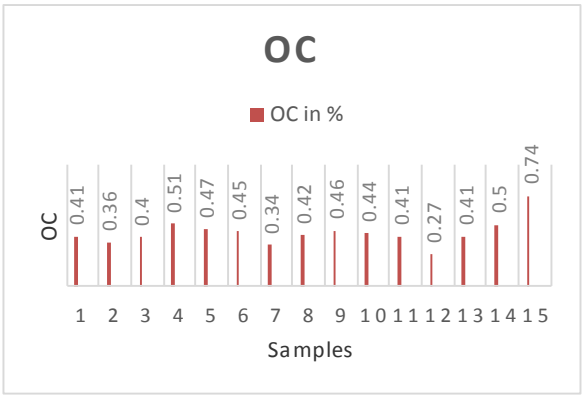
Table B Physicochemical characteristics of study area.

Sample No.	Colour	pH	Conductivity	OC	N	P	K	S	Fe	Mn
				%	Kg/ha	Kg/ha	Kg/ha	Ppm	ppm	Ppm
1	Black	8.106	0.404	0.41	155.62	11.97	563.70	24.46	3.26	13.92
2	Black	7.784	0.326	0.36	151.86	6.44	609.84	17.08	0.44	8.90
3	Black	7.742	0.257	0.40	207.08	9.82	259.28	11.26	4.30	10.64
4	Black	7.461	0.416	0.51	145.58	15.65	340.93	22.13	2.82	9.96
5	Black	7.896	0.265	0.47	229.67	7.67	297.70	9.32	1.20	6.48
6	Black	8.121	0.219	0.45	110.44	7.67	461.44	8.15	4.20	10.72
7	Black	7.562	0.347	0.34	120.48	11.97	506.58	13.98	0.34	3.04
8	Black	7.856	0.289	0.42	165.66	18.72	282.80	8.93	0.62	8.26
9	Black	8.124	0.289	0.46	158.13	8.90	462.78	15.14	0.90	9.16
10	Black	8.166	0.104	0.44	133.03	12.89	351.12	11.26	3.02	9.30
11	Black	7.951	0.243	0.41	169.43	17.49	173.15	16.31	1.16	8.82
12	Black	7.696	0.139	0.27	144.33	12.58	274.18	13.98	0.28	2.08
13	Black	7.896	0.265	0.41	197.04	9.21	349.78	9.32	3.06	8.46
14	Black	7.948	0.315	0.50	174.45	7.67	327.49	12.42	3.80	9.12
15	Black	8.012	0.252	0.74	107.93	6.44	591.92	19.80	6.88	11.48

Figures- 1-9: Graphical representation of physio-chemical parameters



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OC in %
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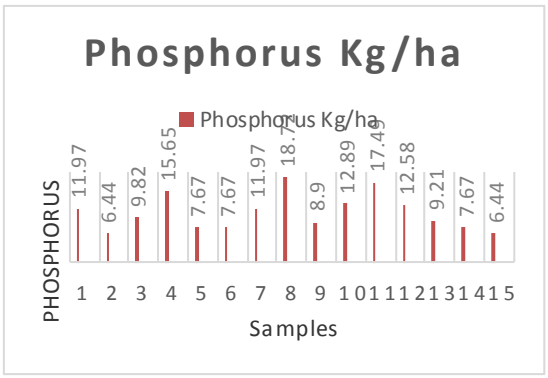
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Samples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Phosphorus Kg/ha
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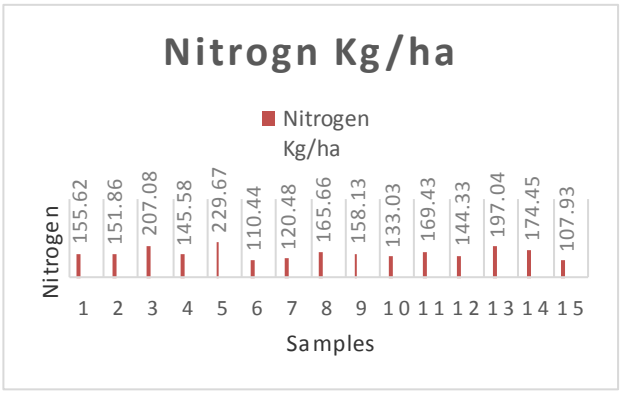
Samples


Nitrogn Kg/ha
Nitrogen Kg/ha
Nitrogen
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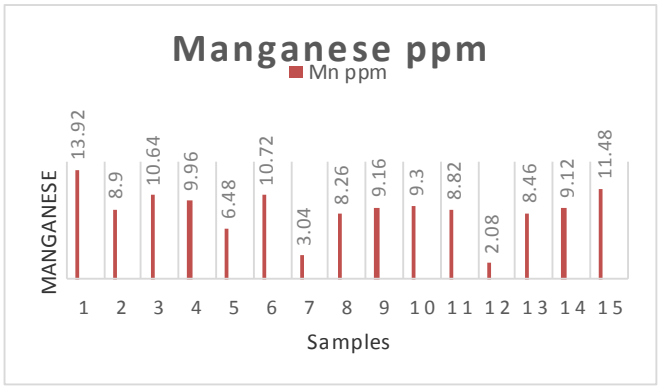
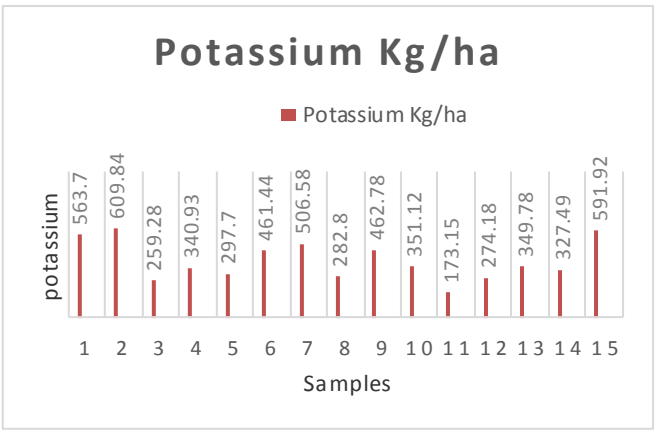
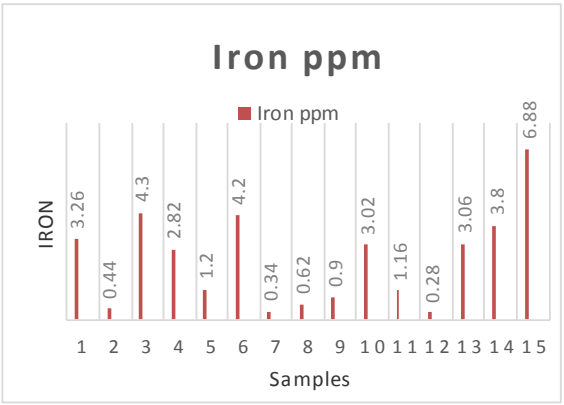
Samples


Manganese ppm
Mn ppm
MANGANESE
13.92 8.9 10.64 9.96 6.48 10.72 3.04 8.26 9.16 9.3 8.82 2.08 8.46 9.12 11.48
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Samples


Potassium Kg/ha
Potassium Kg/ha
potassium
563.7 609.84 259.28 340.93 297.7 461.44 506.58 282.8 462.78 351.12 173.15 274.18 349.78 327.49 591.92
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Samples


Iron ppm
Iron ppm
IRON
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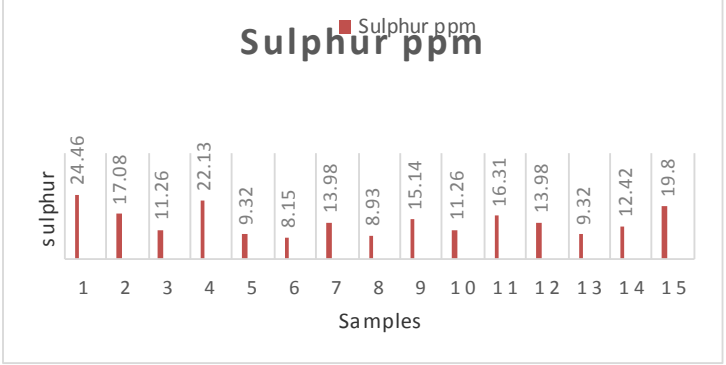
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Samples


Sulphur ppm
Sulphur ppm
sulphur
24.46 17.08 11.26 22.13 9.32 8.15 13.98 8.93 15.14 11.26 16.31 13.98 9.32 12.42 19.8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Samples

Conclusion

The conclusion taken from this investigation of physicochemical properties of soil samples is that various characteristics were observed at different locations. All the parameters either directly or indirectly related on the soil ecosystem. This could be linked to the uneven distribution of several factors in soil. Such soil sample monitoring is useful for determining the concentrations of various factors present in soil samples. Classification criteria the study area soils showed normal pH. The nutrient status information obtained can help farmers and policymakers adopt site-specific nutrient management methods. This information will help the farmers and professional related to constructions in this area.

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Problems faced by Badlapur Farmers during the Pandemic

Meghna Vesvikar[1] Supriya Suryawanshi [2]
[1,2](Asst. Prof.), College of Social Work, Nirmala Niketan (Autonomous), Mumbai

Abstract:
Indian farmers are already facing hurdles such as climate change, indebtedness, natural disasters, and price swings. The country's agrarian crisis has led to the number of farmer suicides increasing every year. Studies carried out across various countries show that farmers have faced numerous challenges during the pandemic. This research studies the impact of the pandemic on farmers of Badlapur from January 2020 to January 2022.

Keywords: Farmers, pandemic, Badlapur, agrarian crisis.

Introduction

Agriculture is the backbone of the Indian economy and one of its largest sources of employment. As a developing country, India needs to prioritize agricultural policies in order to promote its economic development. Based on the local geography and culture, technology used, the objective of farming, crops, and soil utilization, farming can be broadly divided into two parts: subsistence farming and commercial farming. Subsistence farming may happen on the same piece of land for years or on new pieces each time. Commercial farming focuses on commercial production of crops.

Concerns in Indian agriculture

1. Natural factors like climate change, irregular rains, floods and infestations.
2. Economic factors like low profits impoverishing farmers, indebtedness caused by taking loans for the next season, rain-fed farming, small plots, and lack of and transport, storage markets.
3. Social factors: Farming is seen as a traditional occupation with farmers not willing to part with their land, which is also a status symbol. Hence, with each generation, the plot keeps getting further divided, making farming on these small pieces of land financially unsustainable.

Rationale

The Indian welfare state has initiated numerous schemes which have been functioning for some time now. Sustainable agriculture is important for food security and human development. However, unexpected events like the pandemic and the lockdown have affected agriculture adversely and their impact needs to be understood in a scientific manner.

Objectives

1. To understand the respondents' socio-economic profile
2. To understand the economic, social and political impact of Covid-19 on farmers
3. To understand the farmers' coping mechanisms

Hypothesis

Farmers with lesser formal education had fewer coping mechanisms than others.

Problem Statement

India is an agricultural economy with a major part of the economy, trade and employment being shouldered by farming. However, post the Green Revolution, agriculture in India has only deteriorated in terms of availability of infrastructure like water and electricity, reaping, storage and marketing. Add to it rapid urbanization, population explosion, reducing soil capacity and land holdings, food grain shortage, consumerism and nuclear families. The visible impact of all these factors is the rapidly increasing number of farmer suicides in India. The pandemic and the lockdown were another blow to a weakening agrarian system.

Background and Significance of Study

Every year farmers face challenges like lack of rains, price instability, indebtedness etc. But the pandemic impacted Indian agriculture rather negatively. Due to the lockdown, labor and agricultural tools were unavailable. Markets were closed and even if they hadn't been, there was no transport. As a result, many farmers had to undersell their stock to middle men. Corruption in the local agricultural markets, a locust infestation, and a coastal storm disrupted the local food supply. This led to a sharp decrease in farmers' income, especially small farmers who did not have storage facilities.

Literature Review

As a result of the food chain being disrupted, essential food grains were in short supply, purchasing power reduced, drastically affecting farmers' food security and income. The pandemic also

reduced farmers' entry into markets, investments in agriculture, reduced production and increased economic insecurity, in addition to the pre-existing challenges of climate change, locust infestation and natural disasters. As few farmers had the requisite government-specified documents, they were also unable to take advantage of the public distribution system. (De et al, 2020). Agricultural input like seeds, fertilizers, pesticides, fodder etc were in short supply during the pandemic, especially the lockdown. Raw material prices increased but their quality deteriorated. Employment, production, consumer demand and supply chain management too was disrupted. Prices fell but labor charges increased. Producers of fruits, vegetables, milk, eggs and poultry were hit harder than those of food grains and oil seeds. The first lockdown adversely affected both employment and income, reducing the demand for these goods. The sudden lockdown, especially the first few weeks, disrupted the supply chains. In many locations across the country, mandis, village markets and weekly bazars were closed. Farmers couldn't sell to direct consumers but also to restaurants etc and had to sell their produce at low prices to local traders. Some fed their produce to their cattle. The situation for horticulturists was the worst due to their highly perishable product which in the lockdown could neither be stored nor sold (Rawal et al, 2020).

Methodology

This is a quantitative, descriptive, non-experimental study. A quantitative design was selected because the research seeks to identify the experiences of the farmers and their response. Also, little research has been done on this topic. Since the researchers are outsiders to the respondents' setting, the research also seeks confirmation for the findings and reliability. The data was collected at the respondents' homes amidst their natural environment without any manipulation. The study used purposive sampling from the non-probability sampling design. Thus is because the number of respondents is relatively small. The ample consists of 30 farmers from Badlapur, Thane district. The data collection tool was an interview schedule comprising both open and close-ended questions.

Analysis

30% respondents were aged between 46-55 years. Only one farmer was female. 53% had studied between Std. VI-X. 40% had 2 children. 63% lived in a joint family. 90% took help of family members for farming. 76% were of the Kunbi caste. 30% earned between RS. 21,000-30,000 per month. 36% had started work aged between 10-20 years. 40% respondents chose this occupation as they had no other option. 20% had land holdings of 1.5 acre. 50% used the river for water. 40% had production costs between Rs. 11,000-50,000.

Figure 1: Respondents' Annual Income and Production Cost

Annual income/ Production cost	1,80,000	3,00,000	4,20,000	5,40,000	6,60,000	Less income	Double of cost	Sufficient	Can't say	Total
Upto 10,000	4	1	0	0	0	0	0	0	0	5
11,000 - 20,000	1	4	1	0	0	0	0	0	0	6
21,000 - 30,000	0	1	0	0	0	0	0	1	0	2
31,000 - 40,000	0	0	0	0	0	0	0	0	1	1
41,000 - 50,000	1	0	0	0	0	0	0	0	0	1
51,000 - 60,000	2	0	0	0	0	0	0	1	0	3
61,000 - 70,000	0	1	0	1	0	0	0	0	0	2
71,000 - 80,000	0	0	1	0	0	0	0	0	0	1
1,00,000 - 1,50,000	0	0	0	0	1	0	0	0	0	1
1,51,000 - 2,00,000	0	1	1	1	0	0	1	0	0	4
Separate cost for each crop	0	0	0	0	0	0	0	1	1	2
Can't say	0	1	0	0	0	1	0	0	0	2

Total	8	9	3	2	1	1	1	3	2	30

Figure 2: Respondents' age and monthly income

Age / Monthly income	**26-35**	**36-45**	**46-55**	**56-65**	**66-75**	**76-85**	**Total**
11,000 - 20,000	1	4	2	1	0	0	8
21,000 -30,000	1	3	2	1	0	0	7
31,000 - 40,000	0	0	1	0	0	0	1
41,000 - 50,000	1	1	0	1	0	0	3
51,000 - 60,000	0	0	0	1	2	0	3
Double of cost	0	0	1	0	0	1	2
Sufficient	0	0	2	1	1	0	4
Can't say	0	1	0	1	0	0	2
Total	3	9	8	6	3	1	30

Figure 3: Problems faced by farmers during normal times and pandemic

Problems in pandemic/ Problems in farming	none	No support price	No tools	Less income	No labour	No transport	Less buyers	Less demand	Can't step out	Corona	Total
Lessincome	0	2	0	0	1	0	0	0	0	0	3
Produce spoilt	1	1	0	0	0	0	1	1	0	0	4
Lack of money	0	0	0	0	1	1	0	0	0	0	2
Climate	0	0	0	2	1	0	2	0	0	0	5
No markets	0	0	1	0	0	0	0	0	0	1	2
No rain	0	0	0	0	0	0	0	0	1	0	1
No seeds, fertlizer	1	0	1	0	0	0	0	0	0	0	2
No labor	1	1	0	0	0	1	0	0	0	0	3
Low price	1	0	0	0	0	0	0	1	0	0	2
No transport	0	0	0	0	0	1	0	0	1	0	2
None	1	2	0	0	0	1	0	0	0	0	4
Total	5	6	2	2	3	4	3	2	2	1	30

Figure 4: Family system and acreage

Family system/ acreage	Joint	Nuclear	Total
1 acre	4	1	5
1.25 acre	0	2	2
1.5 acre	3	2	5
2 acre	1	2	3
3 acre	1	2	3
4 acre	1	1	2
5 acre	2	0	2
8 acre	3	1	4
12 acre	1	0	1
20 acre	2	0	2

25 acre	1	0	1
Total	19	11	30

Figure 5: Chi Square Test of Family system and acreage

Test	Value	df	Asymptotic Significance (2-sides)
Person Chi- square	10.263[a]	10	.418
Likelihood Ratio	12.786	10	.236
N of Valid Cases	30		

Discussion

The main problems faced by farmers during the pandemic include les income, crop spoilage, lack of money, climate change, lack of markets, less rainfall, lack of seeds and fertilizer, no labour, low price, and no transport. Only 16% respondents were able to sell directly. Others were unable to go out, sold in markets or to traders, sold at whatever price was quoted or merely sent the produce in the available transport. Along with low price and lack of input, labor, tools, market and transport, there was also lesser demand and beatings by people and police. Hence, some farmers were unable to even go out for sale. Only 6% had online sale. They had no other strategy. Only 40% respondents had additional sources of income, chiefly dairy and renting tractors. Market committees were able to help only later in the pandemic by providing transport permits.

Recommendations

The respondents suggested the following government responses for pandemic affected farmers: crop insurance, compensation for damages, zero interest loans, free ration and financial help. They claimed that they were unable to avail welfare schemes due to large amount of paperwork and poor information and access. Farmers were especially concerned about perishable products like flowers. They demanded the implementation of the Swaminathan Committee recommendations, taluka level storage facilities, price guarantee and timely provision of input like seeds, fertilizer and pesticides.

Conclusion

The study findings show that farming was chosen as an occupation because there was no other viable option. Also, farmer income declines with age. This puts a question mark on the reach and effectiveness of the so-called welfare schemes for farmers.

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Impact of Russia- Ukraine War on Indian Economy

Dr. Rupali M. Burde
Assistant Professor, Commerce Department Shri Dhaneshwari Art's, Commerce & Science College, Aurangabad
Email: rupali.burde22@gmail.com

Abstract:-

Invasion, World War, Military Attack, Russia-Ukraine, Conventional, Global, Diplomacy, Catastrophe, devastation, historical, Defense, Nuclear Energy, Gauging, devastating effect, GDP, Inflation, NOMURA, Morgan Stanley, CAD, sluggish, spillover, households, disrupted, S-400, Throughout, Imports, Export, pillar, crisis, skyrocketing, boom, depleting, FIIS, normalization, NSE-NIFTY, BSE, Sensex, culminated, peak, geopolitical, Bleak

Introduction:-

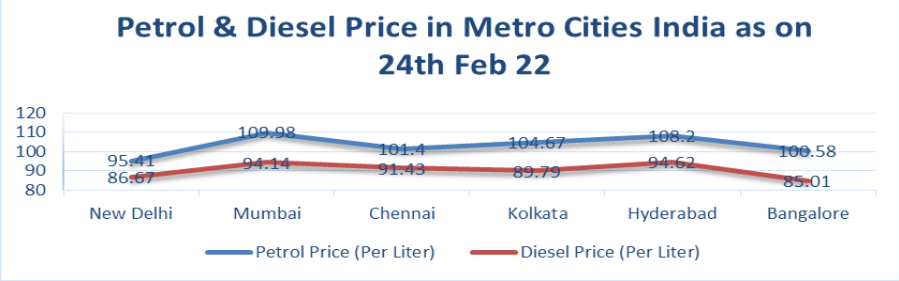
Invasion on Ukraine by Russia in February 22 was the largest conventional military attack seen since World War II and this invasion causing a global economic catastrophe. About this Russia-Ukraine war India has taken a neutral role, the reason behind it is this that India has historical strategic partnership with Russia since long period. This long period alliance spans several fronts- diplomacy, defense, nuclear energy and technology making Russia a pivotal part of India's building process especially during its infancy of India. However, it is unlikely that India will survive the devastation of such a war, as, in the global geopolitical context, both India and Russia today seem to be more closely linked to the US, China and other powers. According to Sunil Sinha, director of research and India's leading economist, the crisis over the Russia-Ukraine war has created uncertainty in world trade and will affect oil and other commodities. Though India not have huge trade with Russia, however, due to Western sanctions, supply disruptions will hurt India's economy. According Sonal Verma, chief economist at Nomura Holding, Even though India has no direct connection to the war, the supply chain is disrupted and the ongoing trade conditions are likely to affect growth, resulting in sharp rise in inflation and widening of the current account deficit.

Russia-Ukraine War Impact on various Sector

Petrol & Diesel Sector: Russia Ukraine war was started on 24 February 2022, On 24 Feb. 2022, Russia a launched on invasion of Ukraine. This timeline is a dynamic and fluid list. And as such may never satisfy criteria of completeness. Please note that some events may be fully understood and discovered only in retrospect. India's petrol was retailing at Rs. 95.41 per liter and the cost of diesel was Rs. 86.67 per liter. Similarly, in Mumbai, While Petrol rates were Rs. 109.98, diesel was trading at Rs. 94.14 per liter. In Bengaluru petrol was retailing at Rs. 100.58 where diesel stood at Rs. 85.81 per liter.

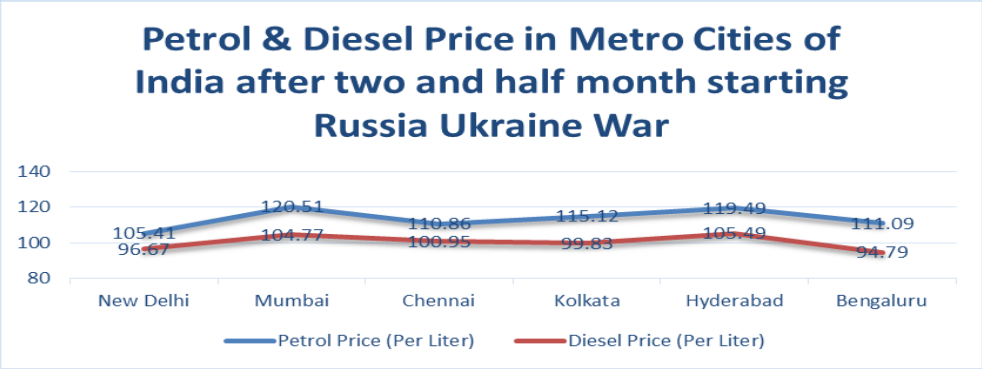
Petrol and diesel price in metro cities of India as follows (24 Feb. 2022)

City	Petrol Price (Per Liter) In □	Diesel Price (Per Liter) In □
New Delhi	95.41	86.67
Mumbai	109.98	94.14
Chennai	101.40	91.43
Kolkata	104.67	89.79
Hyderabad	108.20	94.62
Bangalore	100.58	85.01



Petrol & Diesel Price After two and half Month Starting Russia- Ukraine war

City	Petrol Price (Per Liter) In Rs.	Diesel Price (Per Liter) In Rs.
New Delhi	105.41	96.67
Mumbai	120.51	104.77
Chennai	110.86	100.95
Kolkata	115.12	99.83
Hyderabad	119.49	105.49
Bengaluru	111.09	94.79



After Russia-Ukraine war the petrol & diesel Price Hiked not only in India but all over world, because of it all product costs become more costly than previous.

Ban on Russia's crude export by USA & European country.

In reaction to the USA ban on all oil and gas imports from Russia, crude oil prices surged to nearly $130 per barrel last week up 43% from February 22 Brent crude oil prices since Ukraine Invasion. This is a major setback for global economic growth as Russia is one of the largest exporter of crude oil globally. India's trade however, comprises only 1% oil imports from Russia, but there could be a spillover impact in the form of high inflation and sluggish growth could have a knock on effect. In March 2013, Morgan Stanley dropped it. Due to high crude oil prices, India's GDP growth forecast for economic year 2023 has increased by 50 basis points to 7.9 %. "We expect smooth trade to continue and we expect it to be more favorable than ever before" the report said. But the current war situation has increased external risks and created a currency inflection. Further weakening of global growth will hamper India's export and capital expenditure cycle and increase trade risk.

Inflationary Concerns

International crude oil prices are on its highest rate in 14 years. India imports 85% of its crude oil as it needs to import crude oil. The war will have a devastating effect on the Indian economy, this will make India's economic life more expensive and the Indian economy will fall victim to inflation. The impact on India's economy will be felt mainly by all households, businesses and the government due to the high cost-inflation burden.

The **Japanese global investment banking powerhouse company NOMURA** stated that in every 10% rise in crude oil prices leads to a 0.4% point rise in consumer inflation.

The Leading Global investment Bank and Asset Management Firm Morgan Stanley has set retail inflation at 6% for F.Y. 2023, much higher than the RBI's 4.5%.

Consumer inflation rate in India since 2021

The sharp rise in global crude oil prices and its impact on CPI inflation will be a matter of concern for the RBI. This has increased the risks of a higher import bills and, alternatively, increase in India's current account deficit (CAD). According to report by NOMURA Research, CAD is expected to grow to 2.6% of GDP in Fiscal year 2023, up from 1.7% last year. This is likely to weaken the rupee, which has recently touched a record low of 76.98 against the dollar.

India's Defense supplies

Many time India's abstentions from voting at the United Nations in the wake of the Ukrainian invasion are believed to be due to the need to secure the country's supply of defense equipment, most of which comes from Russia According to the Defense Think Tank of the Stockholm International Peace Research Institute, between 2016 and 2020, India's share in Russia's total arms exports was about 25%. India has allocated $ 70.2 billion on military expenditure in the 2022-23 Union Budget, which is more than 10% of the initial allocation of the previous financial year. The 5 5 billion delivery of the Russian-developed S-400 air missile system is a key defense control that was signed in October 2018. In the middle term, India will

continue its reliance on Russia's weapons system. Analysts say India has a large stake despite US threats to impose sanctions on S-400 purchases.

Impact on Education System

The number of students going from India to Ukraine and Russia for education is 24,000 and 40,000 respectively. The war has darkened the future of students in Ukraine and Russia. 99% Indian student already returned to India from Ukraine and if the war does not stop, Indian student of Russia will also have to return to India. Therefore the students who were going to be a major pillar of India by learning. Seems to be in a state of mental stress as their education is incomplete. But Poland seems to have solved this problem to some extent by giving opportunity to Indian student who studying in Ukraine to pursue a similar education at a Polish university.

Impact on Indian Financial Markets

The active cooperation of a large number of foreign institutional investors (FIIS) has the immediate effect of external shocks and tremors on the domestic stock market. The BSE Sensex fell from 61,766 peaks in October 2021 to 52,843 on March 7, 2022. The Index fell 14.4 % from its peak today to 9.3% during the year. Similarly, NSE-Nifty has come down to 15,863 on March 7, 2022. Which peaked at 18,477 in October 2021 and has declined by 14.14% during this period. The BSE Sensex fall from 57,621 to 52,543 and recorded a high of 8.81 as compared to February 7, and NSE-NIFTY fell 7.94%. The Conflict which began in early February and culminated in a market boom, saw investors lose millions of assets. As the losses deepen the market will turn into a recession. And the global central banks will wait for normalization without struggle and market uncertainly will increase.

Impact On Share Market

Russia invasion of Ukraine has roiled Indian share markets. Inflation and the Prospect of higher interest rates were a heady contributing to market volatility. Now global sanctions and the day to day events in Ukraine have made navigating volatile markets even more difficult. The market cap of BSE-listed companies dropped significantly by Rs. 6.28 lakh crore to Rs. 240.57 lakh crore. Share market the Russia-Ukraine war is taking its toil on the share market as stock market investors lost more than Rs. 6 lakh crore in early trade on Monday.

Objective:

1. Find out if the Indian economy has really been disrupted by the war between Russia and Ukraine.
2. To examine the impact on the price of essential commodities in India.
3. Examine the impact on the Indian stock market.
4. To find out whether the life of an Indian citizen is safe from war.

Hypothesis:

1. The Russia-Ukraine war has disrupted the entire economy.
2. The Prices of essential commodities have risen in the economy.
3. The war between Russia and Ukraine has pushed up petrol and diesel prices.
4. The war in Russia and Ukraine has disrupted the lives of ordinary people.
5. The Future of Indian students studying in Russia and Ukraine is bleak.

Research Methodology

To publish this research paper information has been taken from published articles from internet sites and monthly publications. With help of these online published data this descriptive and analytical research paper has written

Conclusion:

The war between Russia and Ukraine has had a devastating effect on the global economy.

Throughout the world economy and also in Indian economy crude oil prices and commodity price have risen sharply.

1. Man power is depleting in both country.
2. Due to the war the inflation in India is on the rise.
3. The global fear of being chugged into war has been created.
4. Prices of goods that India imports from Russia and Ukraine are rising in India.
5. Therefore a dire situation is being created in the Indian economy, with the employment crisis on the one hand and the boom on the other.
6. It is estimated that more that 35% of India’s trade is with Ukraine and Russia this could adversely affect India’s export
7. India’s development is likely to be hampered to some extent by this war.
8. Indian citizens seem to be suffering from the skyrocketing prices every month are making life difficult for the citizens of India.

9. Rising petrol prices every month are making life difficult for the citizens of India

Recommendations

1. India should develop its self-dependent economy.
2. India require develop relation with other crude oil supplier country.

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Financial Awareness of Higher Secondary School Students

Pallavi Sasidharan Pillai[1] Prof. (Dr.) Bindu R L[2]
[1]Research Scholar, Department Of Education University Of Kerala
[2]Department Of Education, University Of Kerala
Email- Pallavisasidharanpillai@Gmail.Com
Email- binduindraneelam@gmail.com

Abstract

Financial awareness is the capacity to use information and skills to manage personal and lifetime financial resources effectively. The investigator intends to determine the financial awareness of higher secondary school students and test the significant differences in financial awareness of higher secondary school students based on gender and the main subject of study. The investigator adopted a survey method, and a sample of 300 higher secondary school students was selected for the present study. The data was collected using a financial awareness scale. The investigator finds out that higher secondary school students have a moderate level of financial awareness. The results also showed that female higher secondary school students have higher financial awareness than male higher secondary school students. The study also reveals that higher secondary school commerce students have higher financial awareness than science higher secondary school students.

Keywords: Financial awareness, higher secondary school students, Gender, Main subject of study

Introduction

Nowadays, people suffer from a high level of financial crisis. They never stop asking questions about managing their financial resources properly, how the money will work for them, and how their financial actions will affect their long-term financial security. Most of us believe that swiftly accumulating large sums of money will solve our difficulties. It may be true for some, but others might find themselves in a more problematic situation without the knowledge to handle it properly. The individual should be provided with proper financial education. Financial education is learning about financial and economic issues during a course of study. Financial education has expanded significantly. Financial education focuses on financial literacy, expectations, and satisfaction in financial affairs. Hira and Loibl (2005)

Financial literacy is quickly acknowledged as a critical ability for consumers working in an increasingly complicated financial environment. As a result, it should come as no surprise that governments worldwide are looking for practical ways to enhance financial literacy among their citizens. Many are working to develop and implement a national financial education policy that will give opportunities for people to learn throughout their lives. Financial literacy deals with many matters at different levels of our life. It aids people in managing their finances and raising their level of living. However, it also contributes to the soundness and efficiency of the financial system and the economy's performance. Financial awareness is a synonym of the word financial literacy. It is always closely related to a collection of knowledge (stock of knowledge) about financial products and how to use them (Huston, 2010). Many of us do not understand what financial products have circulated in the community. They know money and banks, but their knowledge is nothing more than shopping and saving money. This ignorance causes access to increase welfare to be hampered. At the same time, financial planning is the ability to divide funds into various financial posts or channels. They start from urgent and essential needs to allocating short term, medium-term, and long-term needs. So that families or individuals can fulfill all their needs proportionally if they have good financial management awareness. Without that ability, someone can spend their money fulfilling a hobby or momentary pleasure that is not needed. Financial literacy is a meaning-making process in which individuals use a variety of skills, resources, and contextual knowledge to process information and make effective decisions with knowledge of the financial consequences of that decision (Mason and Wilson, 2000). Based on the researchers' records, it is believed that the following factors greatly determine a person's financial awareness: social background, education, gender, and culture (Forté, 2014).

Due to the recent financial crisis, citizens are becoming more interested in following and comprehending economic issues and financial trends. Furthermore, there is a revived focus on encouraging more responsible individual saving and borrowing behavior from an institutional and social constructionist perspective. Citizens' ability to make informed financial decisions is crucial to developing healthy personal finance, leading to higher savings rates, more effective resource allocation, and excellent financial stability

(Kunt & Klapper, 2013). People that are financially aware can live a more wealthy life. They can plan their finances. Individually and throughout the lifecycle, proper knowledge and skills are employed to manage financial resources effectively. It is more than just numeracy, yet numeracy is necessary for and of itself. Financial awareness is not related to much money or material. No matter how much income, if the owner cannot allocate wealth well, surely it will not be able to fulfill all of their needs. Monticone (2010) found that wealth is not a significant factor in households having good financial awareness. Economic difficulties are suffered by some people usually because they are not aware of financial problems. Financial awareness is a trend of economic studies that are increasingly in demand by many people. Today formal education to generate financial awareness is one of the essential things. Financial awareness is not the only individual factor contributing to one's decision to participate in the financial market; willingness to take a risk also plays a critical role in any financial decision (Lee et al., 2015; Weber and Milliman, 1997). Many factors underlie our weaknesses in terms of financial awareness, education, easy access to financial products, or personal reluctance. Someone may be significantly affected by his family spending his/ her money. However, sometimes the family has a minimal role compared to the social environment when he/ she grows an adult. On the other side, maybe the most important thing that determines his/ her awareness is the attitude and actions in financial matters.

Rationale of the Study

The awareness regarding financial education is gaining encouragement among policymakers across the world's economies. Debt can be an overwhelming concern for young adults and students. Youth is one of the fastest-growing populations to accumulate debt (Burdman, 2005; Lusardi et al., 2010; Pinto & Mansfield, 2005). As younger generations face increasingly complex financial products and services, it is critical to assist them in understanding their financial difficulties. Some children are also more likely than their parents to face more significant financial risks as adults, including saving, retirement planning, and healthcare coverage (OECD, 2011). Students' attitudes toward allocating money from their parents are influenced by their actions. Some groups squander all of the money supplied by their parents, often begging for more; others save and invest some of it. Students' spending habits are influenced by their financial awareness. Higher secondary students, the future generation, should understand financial concerns and know how to cope with them. Therefore the investigator felt a need to find financial awareness of higher secondary school students. Hence the study is entitled ***"FINANCIAL AWARENESS Of Higher Secondary School Students."***

Objectives of the Study

1. To determine the level of financial awareness of higher secondary school students.
2. To determine whether there is any significant difference in financial awareness of higher secondary school students based on gender.
3. To determine whether there is any significant difference in financial awareness of higher secondary school students based on the main subject of study.

Hypotheses Formulated For the Study

1. The level of financial awareness of higher secondary school students is moderate.
2. There will be a significant difference in financial awareness of higher secondary school students based on gender.
3. There will be a significant difference in financial awareness of higher secondary school students based on the main subject of study.

Methodology in Brief

Method Adopted For the Study

The investigator adopted a normative survey method for the study

Population

The population of the study includes all higher secondary school students in Kerala.

Sample Used For the Study

A sample of 300 higher secondary school students from the Kollam district was selected for the present study.

Sampling Technique Used For The Study

The cluster sampling technique was employed for the present study.

Tools Used For The Study

The investigator prepared a financial awareness scale for collecting the data.

Statistical Techniques Used For The Study

1. Descriptive Statistics
2. t-test

Analysis And Interpretation Of Data

Analysis Of The Level Of Financial Awareness Of Higher Secondary School Students

Table 1: ***Classification of higher secondary school students based on their level of financial awareness***

Level	N	Percentage
High	76	25
Moderate	191	64
Low	33	11

Table 1 depicts that 25% of higher secondary school students have a high level of financial awareness, 64% of higher secondary school students have a moderate level of financial awareness, and 11% of higher secondary school students have a low level of financial awareness. Hence, the investigator concluded that financial awareness of higher secondary school students is moderate.

analysis of financial awareness of higher secondary school students based on gender.

Table 2: ***Test of significance for the difference between the mean financial awareness scores of male and female higher secondary school students***

Category	Sample	Mean	SD	CR	Level of Significance
Female	152	66.35	4.86	4.50	0.01
Male	148	63.79	4.95		

Table 2 shows a difference between means that are significant at the 0.01 level (C. R =4.50). This result shows a significant difference in the financial awareness of male and female higher secondary school students. Here the mean score of male higher secondary school students (M= 63.79) is less than that of female higher secondary school students (M=66.35). Hence, the investigator concluded that the financial awareness of female higher secondary school students is more significant than that of male higher secondary school students.

Analysis Of Financial Awareness Of Higher Secondary School Students Based On Main Subject Of Study.

Table 3: ***Test of significance for the difference between the mean financial awareness scores of commerce and science higher secondary school students***

Category	Sample	Mean	SD	CR	Level of Significance
Commerce	156	66.59	5.04	5.61	0.01
Science	144	63.46	4.58		

From table 3, it is clear that the difference between means is significant at the 0.01 level (C. R =5.61). This result indicates a significant difference in the financial awareness of commerce and science higher secondary school students. Here the mean score of commerce higher secondary school students (M=66.59) is greater than that of science higher secondary school students (M=63.46). Hence, the investigator concluded that the financial awareness of higher secondary school students of commerce is higher than that of science higher secondary school students. Generally, higher secondary school pupils in commerce have a better grasp and knowledge of dealing with money than students in science. Students in commerce receive theoretical and practical financial understanding.

Findings of The Present Study

1. The level of financial awareness of higher secondary school students is moderate.
2. The female higher secondary school students have greater financial awareness than the male higher secondary school students.
3. The Commerce higher secondary school students have greater financial awareness than the science higher secondary school students.

Conclusion

Financial awareness is the knowledge and perceptions of costs, affordability, and financing options based on information and guidance accessible, which will help people manage their financial affairs and improve their standard of living. The present study revealed that higher secondary school students have a moderate financial awareness. The results also showed that female higher secondary students have greater financial awareness than male higher secondary school students. The study also reveals that higher secondary school commerce students have greater financial awareness than science higher secondary school students. The study throws light on the aspect that related financial contents

should be included in the science curriculum so that the students will know more about how to deal with the financial aspects.

Educational Implications

1. Financial skills and knowledge should be developed through practical applications of Personal Finance and budgeting as part of the school's learning objectives. Students will be able to establish proper attitudes toward financial behavior and make sensible financial judgments that will improve their long-term well-being with such training and skillsets.
2. Early in life, teachers should provide kids with "hands-on chances" in financial concerns that will help them develop a greater understanding and essential experience with everyday financial decisions.
3. School curriculums should integrate financial literacy-based programs in their schools so students can enroll early to foster positive financial awareness, attitude, and behavior.
4. Students in schools can take short-term courses in personal finance management. All disciplines should be required to complete these. These courses should provide students with hands-on experience, encouraging participation and the transmission of knowledge and financial management skills.
5. Financial literacy month should be observed in schools, and it should be taught as a subject. It would teach the kids the value of budgeting.

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Rapid Survey on Diversity of Spiders (Arachnida: Araneae) From Some Localities of Ahmednagar City of Maharashtra State, India

Khomane T.S[1] Saraf S.A[2]
[1]Dr. Rafiq Zakaria College for Women, Jubilee Park, Aurangabad (M.S.) India.
[2]Department of Zoology, Babasaheb Ambedkar Marathwada University Aurangabad (M.S.) India.
tanujakhomane123@gmail.com

Abstract

Indian faunal diversity includes on extreamly abundant group of animals, spiders. They are most omnipresent and frequent predator in both agriculture and natural ecosystem. Diversity of spiders depends on prey availability and ecology of habitats. The order Araneae of Class - Arachnida includes spiders, which are important links in the terrestrial food webs and also serve as bioindicators. The present study was intended to discover the species diversity of spiders from Ahmednagar city of Maharashtra, India. The study includes collection of spiders from different sites including, Ahmednagar fort, Kapurwadi, Sonewadi, Farah Bagh and Chand Bibi Mahal area. The research activity was spread over a period of six months from October 2019 to March 2020. 27 spider individuals belonging to 08 families were collected, out of which 15 individuals were identified up to species and 12 specimens remained unidentified. Family Araneidae was the most abundant followed by Salticidae, Thomisidae, Pholcidae, Tetragnathidae, Hersilidae, Oxyopidae and Sparassidae.

Key words: Ahmednagar**,** Diversity, Spiders, Araneae, Maharashtra, Species.

Introduction

Spiders are found worldwide and distributed over every continent except Antarctica. There are approximately 42,055 species of spiders reported globally [18, 19]. Spiders range in body length from 0.5 to about 90 mm (0.02–3.5 inches). The largest spiders are the hairy mygalomorphs, commonly referred to as tarantulas, which are found in warm climates and are most abundant in the Americas. Female spiders generally are much larger than males, a phenomenon known in animals as sexual size dimorphism. Spiders play an important role in the regulation at insect population in many ecosystems. Spider are valuable indicators at the spatial heterogeneity at landscape in terms of composition and diversity of species in an ecosystem. Spiders are ancient and successful invertebrates, residing in all types of habitats worldwide [16]. Spiders are octopod creatures which belong to phylum Arthropoda, Class Arachnida and the order Araneae [6]. Spiders occupy an important part of the overall predatory arthropod fauna in different terrestrial ecosystems [14]. Spiders are found in different habitats with high humidity [11].

Material and methods

The present study was aimed to assess the diversity of spiders in some areas of Ahmednagar city of Maharashtra State of India. The primary objectives of the study were to record spider specimens so as to prepare a preliminary checklist of spiders from the study area and to find out dominant and rare taxa. The research activity was spread over a period of six months from October 2019 to March 2020. Ahmednagar City is the Headquarters of Ahmednagar District [Latitude: 19º05'40.45" N, Longitude: 74º44'18.35" E]. The collection of spiders was done in Ahmednagar fort, Kapurwadi, Sonewadi, Farah Bagh and Chand Bibi Mahal area. Spiders were collected by adopting standard sampling techniques such as active searching, photographing and hand picking [3] &[14]. All surveys were conducted in the morning and evening hours. Collected spiders were photographed and preserved in 70% alcohol. Spiders were looked for and observed in a variety of places such as garden edges, official/ residential buildings, road-side vegetation, on the bark of trees and underneath stones [4]. Ground search were done under leaf litter, fallen or dry wood [2]. The direct capture method (hand-picking method) was implemented to catch spiders above ground and on the plants [8]. Searching was also done by jerking the twigs of trees and bushes [10]. Freshly collected specimens were anaesthetized with Ether and then placed on a plain surface and photographed immediately using Mobile camera. The date and location of collection were noted and the other morphological features observed clearly and noted as per [11] [13] for preliminary identification. Spider identification and classification is based on the morphometric parameters such as an eye arrangement, cephalothorax, labium, palps, abdomen and claws [6,9]. Spiders were observed using stereo zoom microscopes for studying morphological features as per [17]. Identification of the spiders was done with the help of expert taxonomists and scientists from Zoological Survey of India (ZSI), Pune and identification keys [15].

Results

In the present investigation, spider specimens were collected from some areas of Ahmednagar city such as peripheral regions of Ahmednagar fort, suburban zones of Ahmednagar Kapurwadi, Sonewadi, Farah Bagh and mountainous terrain of Chand Bibi Mahal. Spider samples were collected from leaves, branches, barks and trunks of trees; as well as from dried fallen leaves, grasses, rocks and underneath stones. Spiders were also collected from gardens, grasslands, semi-forest patches, official and residential buildings, and roadside vegetation. Spider specimens collected and identified are enlisted in Table 1. Out of the total 27 spider specimens collected, 15 belongs to 08 families, were identified. Family Araneidae was found to be most abundant followed by Salticidae, Thomisidae, Pholcidae, Tetragnathidae, Hersilidae, Oxyopidae and Sparassidae. Family Araneidae included 05 species, Salticidae 03 species, Thomisidae 02 species, whereas families Pholcidae, Tetragnathidae, Hersilidae, Oxyopidae and Sparassidae, each with 01 species. Familywise dominance of spider species is shown in Figure 1. It was observed that higher diversity of spiders was found in areas of vegetation and areas where there was less human activity. Higher number of spiders was found in places of insect abundance, as we know that spiders are carnivores, predatory and chiefly insectivores. Future efforts may be able to focus on 'Integrated Pest Management' using this database.

Discussion

In studies by [2] and [9], the family Araneidae was found to be more dominant and most of the species of spiders are found belonged to family Araenidae and Salticidae. These observations are similar to the results of the present study. A study by [5] involved collection and identification 60 specimens of spiders, out of which 27 species represented 09 families and 18 genera. Family Araneidae was the most dominant with 12 species followed by Salticidae (04 species), Oxyopidae (03 species) and Lycosidae (03 species) and 01 species each from family Pholcidae, Thomisidae, Tetragnathidae, Eresidae and Hersilidae. Among the 19 families of spiders observed by [8] in the Zolambi region of Chandoli National Park, high diversity was observed in the families Araneidae (20 species) > Salticidae (17 species) > Lycosidae (13 species) > Thomisidae (7 species) and her results indicated the dominance of ground dwelling spiders like Salticids, Gnaphosids and Lycosides. Dominance of ground dwelling spiders was also observed in the present investigation. According to the survey of the spider fauna of the irrigated rice ecosystem in central Kerala, India by [12], the widely distributed families were observed to be Araneidae, Lycosidae, Tetragnathidae and Salticidae. The study on the taxonomic status of spiders in Mehsana District North Gujarat, India [10] recorded the higher count of species to be from the families of Araneidae, Salticidae and Lycosidae. Similar observations were made in the present investigation too. According to [1] the Jowai area in Jaintia Hills of Meghalaya, India, tremendous destruction of the forest habitat along with the expansion of civilization may affect the distribution pattern of different spider species. The study sites in Ahmednagar area in present research work also proves that depletion in vegetations and extension of city and suburban areas, might have led decreased spider diversity.

Conclusion

In the present investigation, diversity of invertebrate fauna of spiders belonging to Phylum Arthropoda, Class Arachnida and Order Araneae; was studied from varied habitats in few areas of Ahmednagar city. Total 27 spider individuals belong to 08 families. The family Araneidae was found to be most abundant followed by Salticidae, Thomisidae, , Pholcidae, Tetragnathidae, Hersilidae, Oxyopidae and Sparassidae. Familywise diversity of spiders was observed as: Araneidae (05 species) > Salticidae (03 species) > Thomisidae (02 species) > Pholcidae (01 species), Tetragnathidae (01 species), Hersilidae (01 species), Oxyopidae (01 species), and Sparassidae (01 species). Diversity of spiders was more in the regions of rich vegetation showing abundance of insects, which may be due to their habitat preference and insectivorous habit. During the past few decades, some parts of the densely vegetated areas of the city were converted into domestic and commercial constructions and open spaces have been encroached upon for various purposes. Such change of land use pattern probably has a negative impact on faunal diversity, especially that of spiders. Spider diversity and abundance depends on food i.e., prey population, which is decreasing and therefore we observed less diversity of spiders in the present study.

Table 1. Spider Specimens from some areas of Ahmednagar City

Sr. No.	Order	Family	Zoological Name
	Araneae	Araneidae	Araneus mitificus
	Araneae	Araneidae	Cyclosa sp.
	Araneae	Araneidae	Argiope anasuja
	Araneae	Araneidae	Cyrtophora cicatrosa

	Araneae	Araneidae	Neoscona mukerjei
	Araneae	Salticidae	Plexippus paykulli
	Araneae	Salticidae	Rhene sp.
	Araneae	Salticidae	Hyllus semicupreus
	Araneae	Thomisidae	Thomisus sp.
	Araneae	Thomisidae	Oxytate sp.
	Araneae	Pholcidae	Pholcus sp.
	Araneae	Tetragnathidae	Leucauge decorata
	Araneae	Hersilidae	Hersilia savignyi
	Araneae	Oxyopidae	Oxyopes sp.
	Araneae	Sparassidae	Heteropoda sp.

Photo plate- 1

1. Araneus mitificus

2. Cyclosa sp.

3. Argiope anasuja

4. Cyrtophora cicatrosa

5. Neoscona mukerjei

6. Plexippus paykulli

7. Rhene sp.

8. Hyllus semicupreus

9. Thomisus sp.

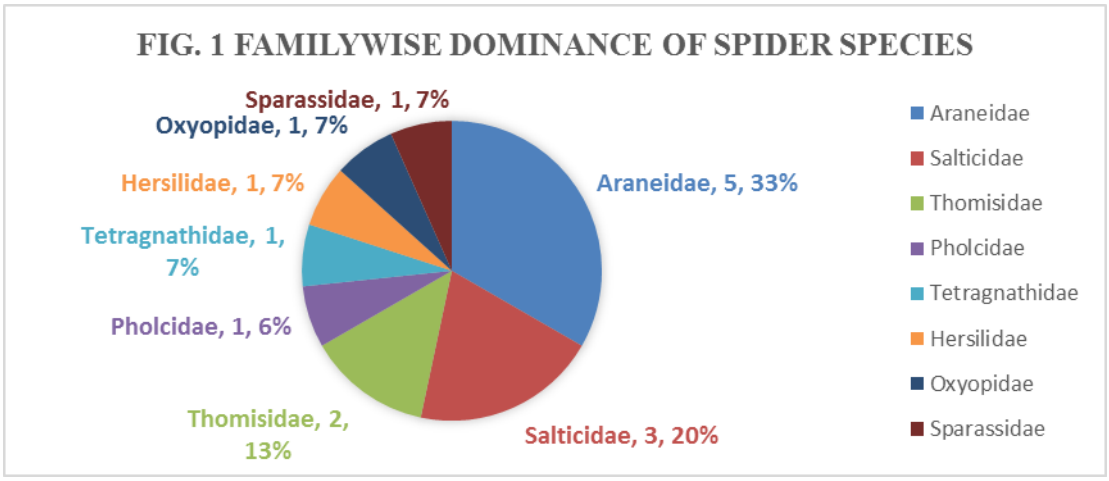
10. Oxytate sp.

11. Pholcus sp.

12. Leucauge decorata

13. Hersilia savignyi

14. Oxyopes sp..



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Studies Of Physico-Chemical Parameters Of Well Water Near The Thermal Power Station, Parli (V), Dist Beed Maharashtra, India

R. G. Momle
Head Dept. of Chemistry, Late Shankrrao Gutte Gramin, ACS College Dharmapuri, Dist. Beed

Abstract:
The physico-chemical parameters of water bodies near the thermal power station parli (v) were studied monthly from August 2007 to January 2008 from well one station. This result revealed that Physical appearance, Odour, Temperature, pH, Turbidity, Chloride, Nitrite, Iron, Fluoride, Alkalinity, DO, and BOD are within the permissible limit but Total hardness and TDS were found above the permissible limit.

Key Words: Well water, Physico-chemical parameter, thermal power station.

Introduction:

The well-known thermal power station parli (v) Dist- Beed is established in 1975 in Maharashtra state. One of the units of thermal power station is 2km far away from parli (v) city and second unit is 9 km far away from parli (v) city. Before 2007 there was only one unit having a capacity of producing 800MW electricity. In 2007 as per the need of more electricity, the second unit was established which produces 250MW electricity. Electricity produced from this power station is supplied to some districts in Maharashtra as well as to some districts of Karnataka. Due to the demand of electricity Government going to establish third unit to produce more and more electricity. The well water, stream water and river water in the surrounding area get contaminated because of thermal is fly ash.

Materials and methods:

The new thermal power station is making its own ash pond for disposal of solid waste material, which is I km away from power station. The study area is being visited monthly and the surface water sample is collected from a well, which is fixed station near ash pond from august 2007 to January 2008. Some physico-chemical parameters such as Physical appearance, Odour, Temperature, pH, Turbidity, Chloride, Total hardness, 'TDS Nitrite, Iron, Fluoride, Alkalinity, DO and BOD are estimated by using the standard method prescribed by Trivedy and Goel 1984 and kodarkar et.al. 1998.

Result and Discussion:

Table-1 Physio-chemical parameter of well water, near the thermal power station parli(V).

Sr. No.	Parameter	Result obtained in average	Units	Desirable Limit as per IS:10500:01991
1	Physical appearance	Clear	-	-
2	Odour	Odorless	Unobjectionable	Unobjectionable
3	Temperature	22	^{0}C	-
4	Turbidity	0.5	NTU	5
5	pH	6.83	-	6.5-8.5
6	Chloride	296.5	Mg/lit	Max 500
7	Nitrite	0.01	Mg/lit	Max0.2
8	Total Hardness	440.67	Mg/lit	Max 300
9	TDS	1325.8	Mg/lit	Max 500
10	Iron (Fe)	0.24	Mg/lit	Max 0.3
11	Fluoride	0.4	Mg/lit	Max 1
12	Alkalinity	115	Mg/lit	Max 200
13	DO	4	Mg/lit	-
14	BOD	5	Mg/lit	-

Physical appearance and odour:- The result obtained during present investigation.
depicted in table, physical appearance of water was clear and odourless indicating the water is not polluted.
Temperature: Temperature is an important biologically significant factor, which plays an important role in the metabolic activities of the organism. Temperature in the water is important for its effects on the chemical and biochemical reactions in the organisms. Based on the results it was noted that the temperature fluctuated in between 220C to 340C.

Turbidity:

The excessive turbidity in water causes problems with water purification process such as flocculation and filtration, which may increase treatment cost. Elevated turbid water is often associated with the possible of microbiological contamination as high turbidity makes it difficult to disinfect water properly, Jayalakshmi et.al. (2011). In the present investigation turbidity was found average 0.5 NTU i.e. within the permissible unit pH: pH is a term used universally to express the intensity of the acid or alkaline condition of a solution. Most of the water samples are slightly alkaline due to presence of carbonates and bicarbonates, Murhekar (2011). pH is an imp factor like exposure to air, emp and disposal of industries waste etc. brings about change in pH, Sakhare and Joshi (2003). In the present investigation pH average is 6.83, within the permissible unit but slightly acidic.

Chloride:

The chloride concentration serves as an indicator of pollution by sewage. People accustomed to higher chloride in water are subjected to laxative effects, Sudhir Dahiya et.al. (1999).The chloride was found in the present investigation in the average 296, 5Mg/lit. Chloride is also within the permissible unit. trite:

Total dissolved solids:

Total dissolved solids indicate the salinity behavior of groundwater. Water containing more than 500 mg/L of TDS is not considered desirable for drinking water supplies, but in unavoidable cases 1500 mg/L. is also allowed, Shrinivasa Rao (2000), High level of TDS in water used for drinking purposes leads to many diseases which are not water-born but due to excess salts. In the present investigation TDS was in average about 1325.8 Mg/lit. i.e, above the permissible limit, Similar result occurs the most remarkable observation of investigation was the alarmingly high level of total dissolved solids (TDS). The TDS of all the samples were in range of 600- 2600 mg / lit. The present investigation has provided a good platform for further study to analyze the types and amount of cationic/ anionic salts, Parihar et.al, (2012).

Iron (Fe):

In the present investigation in average about 0.24 Mg/lit. within the permissible limit. **Fluoride:** Probable source of high fluoride in Indian waters seems to be that during weathering and circulation of water in the rock and solid, fluorine is leached out and dissolved in ground water. Excess intake of fluorine through drinking water causes fluorosis on human being, Rafiullah et.al. (2012). Study of fluoride within the permissible limit was about 0.4 Mg/lit.

Alkalinity:

Alkalinity of water is its capacity to neutralize a age sie normally due to the presence of bicarbonate; carbonate and hydroxide sec ° canes sodium and potassium. Surface water contains nitrate due to leaching of nitrate with the percolating water. Surface water can also be contaminated by sewage and ca wastes rich in nitrates. Alkalinity values for the investigated samples were found to be in average 115 Mg/lit. The similar result occurs, Manjare et.al. (2010) total alkalinity ranges from 121.25 mg/l to 200mg/1. the maximum value (200 mg/l) was recorded in the month of May (summer) and minimum value (121.25). Hujare (2008) also reported similar results that it was maximum in summer and minimum in winter due to high photosynthetic rate. The importance of DO was reported by many researchers because DO in aquatic ecosystem brings out various biochemical changes and it influence on metabolic activities on organisms, Efe et.al. (2005). The DO was occurs average in the present study 4 Mg/ lit. Biological Oxygen Demand: Higher values can be attributed to the increased effluents discharged into the drains. Similarly, higher contents of organic load as well as the high proliferation of microorganisms are the causative factors for maximum BOD levels, Shukla etal., (1989). Biochemical Oxygen

Conclusion:

In the present work investigation of this well water not polluted for agriculture and living being. This water can be used for drinking after Purification properly.

Abbreviations:

IS - Indian Standard

NTU-Ne phelometric Turbidity Unit

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The Occurance Of Tds And Total Hardness In Well Water Near Thermal Power Station, Parli (V), Dist- Beed (M. S.) India.

Dr. S. L. KASARE
Department Chemistry, Late Shankrrao Gutte Gramin, ACS College Dharmapuri, Dist. Beed

Introduction:

: The Well-Known Thermal Power Station (V) Dist. Beed B established in 1970 in Maharashtra state. one of the units of Thermal power Station in Parli (V) City and Second unit Is 9 km for away from Parli (V) City.

In this thermal power station Total 7 ‘units are established in different period, now a day s two “units are not used only S unit are working and producing 1130. MW. Electricity the last unit is established in 2010 which produces 250 mw electricity.

Electricity produced in this power Station is supplied to some district on Maharashtra as well as to Some districts of Karnataka.

‘The well water, Stream water, and River water in the surrounding area get contaminated due to thermal fly ash.

The living organisms are badly affected by fly ash, air and soil also get polluted due to fly ash. So, it was needed so select this topic for the study.

The thermal power station has made its own ash pound for disposal of solid waste material, which is1 km away from thermal power station.

Table-1 The average Physio-chemical parameter of well water, near the thermal power station parli(V).

Sr. No.	Parameter	Result obtained in average	Units	Desirable Limit as per IS:10500:01991
1	Physical appearance	Clear	-	-
2	Odour	Odorless	Unobjectionable	Unobjectionable
3	Temperature	22	^{0}C	-
4	Turbidity	0.5	NTU	5
5	pH	6.83	-	6.5-8.5
6	Chloride	296.5	Mg/lit	Max 500
7	Nitrite	0.01	Mg/lit	Max0.2
8	Total Hardness	440.67	Mg/lit	Max 300
9	TDS	1325.8	Mg/lit	Max 500
10	Iron (Fe)	0.24	Mg/lit	Max 0.3
11	Fluoride	0.4	Mg/lit	Max 1
12	Alkalinity	115	Mg/lit	Max 200
13	DO	4	Mg/lit	-
14	BOD	5	Mg/lit	-

Table-2

Physical appearance and odour:- The result obtained during present investigation

Sr No	Name of Month 2017-2018	Total Hardness ppm	TDS ppm	Desirable limit as per IS:10500:01991
1	August	440	1320	-
2	September	440	1320	-
3	October	441	1325	-
4	November	442	1330	-
5	December	442	1330	-
6	January	442	1320	-

Materials & Methods :-

'The study area is being visited monthly and the surface water samples are collected from wells which is fixed station near ash pond from august 2017 to Jane-2018.

In present study analysis Physoco- chemical parameter and estimated by using standard method preconized by Mr. Trivedy and Goel 1984 and Kodarkar et. — all (1998) the observed total dissolved solids and Total hardness. in well water.

Result and Discussion: -

The monthly variation in TDS and total hardness a physticо- chemical parameter are given in table 1 and 2 one total dissolved solids medicite the salinity behavior of ground water. Water containing more man 500 me/litter of TDS is not considered desirable for drinking water but in unavoidable cases of 1500 mp/ litter is allowed Shrinivasrao (2000). - TDS of all Samples more range of good plat from for the further Study to Analyzed the types and amount of cationic and anionic salts parihar et. al(2012).

In the present investigation TDS was average about -1325-83 ppm . that is above permissible limit. Toxal dissolved solid is a measure of combined content of all organic and inorganic substances containing in a liquid in' a molecules ionized and micro granular suspended form. TDS was ranged betn 504-740 mg / Ii mansoon and 526-1249 mg/litter winter season of summer 553-1275 me/litter Season Sangeetamadan et. all 2015. Total Hardness: water hardnes and mineral Content of water affects things such as chemical reduces forming on equipments or allowing soap to from up (softwater) . It also has an affect on PH, due to hard wator being a beter buffer for P and is generally associated with highr PH levels. This is why we add conditioning salls when doing water changes or use Ro or DI 'water which have to be removed. Total hardness is caused Primary by the Y uc Calcium and bicarbonate , cloride and sulphate in water hardness of around water in monsoon was 110.11 480 48 mgllitter summer 19,19-790-79 mg/liter and in winter 160.16-660.66 _ mg/litter Sangectamadanet.all 2015. In the present investigation total hardness was average 441.16 ppm. During study of positive co-relation was observed betn TDS and Hardness.

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Systematic Investment Plan (SIP): The prominent way for Retail investors for long term wealth creation.

Dr. S. S. Muley
Professor, Head Dept of Commerce, Swami Vivekanand Mahavidyalay, Mantha Dist. Jalna
Email- drssmuley@gmail.com

Abstract-
Money is a representation of the value you create. We all make money in different ways. While having a source of income, such as a job or a business, is beneficial, having multiple sources of income is much better for long-term wealth growth. Systematic Investment Plan (SIP) in mutual funds is a popular and simple technique to assure wealth building that is recommended for everyone. It is found that the systematic investment is safe and the proper way for saving as well as the generating passive wealth from your amount. This paper is elaborating the importance and need of the SIP for the common investors to build up the wealth in long term investment.
Keywords- Systematic Investment Plan, SIP, Retail Investors, Mututal Funds, Compounding, Investment.

Introduction-

The goal of wealth growth is shared by investors from all walks of life. For most people, unfortunately, investing a substantial quantity of money all at once is impracticable. A Systematic Investment Plan (SIP) is a simpler and frequently more productive alternative to lump-sum investment. SIP is a trendy way to build wealth nowadays. But still, the several individuals continue to stay unaware of how, when and where to invest every month in SIPs. In today's competitive environment, it is recommended that we all invest at least 20% of your monthly earnings in SIPs. There's no hesitation that investing in SIPs for long-term capital building can assist us in achieving your long-term life objectives, such as our children's education, retirement, future home, worldwide trip, and weddings. SIPs enable you to build long-term wealth and live comfortably by offering you also with compounding effect on your investment. To acquire the essential compounding impact for optimum wealth building, investors need to know SIPs in long-term investments. This will also lower your investment risk. There are numerous mutual fund schemes where your money could rise by over than 15% in 15 to 20 years. So, if you invest Rs. 15,000 in a particular scheme for 15 years, your wealth could rise to Rs. 1 crore; however, if you invest the same capital for 20 years, your wealth could increase to more than Rs. 2 crores.

According to a market analyst, retail investors should start making small investments, or SIPS, instead of investing their entire portfolio all at once, because the Indian stock market will likely stay volatile till the Russia-Ukraine war and geopolitical issues are handled. Since Russia's attack on Ukraine, Indian stock market index have been extremely volatile, Nifty 50 and Sensex dropping 7.3 % and 7.87% respectively since 22 Feb 2022 to 13 May 2022, in line with global markets. SIPs are growing drastically of traction amongst retail investors, according to data from the Association of Mutual Funds in India (AMFI). The assets under management of SIP accounts reached a record high of Rs 5 lakh crore in July 2021, with the average overall portfolio of SIP investors exceeding Rs 1.2 lakh. SIP AUMs surpassed the 5-lakh crore milestone in the next two months, hitting historic highs of Rs 5.26 lakh crores.

The Advantages of SIP for retail investors-

The Small and regular efforts today can pay off big in the future. Many of us grew up reading Aesop's fable about the hungry crow and the water jug. The crow constantly drops little pebbles into the jug, raising the water level. A comparable concept is Systematic Investment Plans, or SIPs. Small, regular contributions today can pay out handsomely in the future. However, how do SIPs benefit investors? They appear to be more efficient for investors than single payment investments at first glance. However, a closer inspection of the advantages of SIPs finds that systematic investing assists in the generation of long-term wealth. The Advantages of SIP's are as follows:

Convenience assured-

Is it tough for you to set aside a significant portion of your monthly earnings for your investments? Then you might begin with a little monthly amount of Rs. 500 and start increasing it as your income rises. If you anticipate an increase in your expenses, you can cut back on your spending. This adaptability keeps you in complete control of your finances at all times.

Habit for the disciplined Investing.

Consistency and discipline are the keys to long-term wealth generation. SIPs make it simple for investors to develop both of these disciplines. You also have a compelling incentive to save before you

spend when you start investing with a Systematic Investment Plan. This method makes it easier to achieve your long-term financial objectives. If you find it difficult to make this adjustment and invest consistently at first, you can always use one of the many auto-debit solutions available today. You will be less inclined to blow your investment budget this way.

The benefit of averaging rupee costs

You can also profit from rupee cost averaging with SIPs. Because you invest a certain amount on a regular basis, you can acquire fewer units when the market is rising and a huge proportion of investment units when the market is falling. This helps to lower the average investment costs in the markets over time. This advantage is not available with something like a lump sum investment. Unlike a SIP, where your contribution cost averages out over time, if you invest throughout a market high, the original cost remains the same over time.

Better returns than regular investing alternatives-

One of the most important SIP advantages is that returns are usually better than standard investment options. You can go the SIP road if you want to drive a high-end automobile or own your own home with a great rear garden.

Power of compounding-

Compounding is the process of gaining interest on interest. To put it another way, your earnings are re-invested, providing you gains on your returns. This is an advantage of systematic investment, especially if you start a SIP early on in life. That way, the miracle of compounding can benefit your assets for a longer period of time. For example, if you start investing Rs. 5000 per month for the 20 years of duration at 9% annual return then the compounding gains at the end of duration will be 33,39,434.35 with just 12,00,000.00 of investing amount.

Year	Earning	Total Deposit	Total Earnings	Balance
0	--	00	--	00
1	2,537.93	60,000.00	2,537.93	62,537.93
2	8,404.42	1,20,000.00	10,942.35	1,30,942.35
3	14,821.23	1,80,000.00	25,763.58	2,05,763.58
4	21,839.97	2,40,000.00	47,603.56	2,87,603.56
5	29,517.13	3,00,000.00	77,120.68	3,77,120.68
6	37,914.45	3,60,000.00	1,15,035.14	4,75,035.14
7	47,099.50	4,20,000.00	1,62,134.64	5,82,134.64
8	57,146.18	4,80,000.00	2,19,280.82	6,99,280.82
9	68,135.30	5,40,000.00	2,87,416.11	8,27,416.11
10	80,155.27	6,00,000.00	3,67,571.39	9,67,571.39
11	93,302.80	6,60,000.00	4,60,874.19	11,20,874.19
12	1,07,683.66	7,20,000.00	5,68,557.85	12,88,557.85
13	1,23,413.55	7,80,000.00	6,91,971.40	14,71,971.40
14	1,40,619.00	8,40,000.00	8,32,590.40	16,72,590.40
15	1,59,438.45	9,00,000.00	9,92,028.84	18,92,028.84
16	1,80,023.29	9,60,000.00	11,72,052.13	21,32,052.13

17	2,02,539.13	10,20,000.00	13,74,591.26	23,94,591.26
18	2,27,167.11	10,80,000.00	16,01,758.37	26,81,758.37
19	2,54,105.36	11,40,000.00	18,55,863.74	29,95,863.74
20	**2,83,570.61**	**12,00,000.00**	**21,39,434.35**	**33,39,434.35**

As a result, compounding aids in the exponential rather than linear growth of your corpus over time. Because of compounding, the appropriate market investments can even yield you inflation-beating returns. As a result, you will be able to achieve your aim of wealth creation.

Easy withdrawals –

One of the finest SIP advantages is that you won't have to wait for your money when you need it. A portion or the entire investment can be credited to an account and utilised with only a few simple online clicks.

'Timing' vs. 'time in the market'-

If you want to invest a large sum of money in the markets, you must carefully time your entry. When you quit your position, your timing impacts whether you would take home net winnings from your trades. Finding the perfect opportunity to place or depart the markets, on the other hand, can be difficult. The need to timing the markets is eliminated when you invest methodically in equity instruments. Regardless of whether the market is trending upward or lower, you can continue investing through SIPs without being harmed by market volatility. SIPs also make it easier to concentrate on your financial goals and build long-term wealth by minimizing the need to timing the markets.

Myths About SIPs Which Must Be Countered-

As more people become aware of the benefits of SIPs, a number of misconceptions about them have emerged. Some people are unsure whether SIPs are secure, tax-free, or yield interest. It is critical for investors to dispel the myths surrounding SIPs and choose their investing path in order to become more financially informed. The following are some popular misconceptions concerning mutual fund SIPs.

Only Small Investors Can Participate in SIPs.

Despite the fact that SIPs allow for smaller investments, this should never be assumed that SIPs require huge sums of money. Investors can invest as much as they like using the SIP way of investing. Many HNIs and rich investors do invest in the stock market through a systematic investment plan (SIP). SIPs allow a person to make regular investments in the stock market. This strategy is available to anyone who wants to save enough for their long-term financial targets. As a result, believing that SIPs are only for small investors is incorrect.

SIP is only available for equity funds.

A prevalent misconception among investors is that the SIP way of investing may only be used to invest in equities funds. This is completely false. Investors can pick from a variety of options when investing in mutual funds via SIP, including debt funds, hybrid funds, funds of funds, index funds, and theme funds, among others.

A product is SIP.

SIP investments are a type of investment that allows investors to invest in small amounts at regular periods. Investors can select a mutual fund scheme from a portfolio of options, and the investment amount is deducted and placed in the plan. Individuals can select from a variety of schemes based on their financial goals and risk tolerance.

SIP cannot be changed once it has been chosen.

Many investors believe that once a SIP is started, it cannot be changed - this is not the case. SIPs are one of the finest ways to invest in the capital markets since they provide for flexibility in the investment mode. It's vital to remember that once an investor has completed their SIPs, the amount, time, and even mutual fund scheme can all be changed. Investors have the flexibility to adjust the investment amount and term to suit their needs. If an investor's income rises or falls, or if they want to save or invest more, they can adjust the SIP amount.

SIPs in low-NAV funds will yield better results.

Many investors expect that mutual funds with a lower net asset value (NAV) will provide higher returns since they are cheaper. While the NAV is significant when investing, it's doesn't represent the return that a mutual fund scheme can also provide. A fund's NAV is the price at which an investor can buy or sell mutual fund units. A fund's NAV fluctuates on a regular basis. The returns of mutual funds are not determined by their cost (NAV).

Guaranteed Returns Apply to SIPs

Investors who use SIPs can invest in mutual funds on a regular basis. While investing in mutual funds through SIPs is safer than investing in the stock market, mutual funds are vulnerable to market risks depending on market volatility. It is difficult for an investor to achieve assured profits in the near term, but investing in mutual funds for the long term can assist provide wealth appreciation. As a result, investors should be aware that participating in the stock market entails some risk, and that they should be prepared before doing so. When you invest in mutual funds through SIPs, you have the benefit of rupee cost averaging (RCA).

Don't Invest Through SIP in a Bullish Market

When investing in mutual funds, investors must understand the level of discipline, patience, and research necessary. The majority of SIPs produce results over time. Real-time market timing is impossible to achieve. Buying on the lows and selling on the highs is theoretically viable, but it is not practicable in reality. SIP investments typically offer larger returns over a longer period of time. When using the lump sum approach, it is critical to recognize that bullish and bearish phases must be taken into account.

Conclusion-

Some people wait until they have a huge sum of money to begin investing, but with SIPs, you don't need much to get started. You can start your SIP journey with as little as Rs 500 each month. As your saving skills improve, you may be able to increase the amount you invest per month. This method can assist you in accumulating wealth more quickly. So, the suggestion for new retail investors is that to start SIP's as early as possible for the unbelievable gains to secure future of your loved ones and to live your dream life after some years.

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Ramachandran.R.A[1] Prof. (Dr.) Bindu R L[2]
[1]Research Scholar Department Of Education University Of Kerala
[2]Department Of Education University Of Kerala
Chandruayyappan1992@Gmail.Com
Binduindraneelam@Gmail.Com

Abstract

Over the last two decades, scientific literacy has become a famous educational catchphrase and a significant aim for science education in many countries. However, a scientifically literate society is the ultimate goal of science education. This paper investigates the scientific literacy of higher secondary school students. Survey method was used for the present study. The participants of the study included 300 higher secondary school students from the Thiruvananthapuram district. Multi-stage cluster sampling technique for the study. The data was collected using a scientific literacy scale. Descriptive statistics and t-tests were used for data analysis. The findings showed that higher secondary school students have an average level of scientific literacy. Male higher secondary school students' scientific literacy is more than female higher secondary school students. The investigator also found that science higher secondary school students have more scientific literacy than commerce higher secondary school students.

Keywords: Scientific Literacy, Higher secondary school students, Gender, Subjects of the study.

Introduction

In light of society's pressing issues, a paradigm shift in education is required to provide students with 21st-century abilities that will enable them to face every facet of global life (Soh et al., 2010). The availability of high-quality science education will influence a country's progress. Every country's learning characteristics influence science education (Christie et al., 2012). Students can be active in the effect of science in everyday life and the role of students in society through science education (Mason, 2017). Scientific literacy is described as understanding how science works and knowing basic facts and concepts about science. It is necessary to have a fundamental understanding of scientific facts, concepts, and vocabulary. Those with this expertise are better equipped to follow science news items and engage in public debates on scientific topics. Understanding the scientific method could be even more vital (Maienschein 1999). Over the last two decades, "scientific literacy" has become a famous educational slogan and an important goal in science education (Millar, 2006). Even for professionals who work with science daily, little information is available on scientific literacy levels in Turkey and other nations. It is yet unknown if those who work with science, such as scientists and science teachers, have acceptable levels of scientific literacy (Ozdem 2009).

Scientific literacy societies are made up of students who comprehend scientific facts and the relationship between science, technology, and society and can apply their knowledge to real-world situations (Toharudin et al., 2011). Cultural science literacy, civic science literacy, and practical science literacy are examples of different types of science literacy (Shen, 1975). Cultural science literacy is the understanding of science that a person of average intelligence and education has in a specific culture.

Practical science literacy refers to the scientific knowledge required to address practical challenges such as determining the most efficient method of heating one's home. Scientific literacy is the foundation upon which basic skills and attitudes are learned and developed by an individual. Literacy comprises knowledge, skills, and attitudes (Martin & Grudziecki, 2006). Literacy uses a particular context, such as a discipline, a knowledge domain, or a professional arena. This is when literacy is put into practice and employed to tackle a specific problem. The concept of 'attitude' lies under the umbrella of 'Scientific Literacy,' a primary goal of science education. The assertion that 'the scientifically literate person accurately applies suitable science concepts, principles, laws, and theories in dealing with his (sic) cosmos' highlights the cognitive knowledge side of scientific literacy (Rubba & Anderson, 1978). However, many scientific educators stress the importance of non-cognitive aspects like values and attitudes in science literacy. According to the American Association for the Advancement of Science (AAAS, 1989), a requirement for a curriculum to be classified as teaching scientific literacy is "spelling out the knowledge, abilities, and attitudes that every student should acquire as a result; of their whole educational experience." At AAAS, attitudes are treated equally to knowledge and skills.

Scientific literacy is a constantly developing set of scientific attitudes, abilities, and knowledge. To become lifelong learners, students must acquire inquiry, problem-solving, and decision-making skills and a sense of wonder about the world around them. Through learning experiences based on standards and expectations, students will have numerous opportunities to investigate, analyze, evaluate, synthesize, and comprehend the interrelationships among science, technology, society, and the environment that will impact their personal lives, careers, and future.

Rationale Of The Study

Education is crucial for everyone to live a successful life, but it is especially crucial for students in higher secondary school, as their educational development determines their future studies. As a result, the higher secondary school level is the most critical stage in a student's academic career. It is regarded as a crucial step in preparing for college and higher education and establishing a successful profession. Every student should be educated on developing an interest in science education. The majority of pupils in higher secondary school are adolescents. The adolescent stage is a crucial time in a student's life when they must decide on their educational interests. Personal difficulties significantly impact students, particularly those in higher secondary education. Scientific literacy is essential because it helps people make better decisions, grasp the risk-reward ratio, and promotes and achieves scientific literacy. Scientific literacy is important because it helps in making informed decisions, assists in a better understanding of the risk-reward ratio, as well as helping with promoting and achieving scientific literacy. The issue of science literacy has become increasingly important in education. Schools now favor student learning through inquiry-based learning rather than through fact memorization. This means that understanding the process of science and the application of scientific concepts is the central goal.At primary school levels, students are encouraged to think like scientists as they satisfy their curiosity about the natural world, and they are guided towards asking the right kinds of questions rather than simply finding the right answers. At secondary and higher school levels, training scientific literacy increasingly incorporates more subject-specific factual knowledge

and processes. These approaches help to ensure that students enter college with applicable skills, in addition to knowledge, whether or not they choose to pursue careers in science. The ultimate objective is to produce scientifically-responsible citizens, as scientists or otherwise as normal members of society.The investigator realized the immense need to assess the level of scientific literacy of the higher secondary school students. Hence the study is entitled **"**Scientific Literacy Of Higher Secondary School Students."

Objectives Of The Study

1. To find out the level of scientific literacy of higher secondary school students.
2. To find out whether there is any significant difference in the scientific literacy of higher secondary school students classified based on gender.
3. To find out whether there is any significant difference in the scientific literacy of higher secondary school students classified on the basis of subject of study.

Hypotheses Formulated For The Study

1. The level of scientific literacy of higher secondary school students is average.
2. There will be significant difference in scientific literacy of higher secondary school students based on gender.
3. There will be significant difference in the scientific literacy of higher secondary school students based on subject of study.

Methodology

Method Adopted For The Study

The investigator adopted a survey method for the study

Population

The population of the present study consists of all the higher secondary school students in Kerala

Sample Used For The Study

In the present study, 300 higher secondary school science students studying in XI standard were used as the sample.

Sampling Technique Used For The Study: The sample has been drawn using a multi-stage cluster sampling technique for the present study.

Tools Used For The Study: The investigator prepared scientific literacy scale for collecting data

Statistical Techniques Used For The Study

1. Descriptive Statistics
2. t-test

Results And Discussion

Analysis And Interpretation Of Data

Analysis Of The Level Of Scientific Literacy Of Higher Secondary School Students

Table 1: Data and results of the level of scientific literacy of higher secondary school students

Groups	Score range	No. of students	Percentage of students
High	Above 93	46	15
Average	Between 93 and 77	212	71
Low	Below 77	42	14

In table 1, the selected sample was classified as high, average, and low based on the scores. From table 1, it is clear that 15 % of higher secondary school students have a high scientific literacy, 71 % of higher secondary school students have an average scientific literacy, and 14% of higher secondary school students have low scientific literacy. From the analysis, the investigator found that higher secondary school students have an average level of scientific literacy.

Analysis Of The Significant Difference In Scientific Literacy Of Higher Secondary School Students Based On Gender

Table 2: Data and results of the scientific literacy of higher secondary school students based on gender

Gender	Sample size	Mean	S. D	t-test	Level of significance
Male	158	86.15	8.11	3.01	0.01 level
Female	142	83.59	6.73		

Table 2 reveals that the t-value obtained is 3.01 and is significant at the 0.01 level. It indicates a significant difference in scientific literacy of higher secondary school students based on gender. The mean score of male students (M=86.15) and female students (M= 83.59) significantly differ. Hence, male higher secondary school students have scientific literacy more than female higher secondary school students.

Analysis Of The Significant Difference In Scientific Literacy Of Higher Secondary School Students Based On Subjects Of Study

Table 3: Data and results of the scientific literacy of higher secondary school students based on subjects of study

Subject	Sample size	Mean	S. D	t-test	Level of significance
Science	145	86.14	8.10	2.69	0.01 level
Commerce	155	83.80	6.91		

Table 3 shows that the t- value obtained is 2.69 and is significant at 0.01 levels. It indicates a significant difference in scientific literacy of higher secondary school students based on subjects of the study. The mean score of science students (M=86.14) and commerce students (M= 83.80) significantly differ. Hence it can be concluded that science students have more scientific literacy than commerce higher secondary school students.

Findings Of The Study

The results of the statistical analysis revealed that

1. Higher secondary school students have an average level of scientific literacy.
2. Male higher secondary school students' scientific literacy is more than female higher secondary school students.

3. Science higher secondary school students have more scientific literacy than commerce higher secondary school students.

Conclusion

Scientific literacy is essential because it helps people make better decisions, grasp the risk-reward ratio, and promotes and achieves scientific literacy. The investigator adopted a survey method for the study. The overall outcome of the study shows that higher secondary school students have an average level of scientific literacy. Male students have scientific literacy more than female students, and science higher secondary school students have more scientific literacy than commerce higher secondary school students.

Educational Implications

1. Scientific literacy brings in skills for achieving the knowledge rather than teaching the existing knowledge to the students.
2. Science literacy is critical because it provides a context for addressing societal problems. A science-literate person can effectively cope with many problems and make intelligent decisions that will affect the quality of their life and those of their children.
3. Scientific literacy is essential because it helps in making informed decisions, assists in a better understanding of the risk-reward ratio, and helps promote and achieve scientific literacy.

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Digital Banking As Green Banking Initiative: The Perception Of Customers Towards Digital Banking - A Study Made In Thekkatte Of Karnataka

Dr. Sanjeevani Munde[1] ,Nagaraja U[2]
[1]Asst. Professor & Research Guide, Dept. of Commerce Late Shankarrao Gutte Gramin ACS College, Dharmapuri. Tal-Parali (V). Dist. Beed, Maharastra
[2]Asst. Professor and Research Scholar Dept. of Commerce SKVMS Govt. First Grade College, Kundapura, Post: Koteshwara, Udupi, Karnataka

Abstract

The administration of any country strives hard at providing needed facilities to everyone who is deprived of the same. After 1992, when India opened itself globally in the form of driving liberalization, privatization, and globalization, it also intensified its approach to becoming a welfare state. This has led to large-scale new entrants and intensified the scale of business leading to huge competition among marketers. This is obvious that when competition increases along with the positive results negative results ought to take place. The influence of such effects is also felt on the ecology. The affected started feeling that every business needs to think in terms of discharging their responsibilities towards the society constituting the part of ecological balance. The concept of discharging Corporate Social Responsibility has come into lime light on a greater scale during this period. Every business functions not only for today but also for the generation to come. A long-run survival is possible only when due consideration is given to the environment in which the organization functions. Therefore proper measures will have to be taken to protect and safeguard the environment. Successful businesses that are functioning all over the globe have considered the protection of the environment as a pivotal objective. An economy is said to be a successful economy only when all of its sectors join their hands together along to attain sustainable development. To achieve sustainable development and to survive in the future, each business has to design and resign various green products to protect the environment. When all business concerns are thinking in this direction, the financial sector is not an exception in this regard. It is also strategizing its approach towards the same. It has developed and implemented various green business initiatives. Various participants of this financial sector like banks, stock brokers, NBFCs, insurance businesses, etc., have developed and adopted different green business practices. This study aims at the green initiatives of commercial banks and the attitudes of the customers towards it. One should always keep in their mind that the green banking business is the outcome of sustainable development as an integral part of the bank's corporate social responsibility. This paper comes out with the various green banking initiatives and the feelings of customers towards the green banking business in India. Various graphs have been used to showcase the responses. This paper has also tried to come out with conclusive measures to protect the environment.

Key words: Sustainable development, CSR, green products, Green initiative, carbon foot print

Introduction

The key to success for any business today is to concentrate on the environment to protect it for 'tomorrow'. This view has become a generalized view and is accepted by almost all business organizations. One of the prime financial market participants, Banks do also consider the protection of the environment as a pivotal task. Banks have to see that they have not escaped from their responsibility of discharging their Corporate Social Responsibility (CSR). Besides this, adhering to environmental laws has also become the need of the day. More and more awareness has been created and the people have become conscious of their environment. Days are gone when one used to exploit the mother earth to satisfy their greed. Maximizing the owners' wealth cannot be the sole motive of any business anymore. Every business including banks has to see that profit should act as an incentive to survive and continue the business. It should be the only motive to increase the size of the profit. Instead, it should also look after the environment and protect it so that a healthy eco system prevails consisting of living beings. But the study observes that not much initiative has been taken by the banks in this regard besides they playing major roles in the Indian economy. United Nations Environmental Programme Finance Initiatives (UNEP FI) was established in the year 1990. It was established to promote sustainable banking at the international level. Many of the developed and

dominating economies have also been penalized for not adhering to their Corporate Social Responsibilities. Some of the most dominating countries have also been penalized heavily for violating their social responsibilities. We know that the banking operation requires a huge amount of paperwork. But a sustainable banking business requires it to minimize the use of papers in their routine transactions. It also requires the banking to fund more and more green projects.

Literature Review

For making the study more effective and to have secondary data various sources have been referred to. Some of them have given the following opinions regarding digital banking.

Vipin Jain and others (2020) in their study have opined that digital banking has brought an amazing customer experience and they also said that it has improved the delivery of banking services.

Shahabas Ahmed C.B,(2020) said that the rapid growth in the banking industry has given a large number of opportunities to transact without carrying any cash.

Kiran Jindal and others in their study concluded that the age of the customers becomes an important factor when they use digital banking. They said that people in the age group of 18-29 prefer computer-based banking services due to the reason of they are convenient and time savers. Adding to their findings they also felt that banks should go ahead with marketing their products so that the customers and induced to buy their products.

Aithal (2021) and others said that green banking has gained more demand in the banking sector. The policy makers of the banks have realized the importance of green banking in an underdeveloped economy. They also said that the banks will have to utilize those technologies that reduce their carbon footprint.

Jitha Thomas (2018) and others in their research paper said that green banking has been adopted by the banks to fulfill their responsibility to protect the environment. They opined that through green banking one can make the earth a better place to live.

M Narmadha (2016) the concept of green banking will mutually benefit the banks, industry, and economy in general. The green banking business will certainly improve the quality of assets of banks in the future.

Sudhalakshmi and Chinnadorai(2014) while reflecting on the present position of Indian banks have said that every bank operating in India should have to adopt a green banking business. Sustainable development is ensured by adopting green initiatives.

Yadav and Pathak (2013) have felt that the banks operating in India have realized the importance of protecting the environment and hence the adoption of green banking in their day-to-day operation. The study has observed that the public sector banks have adopted more green initiatives than the private banks in India.

Vinay Kumar Nagu (2012) has concluded that the implementation of E-CRM has drastically decreased the cost of banking operations. They also said that it has improved customer loyalty.

Objectives Of Study

The study has the following objectives:

1. To understand the Digital Banking practices of different commercial banks.
2. To understand the perceptions of customers about green banking products
3. To understand specifically digital banking

Hypothesis

The study has made the following hypothesis:

H1: The customers of the bank are not in favor of green initiatives

H2: The customers are in favor of the green initiatives

Methodology

For the study, both primary and secondary data are used. A structured questionnaire has been prepared so that the primary data are collected. The questionnaire so prepared is circulated among the customers of banks. To collect the questionnaire, two of the few banks located in Thekkatte have been visited and the draft questionnaire was distributed. To supplement the research study various written literature were also considered which are available online and offline.

Area Selected

The coastal place of Udupi district of Karnataka state named Tekkatte is selected for this research study. It is a place in which people transact through banks. This village has a population of 6000 in

size. In this village, two nationalized banks are functioning namely the State bank of India and Canara Bank. Of course, there is one cooperative bank that functions in this area as well.

Sample Size

Out of the 6000 population, a random selection of 50 is made. This selection is purely made following the convenience sampling method.

Limitations Of The Study

While doing the research study the following limitations have been noticed.

1. As the sample size is 50 a conclusive result could not be obtained.
2. The area has only two public sector banks and one cooperative bank.
3. As the education level is not so high the awareness about digital banking and green banking is not so great.
4. Time was another limiting factor for the exhaustive research.

Environmental Protection And Banks:

Every bank plays an important role in the development of any country. A sound banking structure is essential for the successful growth of any nation. Banks contribute directly as well as indirectly to economic growth. At the same time, the activities of banks have some impacts on the environment. An indirect effect on the environment is also felt like the banks finance different projects which might negatively affect the environment. Hence banks have to be cautious before they fund any projects. The way by which a bank regularly operates will have a direct influence on the environment. A direct influence is observed in terms of the use of power for the lights, computers, ATMs, etc. the waste management practices of banks will also influence the eco system.

Products Of Green Banking Via Digital Banking

Following are the different green banking initiatives:

1. ü Green loans
2. ü Green Credit cards
3. ü Green banking and online banking
4. ü Green rewards checking accounts
5. ü Green deposits
6. ü Green saving accounts
7. ü Green mortgages

Green Banking And Canara Bank

Canara Bank has started its green initiation in the year 2013 through the following banking services:

1. Mobile banking
2. Internet banking and others

Internet banking, mechanized pass book printing, ATM, online trading, etc have been started as some of the e-lounges. The bank has also stopped lending to those projects aims at producing Ozone depletion substances. The bank has made it mandatory to obtain a Clearance Certificate in the form of No Objection from the Pollution Control Board to get any funding from it.

Outcome Of The Study

The following results have been noticed from the study:

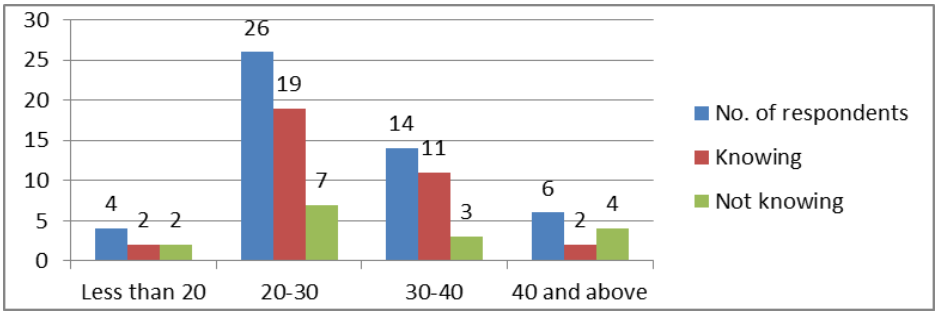
Knowledge of internet banking :

Knowledge of online banking	No of respondents saying yes	Percentage
	36	14

Out of 50 respondents, 72% of the respondents have said that they know about online banking. On the other hand, the remaining 28% of the respondents said that they lack knowledge about online banking.

Age and knowledge of green banking:

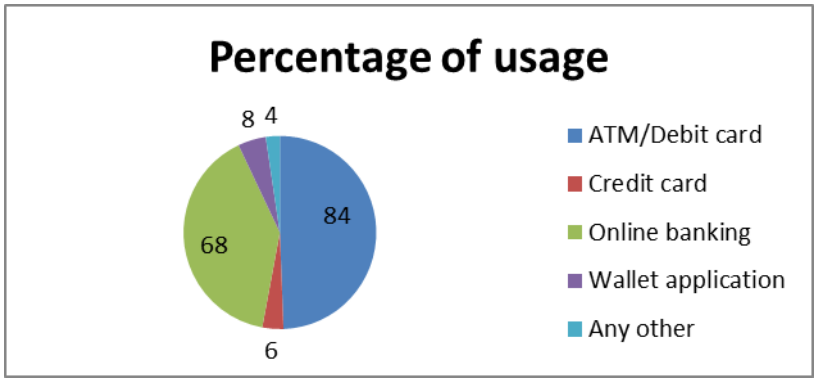
Age group	No. of respondents	Knowing	Not knowing
Less than 20	4	2	2
20-30	26	19	7
30-40	14	11	3
40 and above	6	2	4



The above table and the chart reveal that the age of the respondents will influence the use of green banking products. The study observed that the age group of 20-40 are more aware of digital banking and green banking as out of 40 respondents of this age group 30 are aware of the same which is 75% of the size of the group.

Use of digital banking products:

Type of facilities	No. of respondents using	Percentage
ATM/Debit card	42	84
Credit card	03	06
Online banking	34	68
Wallet application	04	08
Any other	02	04



It is observed that 84 percent of the respondents use ATM/Debit cards, especially after the Covid-19 pandemic situation. When asked the respondents, they said that the interest in the cash-less transaction is triggered due to the Covid-19 situation. But at the time the respondents of the area selected under study expressed lethargic attitudes towards the use of credit cards.

Frequency of internet banking as green banking initiative:

Options	No. of respondents	Percentage
Once a day	6	12
More than 6 times a week	34	68
4-6 times a week	6	12
2-3 times in a week	3	06
Once a week	1	02

It has been observed that 68 percent of the respondents use internet banking more than 6 times a week. Only 2 percent of the respondents use internet banking only once a week. It shows that awareness has already been created in the mind of customers regarding the use of e-banking methodologies. The bank has become a convenient one as one can enjoy banking facilities without any time restrictions. Carrying hard cash is also avoided these days.

Conclusion

It is a morality that the banks have become socially responsible. Going digital doesn't mean that it should be done overnight. It means that better late than never, before the mother earth does something, we have to see that we have made some good contribution to the nature so that the

ecological balance is sustained. The banks have to create more and more awareness relating to the availability of green products and the need for use of the same by customers. Every bank has to adopt a green audit every year.

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The relationship between Knowledge creation and innovation: Aliterature review and proposed conceptual model

Ms. Suma[1] Ms. Divya A[2]
Assistant Professors, Department of Management, East West College of Management, Banaglore

Abstract

This study is an effort toward understanding the role of the organisation and its employees in the knowledge creation and innovation process for organisational success. Emerging technologies and services with the capacity to make minor unprompted changes give rise to an entirely new productmaking the market very competitive. To stay competitive, the organisational intent should be to constantly innovate their products or services. For this innovation to happen, there must be knowledge creation from within the organisation and this knowledge must be efficiently externalised. New ideas and concepts that are created in the knowledge creation process are used for innovation.To facilitate knowledge creation the focus should be on two aspects, one being the transparency about the organisations performance where employees know about their organisation and might have suggestion or ideas if the organisation is not doing so well. And the other aspect is about the culture of the organisation where the employees are free to socialise thus share their tacit knowledge. To bridge the gap between knowledge creation and innovation a knowledge management team is needed. The role of knowledge management team is to receive the concept or ideas from the employees which will go through screening/filtering/qualifying which is then assessed against the organisational intent. This information redundancy can help make valuable valid decisions. It alsomaintains close relationship with research and innovation team. Knowledge management team mustdocument every idea or concepts that it receives which can be access later by the innovation team and the employees. The paper develops a model where problem identification becomes the source of knowledge creation. The problem is made aware and the employees discuss and individually suggest their ideasor opinion to knowledge management team which is then processed and thus making innovation easier.

Intoduction

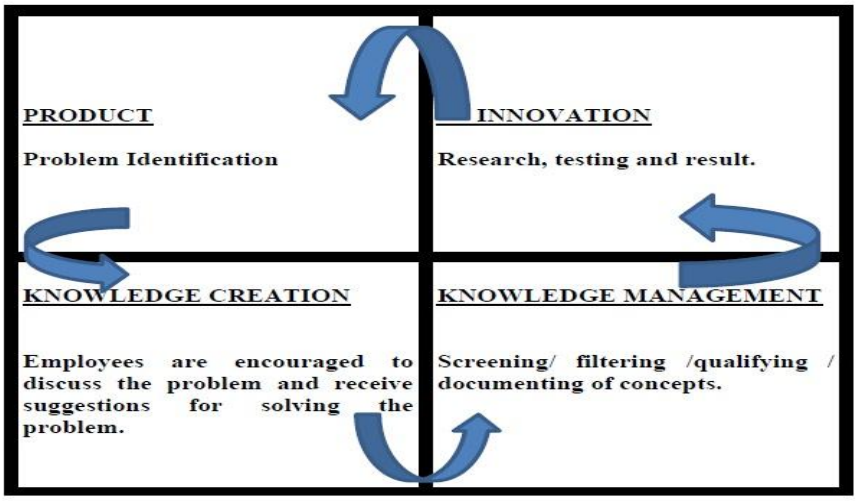
In the past few decades, there has been a major transformation in the competitive market due toglobalisation, where business organisations consistently seek new strategies to gain a competitive advantage in the market. These strategies involve continuous innovation of the product and services. This constant innovation is nurtured by continuous knowledge creation. Knowledge creation is the essence for innovation and consistent growth of an organisation. Knowledge creation and innovation both go hand in hand. Ideas are created when there is an effort toward solving an existing problem or dissatisfaction withthe product. In this paper, we focus on problem identification as the root of knowledge creation. Knowledge in the form of ideas or concepts is not created by a computer, instead we humans are the source of it. Every person thinks differently and thus has a different perspective. This enables to have multiple approaches towards to an existing problem or a situation. It's always better to have a lot of ideas than to be short of them. In this study, we emphasise the importance of knowledge management its role. Knowledge management is essential to bridge the gap between knowledge creation and innovation. Here, the Created knowledge is processed and well documented for future access. This created knowledge is accessed for research and innovation. Knowledge is the source of innovation, thus knowledge management becomes very essential. The human resource department plays a vital role in the functioning of such a system where it coordinates the activities between Employees, the knowledge management team and the research and innovation team thus easing the process.

Literature Review

"Sheetal Mahender et.al. (2021), reveals in their study that a strong positive correlation between the performance of the organization and employees with strong knowledge management." "(Al Rashdi et al., 2019), in their studies consider the reviews of some literature on knowledgemanagement which specifies about knowledge management and organizational performance are the key indicators that are preferred and dominated by conceptual studies. And also found that scarcity of mediators or moderators to understand the effect of KM practices on organizational performance." "(Gope et al., 2018) in this study

revealed that the resources based view of the organization where ensures a key role in the business sustainability as they are unique for each organization and contribute to creating specific human capital skills as well as valuable, rare, inevitable and non-substitutable knowledge, which can exploit into the organizational strategy(Barney et al.,2001)." "Abu Bakar et al. (2016) study examined the relationship between knowledge managementpractices and growth performance in the construction industry. Growth performancemeasurement is undertaken through company turnover and employment growth." The results show that knowledge creation, storage, transfer, and application have a significant relationship with growth performance. Of the four processes knowledge transfer has the strongest impact on growth performance. "In a study on the identification, of integration between knowledge strategy and knowledge management processes leads to organizational creativity, Shahzad et al. (2016) discovered that the knowledge creation process impacts organizational performance which is defined in a modelthat includes successfulness, market share, growth, profitability, and innovativeness." "Tan & Wong (2015) examined the effect of knowledge management on manufacturing performance which was defined as production and operational performance measured as quality, time, cost, flexibility and customer satisfaction. The result showed that knowledge management processes and factors have significant and direct effects on manufacturing performance." "A study of innovation performance improvements through proactive management of knowledgeassets was performed by Inkinen et al. (2015)." The authors provided empirical evidence of howvarious KM practices influence innovation performance. Strategic knowledge management, knowledge-based compensation, and technology were recognized as influential factors on innovation performance, while the impact of some other knowledge management practices was not confirmed. "Akhavan at al. (2014) explored the relationship between ethics, knowledge creation, and organizational performance. Organizational performance is determined in a study in three dimensions: output, adaptability, and human resources. While ethics was positively correlated with both knowledge creation and organizational performance, there was no significant relationship between knowledge creation processes and organizational performance." Another result of the research is that there is a positive correlation between ethics and the dimension of human resources which indicates that human resources management as one of the enablers of knowledge management has a positive impact on organizational performance.

"A study of the relationship between knowledge processes organizational trust and innovativeness was conducted on a sample of Polish companies by Sankowska (2013)." The study revealed that organizational trust and innovativeness are correlated through knowledge management processes as mediators. Trust engages more effective knowledge managing processes that impact the process of innovation in firms. "Andreeva and Kianto (2012) researched the relationship between knowledge management activities and organizational outcomes in the form of firm competitiveness and economic performance. The study revealed that activities inside knowledge management areas such as IT technologies and human resource management have a positive effect on competitive advantage.On the other hand, IT technologies improve financial performance only when supported by human resource management which on its own has a positive impact on financial performance." Problem identification and Knowledge Management in Knowledge creation and Innovation. The proposed model seeks to make the knowledge creation process efficient through properproblem identification and also sustainable for innovation with the help of knowledge management.



Problem identification for knowledge creation

To make a product better there must be an intent to improve. There is room for improvement when a product lacks in some aspects or has problems. This problem identification becomes important. The human resource team is responsible for making the problem aware of the employees.

Organisation's Culture and knowledge creation

Organisation's culture should be very liberal towards socialising aspects in the organisation, where employees are free to discuss and express their opinion about the organisation. This is well complemented when there is transparency in current performance and functioning of the organisation. This freedom express ideas and discuss facilitates knowledge creation. It is essential for knowledge creation to be multilateral. Where every employee have the chance to express their ideas or concepts. Which arrives at multiple views at the problem. Thus facilitating decision making process. To reap the benefits of the knowledge creation, we require a well-plannedKnowledge management system.

Knowledge Management: The Bridge between knowledge creation and Innovation

The role Knowledge management team is to accept/ justify/qualify the concepts or suggested idea and document it that they receive form the employees. Hence, it will facilitate ease of access. Human resource team plays a vital role in coordinating the activities between the employees, knowledge management team and the research and innovation team. The results obtained from research is used for innovation of the product. Again the problem in theproduct is then used for knowledge creation and the cycle repeats thus making ways for constant innovation.

Finding

1. Study revealed that activities inside of knowledge management areas and human resourmanagement have positive effect on competitive advantage. If technologies improves financial performance only when supported by human resource management, both are very much interlinked.
2. Study reveales that Knowledge management processes is a mediator betweenorganizational trust and innovativeness which are correlated through.
3. Study reveals that organizational performance is determined in three dimensions: output, adaptability and human resources.
4. Influential factor on innovation performance were recognized, such as Strategic knowledge management, knowledge-based compensation and technology.
5. Study reveals that knowledge creation, storage, transfer and application have a significant relationship with growth performance.
6. The proposed model provides importance of knowledge management for innovation by help of knowledge creation.

Conclusion

By focusing on problem identification in the product and asking the right questions, knowledge creation is made efficient by answering for the right question. Let employees involve in the processmakes the feel like it is their company thus improving the moral, thus helping work efficiency. Introduction of knowledge management team bridges the gap between knowledge creation and innovation. Knowledge management team function the way, by which making the processsustainable.

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A Study on Availability of Information and Communication Technology and Assistive Technology in Schools for Students with Visual Impairment in Vidarbha Region

Sheetal Babanrao Vidhate
Research scholar, Post Graduate Teaching Department of Education Sant Gadge Baba Amravati University, Amravati
Email- Sheetalw20@gmail.com

Abstract:

This study was carried out to investigate the availability of ICT and Assistive Technology in Schools for Students with Visual Impairment in Vidarbha Region. 17 headmasters working in schools for students with visual impairment were selected by Purposive Sampling Method from Vidarbha Region of Maharashtra. The study was conducted with the help of a structured questionnaire with ten items. The testing of hypotheses was made through number and its percentage.

The results of the study revealed that, most of the special schools not providing adequate assistive technology for students with visual impairment and the schools did not have enough accessibility of assistive technology for students. This study will help in creating consciousness among students with visual impairment about the importance of assistive technology in learning process. The study will enable the school authorities to organize assistive technology in their schools.

Keyword: Visual Impairment, Information and Communication Technology, Assistive Technology,

Introduction:

Education can be defined as a change, a modification or an adjustment on the part of an individual as a result of experience. Inclusive Education is one of the integrated education viable approaches to make this dream come true. In other words, education has survival value by educating individuals in the social & cultural heritage of a society that society continues to function through those individuals. In this scientific age the man is trying to achieve higher performance though critical thinking, scientific training and even through drugs and doping. These can be achieved by providing required ICT facility and assistive technology in schools for the students with visual impairment.

Rational of the Study:

ICT facility and assistive technology in schools for the students with visual impairment act like a transcription which involves the act of adapting or converting text, sound, graphics and electronic files into accessible format for the visually impaired. Transcription service is focused on delivering inclusive dissemination of information through high quality alternative formats.

The most common alternative formats include: Braille, Audio cassette and CDs., VCDs., Large print, electronic files. These ensure that the recipients access preferred format with the same content and quality as the original document.

Information Technology (IT) is a broad subject which deals with the use of electronic computers and relevant software to convert, store, protect, process, transmit and retrieve information. Over the past two decades, its prevalence has dramatically increased such that it is now a part of nearly every aspect of daily life. Information technology as a social system is recognised worldwide as a tool that accelerates economic and social integration. It is used as a medium for collaborative learning and for overcoming barriers to learning and performance. Computers with synthetic speech (Duxbury word processor) can help in pronouncing texts for a blind person. The computer can tell the blind user other descriptive information that is displayed on the screen. Computer Braille printer can print text for the blind in Braille and vice versa. Some

Assistive technology enables people to live healthy, productive, independent, and dignified lives, and to participate in education, the labour market and civic life. Assistive technology reduces the need for formal health and support services, long-term care and the work of caregivers. Without assistive technology, people are often excluded, isolated, and locked into poverty, thereby growing the effect of disease and disability on a person, their family, and society.

Assistive technology is technology that rises and improves the functional competences of students with disabilities. Assistive technology cannot remove the disability but it can reduce the impact of the disability. Teachers are using assistive technology enabling students with disabilities to learn, communicate and participate with their peers in classroom teaching.

Statement of the research problem:

"A Study on Availability of Information and Communication Technology and Assistive Technology in Schools for Students with Visual Impairment in Vidarbha Region"

Objectives of the study:

1. The research study was conducted with following two specific objectives.
2. To find out the availability of ICT facility in schools for the students with visual impairment.
3. To find out the availability of assistive technology in schools for the students with visual impairment.

Significance of the Research Study:

The significance of the study is argued on the ground that the results of the study will surface the availability of ICT and assistive technology in schools for the students with visual impairment. Further it will help the concerned officials to pay attention towards the schools where the facilities are not present.

Hypothesis of the study:

It is hypothesized that there will be good facility of assistive technology and ICT facility in schools for the students with visual impairment.

Review of related literature:

For the present study, the researcher reviewed 10 citations and it is very clear that two studies were directly related to the present study. No study was found on academic achievement of the students with visual impairment at primary level.

Selection of sample:

17 headmasters working in schools for students with visual impairment were selected by Purposive Sampling Method from Vidarbha Region of Maharashtra.

Tools for the collection of data:

Check-lists were personally distributed to 17 headmasters for the collection of data. There were five items in the assistive technology criterion and five items in the ICT facility.

Statistical Analysis:

Statistical Analysis of the data was done by using number and its percentage method. The results are also shown graphically. The details of the statistical analysis of the data are given in the following tables.

Table-1
Showing the availability of ICT facility in schools for the students with visual impairment.

	Availability of ICT Facilities for students	Percentage	Availability of Computers for the students	Percentage	Availability of Internet facilities to all the students	Percentage	Availability of e-Learning Facility for [illegible]	Percentage	Availability of ICT Software in school	Percentage
Yes	13	76.47	8	47.06	3	17.65	10	58.82	15	88.24
No	4	23.53	9	52.94	14	82.35	7	41.18	2	11.76

From the above table it is observed that 76.47 % (N=13) have the facility of ICT Facilities for students, while 23.53 % (N=4) lack this. For the next criterion of computer for students, 47.06 % (N=8) possess it while 52.94 % (N=9) do not. It is very bad that in this era of Internet only 17.65 % (N=3) provide this facility to their students and rest 82.35 % (N=14) do not. The facility of e-Learning is being used in 58.82 % (N=10) schools while 41.18 % (N=7) are deprived of this very important aspect of teaching and learning process. As far as the legal use of software is concerned, it is good to know that 88.24 % (N=15) have their legal copy of the softwares and rest of 11.76 % (N=2) do not.

The data pertaining to the availability of ICT facility in schools for the students with visual impairment is shown graphically in Figure No. -1

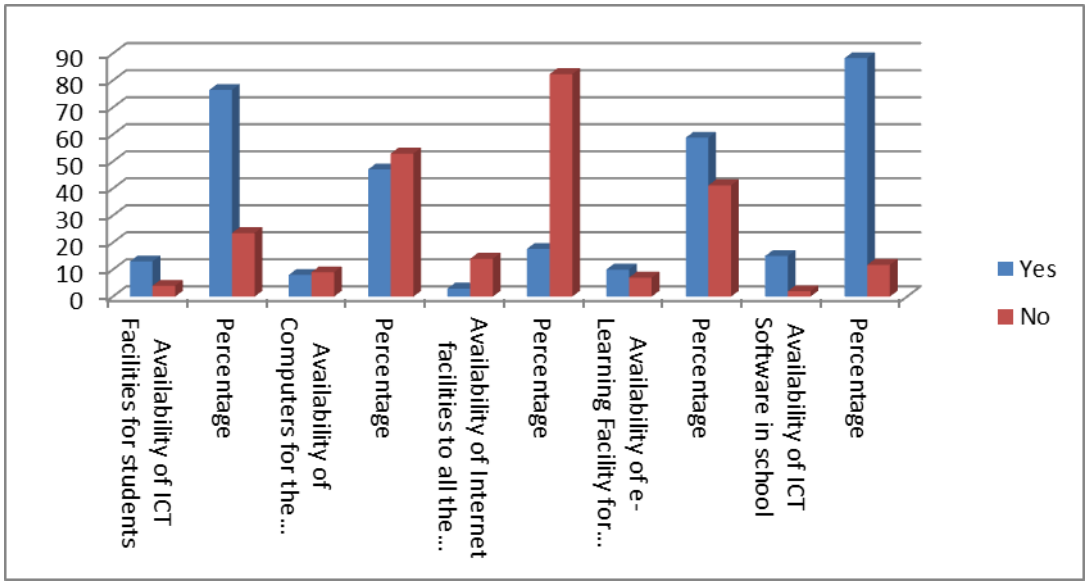

Figure-1
Showing the availability of ICT facility in schools for the students with visual impairment.

Table-2
Showing the availability of assistive technology facility in schools for the students with visual impairment.

	Availability of Assistive devices for students	Percentage	Availability of the Large print books for students	Percentage	Availability of the Braille books for students	Percentage	Availability of the Mathematical devices for students	Percentage	Availability of talking book library in school	Percentage
Yes	15	88.24	14	82.35	16	94.12	16	94.12	6	35.29
No	2	11.76	3	17.65	1	5.88	1	5.88	11	64.71

From the above table it is observed that 88.24 % (N=15) have the facility of assistive devices for students, while 11.76 % (N=2) lack this. Coming to the next criterion of Large print books for students, 82.35 % (N=14) possess it while 17.65 % (N=3) do not. It is very good to observe that for both Braille books and Mathematical devices 94.12 % (N=16) have this facility and only 5.88 % (N=1) lack it. It is very pity to note that majority of the schools i.e. 64.71 % (N=11) do not have the facility of

talking book library in their schools and only 35.29 % (N=6) have this very important facility.

The data pertaining to the availability of assistive technology facility in schools for the students with visual impairment is shown graphically in Figure No. -2.

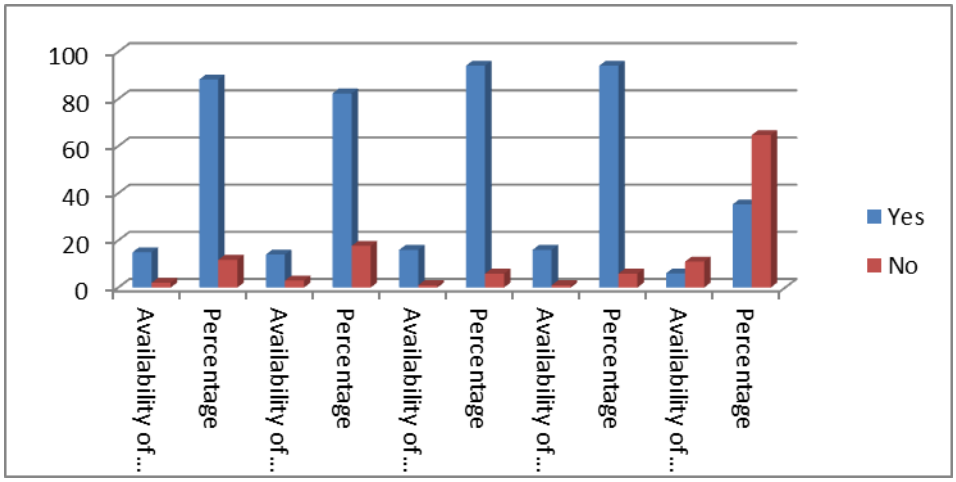

Figure-2
Showing the availability of assistive technology facility in schools for the students with visual impairment.

Testing of Hypothesis:

After the statistical analysis and interpretation of the data, it is observed that the hypothesised stating there will be good facility of assistive technology and ICT facility in schools for the students with visual impairment accepted in majority of items.

Conclusion:

On the basis of the results obtained from the statistical analysis of the data and testing of hypothesis is concluded that the availability of ICT and assistive technology in schools for the students with visual impairment is good. It is observed that students with visual impairment and teachers are found very active and enthusiastic to acquire modern technology suited to their training, education, and daily life. This indicates the encouraging aspect of assistive technology and information communication technology.

Recommendations:

There is a need to create awareness among persons with visual impairment about the importance of using Information communication Technology and assistive technology in their daily life, learning, recreation and other purposes. The schools need to play their role enabling the students with visual impairment to develop their association with those institutes which can provide information regarding assistive technology and ICT.The schools should organize program like workshops and seminars for the students with visual impairment to create awareness about the use of Information Communication technology and assistive technology.

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Determination Of Physico-Chemical Property Of Kelo River Water In Pree-Monsoon Session

Miss Reenu Mishra[1], Dr. M.M.Vaishnav[2], Dr. Dhanesh Singh[3]
1, Asstt. Professor, K.G.Art's & Science College, Raigarh
2. Asstt. Professor, Govt. Gramya Bharati College, Hardibazar, Korba
workshop.raigarh@gmail.com

Abstract

Global retail market has been one of India's favourite spot, as it has reached the top in terms of market potential along with medium economic and political risk. China and Brazil are the performers in retail market getting positioned with first two ranks and India has got the position 3 in this context. In view of the high potential, India is at par to the global players due to its growth potential in particular in the baby care segments. The present article focuses on the antecedents which affect purchase decision of customers in baby care product segment with special focus to Chennai. The study adopted survey method by way of questionnaire to 97 customers who use baby care products. The collected data was analysed using SPSS v 24.0 by applying statistical tools such as factor analysis and rank correlation. The research concluded that quality, price, uniqueness, service availability, buyer's affordability are the key factors contributing to the purchase decision making process of an individual.

Keywords : Purchase Behaviour, Quality, Service Availability, Buyer's Affordability

Introduction :

Liberalization has paved way to multiple players in the retail industry in India which has ensured to gain momentum in the sector. Retail industry contributes for 10 percent of nation's GDP and 8 % of job opportunities. Retail space has made India to position itself as rank 5 worldwide. Baby care is a segment which has wide possible growth in country like India due to its increased population. The prediction in terms of revenue percentage of CAGR is aroung 24 % over the period 2020 – 2025. Baby care products can be segmented in various dimensions such as food, apparel, accessories, toys, cosmetics, etc. Baby care market is an avenue for retailers to trigger the consumers with disposable income group who would prefer to purchase luxury items, which has been an attraction for global retail targets as it is an untapped market with high economic potential in India the reason being the country has the highest population of children in the age group 0 to 3. The present study is an attempt to identify niche market for baby care prdocuts in terms of purchase decision focusing in Chennai region. The research is an attempt to grasp the modus operandi of the strategy of the local players in retail sector to ensure sustenance in baby care segment. The research would create avenues to explore markets to be opened to tap the untapped potentials especially in the semi-urban markets. The local retail players are not able to explore the avenues in developing economies like Chennai unlike developed cities in USA and UK. The study would enhance the retailers to learn and explore opportunities from the developed countries and hence contribute to the GDP of the nation. The scope of the present study is to focus on the baby care market which is termed as the most profitable one as it has been in the boom in the last couple of decades.

Review Of Literature :

Aydin et al (2014) concentrated on both price and quantity of baby care products. The study indicated that it is crucial for both manufacturers and retailers to ensure that the competitive effectiveness of products remains high. According to consumer preferences, producers must act on production, pricing, promotion, and distribution. Dealers are responsible for promotion and distribution in their respective regions. Regular market study will assist in identifying consumer preferences and adjusting production, distribution, etc. accordingly. For establishing and sustaining a brand's image in minds of consumers, consumer-centric marketing is crucial.

According to **Kanchan, Kumar, and Gupta (2015),** consumers have become more opportunistic in recent years. They are receptive to change and actively seek new and improved benefits from online retailers. There is a significant increase in online sales, but for businesses to realise the full potential of this channel, they must have a deeper understanding of their prospective customers, their demands, the reasons to purchase online, and the strategies to convert a physical buyer into an online buyer.

Aswathy.R & Chandrasekar (2019)explained that due to substantial discounts offered to customers, it can be concluded that Internet retailing channels for the promotion of baby care products have grown in popularity. In the past few years, numerous new marketers have entered this industry through their own internet sites or by establishing themselves on e-commerce websites. After establishing themselves online,

few baby care brands have also begun catering to customers' offline by opening a store in order to gain an advantage over competitors and attract more customers. This segment has attracted e playerswho have begun offering a variety of baby care products to their customers. In the past few years, there has been an increase in online sales of child care products. Customers prefer online retailers because of the convenience and time savings.

Nandal et al (2020)found an effective loyalty programme can attract and retain new customers in any market. It has been observed that companies with loyalty programmes enjoy a greater competitive advantage. It aids in establishing lasting, profitable relationships with customers. To effectively implement a loyalty programme, a company must make optimal use of available technology, as an increasing number of customers make purchases digitally.

Yildrim et al. (2021) focused on purchase intention and willingness to pay based on consumer innovativeness, novelty seeking, and trustworthiness by emphasising the direct relationships between the variables within a holistic framework. The research examined the impact of consumer innovativeness, novelty seeking, and trustworthiness on purchase intention and willingness to pay for cosmetics and personal care products in an industry that is constantly evolving and expanding. 407 samples were obtained through convenience sampling. Consumer innovativeness, novelty seeking, and trustworthiness are crucial predictors of purchase intention for cosmetics and personal care products, and consumer innovativeness and trustworthiness influence the formation of willingness to pay for these products.

Debarun Chakraborty et al. (2022) used theory of consumption value to explain consumer behaviour toward BCP. To test the proposed model, information from 878 users of baby care products was gathered. The findings indicate that all consumption values except social values influence brand love for BCP, with emotional value being most influential factor, followed by conditional value. The study confirmed mediating role of purchase intent and moderating role of online risk perceptions and customer engagement in brand loyalty. The study's findings contribute to understanding of consumer behaviour and practice.

Research Question

What are the influencing factors for a customer to purchase baby care products?

Problem Statement

Any business is involved with catering to the needs of the consumer and targeting them for a long term relationship. For this reason, the purchase intention and their purchase behaviour is a venue for the retailers to focus and enhance them to maintain brand loyalty. Meeting the customers' requirement is a problem as there are lot of wavering thoughts in the minds of the customers. Hence, studying the purchase behaviour of BCP is the need of the hour to ensure sustenance in the BCP market.

Research Objectives

To distinguish factors impacting customer purchase decision of BCP.

To evaluate the customers' ranking in terms of the factors impacting purchase decision.

Research Methodology

The present study adopted descriptive method of research with a sample size of 97 residents in Chennai using structured questionnaire. The Buyers' Preference for Baby Care Products was determined using factor analysis and rank correlation. The study factors had reliability score of 0.896 and content validity close to 0.823 for each item of the questionnaire.

Data Analysis

The statistical tool used to reduce the dimensions of the study variables was exploratory factor analysis. Table 1 explained the KMO test of sphericity which was 0.778 showing the sampling adequacy for the present study.

Table 1 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.778
Bartlett's Test of Sphericity	Approx. Chi-Square	3.981E3
	df	96
	Sig.	.000

Table 2 explained the factors which have been extracted based on the factor analysis, wherein the factor loadings more than 0.70 has been considered as a thumb rule.

Item	Factor Loadings
Shop Kind	0.781
Location of the Consumer	0.756

Requirement Match	0.811
Billing Duration	0.799
Service	0.873
Quality	0.792
Variety	0.901
Choice of Product	0.884

Source : Computed Data

Nineteen items were reduced to 8 dimensions which are listed as shop kind, location of the consumer, requirement match, billing duration, service, quality, variety and choice of product. The preference of the customer lies on the quality, service, choice of the product and also if the requirement is matched.

Ranking Analysis :

Table 3 : Rating of Preference of Shop

Statement	Name	Percentage
The shop I prefer to buy BCP	Just Born	14.3
	Indian Babies	11.2
	Kids Zone	9.8
	Smile Baby	8.7
	New Born	7.4
	Infant Zone	6.9

The above table explains the preference of shop by the customers of BCP. Just born is ranked no 1 followed by Indian Babies, Kids Zone, Smile Baby, New Born, Infant Zone. The reasons for the ranking depends on the factors which have been identified through EFA vide table 2.

Table 4 : Ranking of BCP categories

Product Category of BCP	Ranking			
	1	2	3	4
Toys	50.4	49.3	-	-
Accessories	22.5	23.1	27.2	29.1
Food	47	53	-	-
Care	24.3	18.9	31.2	22.4

Table 4 explained that baby toys ranked no 1 followed by baby food products followed by baby care and accessories.

Table 5 Customer Expectation Ranks

Factors	1	2	3	4	5	6	7	8
Cost	23.1	22.3	21.5	20.3	19.8	18.4	17.1	16.3
Proximity	8.9	7.9	6.3	6.1	-	-	-	-
Quality	50	49.7	43.2	-	-	-	-	-
Organic Products	11.2	10.9	9.6	-	-	-	-	-
Service	22	21.6	19.3	19.1	-	-	-	-
Ambience	15.4	14.8	13.2	11.9	10.8	8.7	6.3	-
Variety	8.7	7.4	6.9	5.3	4.9	3.2	3.1	-
Discount	8.9	8.1	7.3	7.2	6.1	6.1	-	-

Table 5 explained that top preference was given to cost and quality followed by service and ambience.

Conclusion & Recommendations

The basic requirements for the BCP providers is to focus on the factors identified based on the present study which would enable them to sustain in the competitive scenario. The providers should plan themselves and procure the products to meet the requirements which would entice them to capture the consumer market. Just born, smile baby, kids zone are few shops which understand the customer requirements and cater to their needs. These outlets follow medical guidelines which facilitate the customers' preference in terms of nurture and maintenance of vaccination schedule as value added service. Location of the shop plays a vital role in the purchase decision process of an individual. The frequency of purchase depends on the venue of the outlet for making hazzle free purchase at any point of time of the day. Price is an added feature which would be attraction for a customer to consider the product for purchase. Discount scheme would attract the buyer. Hence the shop owners are recommended to work on the product pricing strategies by understanding the psychology of the customer in terms of price and work

accordingly. Customer service is a key to ensure optimal turnover in terms of financial avenues. Hence, BC providers are advised to work on the pricing strategy time to time to ensure customer retention, applications of social media platforms and introducing customer loyalty programs.

Summary

The study covers the reasons for the customer to purchase BCP and maintain brand loyalty. Indian retail market consists of middle class families as a majority. In view of this, only if the BC providers focus on the predominant factors the sustainability of the shops in terms of BCP would be ensured. Quality, price and proximity are few factors identified by the study which have to keep in mind of the shop owners to ensure optimal customer satisfaction. The BC providers are suggested to maximise social media to optimise the turnover. The study suffers certain limitations such as time factor and restrictions to Chennai city alone which cannot allow the study to be generalised.

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Exploring The Problems And Prospects Of Climate Change In India

Dr. Maneesh. B
Assistant Professor, Department of Economics, MMNSS College, Kottiyam, Kollam, Kerala
Email- manbpillai@gmail.com

Abstract

The dependence of large sections of India's rural population on natural resources for their livelihood makes the role of climate particularly significant for the rural economy. Changes in key climate variables pose a severe threat to development due to adverse effects on the rural ecosystem and erosion of adaptive capacity. Preparedness for combating the impacts of climate change then is an imperative for ensuring sustainable rural development.

Introduction

Environmental issues have for long been an integral part of Indian thought and social processes. The country has enacted a number of legislations on conservation of forests and ecosystems, waste management and pollution control. President of India as well as the Prime Minister emphasized the need for sustainability and announced the launch of a "Swachh Bharat Mission" for ensuring hygiene, waste management and sanitation across the nation. The goals of economic and social development must be defined in terms of sustainability in all countries and the present and future consumption balance within nations has to be seen in relation to historical patterns of consumption. The key question, therefore, is whether countries like India are prepared to accommodate more global targets, given their domestic obligations of basic development including minimum necessary needs of the poor. The bottom half of the world can do its bit but it cannot be expected to shoulder the bulk of the world's development, sustainability, and climate crisis burden. It would therefore be adopt appropriate strategies to deal with climate change and attain sustainable development. Climate change is an inevitable urgent global challenge with long-term implications for the sustainable development of all countries. The link between sustainable development and climate change is strong. While climate change will no boundaries, poor and developing countries, particularly the least developed countries, will be among those most adversely affected and at least able to cope with the anticipated shocks to their social, economic and natural system. Climate change is set to become an increasingly important strategic economic and political concern as it adversely affects India's high economic growth rates. Since the change in the climate is a worldwide phenomenon, India is also witnessing a part of such change. A formidable challenge to Indian agriculture comes in the form of global warming and the consequential climate change. The Indian climate has already undergone a perceptible change and its impact on agriculture has begun to crystallize.

Impacts of climate change:

Various impact assessment studies have estimated the impact of climate change in India. The melting of Himalayan glaciers due to a rise in temperature would threaten the livelihood of Indians who depend on agriculture and allied activities. Impact assessment studies have estimated that in low-latitude regions such as India, 1^{o}C rise in temperature may lead to 5-10 per cent reduction in the yield of major crops (WTO and UNEP 2009). Of India's geographical area of 329 mha, 40 mha is flood-prone (MoWR 1980), while almost one-sixth of the area supporting 12 per cent of the population is drought-prone (Jain et al. 2007). Climate change is predicted to increase the severity of droughts and floods (Gosain et al. 2006). Also, floods and sea storms are likely to affect fish breeding, migration and harvests, with severe impacts on small fishermen.

Impact of Climate change on Indian Agriculture:

An agrarian economy like ours mostly depend on the onset of monsoon. Nearly 43 per cent of India's geographical area is used for agricultural activity. Agriculture accounts for approximately 33 per cent of India's GDP and employs nearly 62 per cent of the population. About one third of the cropland in India is irrigated, but rainfed agriculture is central to the Indian economy. Despite technological advances such as improved crop varieties and irrigation systems, weather and climate are still playing key role in Indian agricultural productivity thereby national prosperity (Banerjee, 2010). Agriculture, backbone of the rural economy, is very vulnerable to the effects of climate change because almost 60 per cent of the country's agricultural areas are rainfed (Planning Commission 2011). The effects of heat on production too are expected to cause animal distress (Aggarwal et al. 2009). Theoretically, these changes in climate can affect, to a considerable extent, crops, soil, livestock, fisheries and pests. The effects of such changes can be manifested in several ways, such as reduction in crop duration (resulting in early or premature grain

ripening); disturbances in the equilibrium between crops and pests (pushing up losses due to pests and diseases); and hastening of nutrient mineralization in the soil (causing higher losses of applied fertilizers) (Sud, 2009). Also, the changes in temperature and sea level can affect fisheries directly as well as indirectly through the possible modifications in fish species and available feed. Where other livestock are concerned, higher temperature and changed fodder and water scenario can influence the production of meat, milk and poultry products. Apart from the direct impact, there is the indirect impact. For instance, land use patterns can undergo a significant change in response to factors such as snow melting and availability of irrigation water; frequency and intensity of inter- and intra-seasonal droughts and floods; changes in soil organic matter content; soil erosion; decline in arable land due to submergence of coastal areas under sea water; and availability of energy. All these variations can have tremendous bearing on agricultural production and, hence, food security.

Combating Climate Change:

Government Action

The government released the National Action Plan on Climate Change (NAPCC) in 2008 as India's first official climate change mitigation strategy. It sets out eight missions.

The National Mission for Sustainable Agriculture aims to increase the resilience of agriculture to climate change by developing new varieties of crops and cropping patterns that are resistant to extreme weather, long dry spells and flooding, as well as improving the productivity of rainfed crops. It recommends the development of credit and insurance to promote better agricultural practices.

The Green India Mission, recognizing the importance of forests as a carbon sink, targets the increase in area under forest and tree cover from 23 per cent to 33 per cent. The mission is in the preparatory with an allocation of Rs.4400 crore over 10 years.

The Jawaharlal Nehru National Solar Mission identifies solar energy as critical to ensuring energy security. It aims to install 22 gigawatt (GW) of solar capacity by 2022 compared to 10.28 megawatt (MW) in 2010. It anticipates that solar energy will achieve grid parity by 2022.

The National Water Mission attempts to manage water resources through conservation, increased storage and minimization of waste to achieve equitable water distribution. It has developed a framework to increase the efficiency of water to use by 20 per cent through regulatory mechanism using differential entitlements and pricing. It also aims to develop an incentive structure to promote water-neutral technologies and recharge underground water resources.

Mission for Sustaining the Himalayan Ecosystem focusing on the development of capacities to sustain the ecosystem and for long-term studies to understand and predict changes. It also plans to increase dialogue among stakeholders to formulate a comprehensive strategy to protect the fragile ecosystem.

The Sustainable Habitats Mission targets improvements in energy use by buildings, recycling of waste materials and improved management of solid waste such as through technology that generates power from waste, and the promotion of public transport in urban areas.

The National Mission for Enhanced Energy Efficiency proposes initiatives aimed at demand side management of energy. An important provision is the 'Perform Achieve and Trade' scheme where plants have specific energy consumption targets which, if not met, will need to be compensated for by purchase of energy permits from plants that have exceeded their target or payment of penalty.

The National Mission on Strategic Knowledge for Climate Change aims to promote research and technology development to identify the impacts of and formulate responses to deal with climate change through funding of high quality research.

Conclusion:

Efforts to address the impacts of climate change must form an integral part of rural development policy and consider impacts on poverty and livelihoods. The focus must be on building the rural population's capacity to adapt and on increasing their resilience to sudden impacts of climate change. While in India climate change and sustainability are being mainstreamed in the development process, global cooperation and substantial additional funding are required. If resources of this magnitude are not made available, outcomes in terms of growth, sustainability, and inclusive development are likely to be suboptimal. While technologies play a crucial role in climate change mitigation, it is equally important to bring innovations in various sectors to develop newer technologies. In view of this, it is extremely relevant to focus on research and development in specific areas of climate change.

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Study of Green Technology for Sustainable Development

Ms. Komal Kamlesh Gaikwad
Hirwal Education Trust's College of Computer Science and Information Technology, Mahad-Raigad
Email Id: gaikwadkoma659@gmail.com

Abstract:

Green technology gives people hope to turn around the effects of climate change and pollution. It is easier to fascinate clean energy from resources such as sun and water through these technologies and transform the energy sector. This research paper consists of fifteen green technologies for achieving sustainable development considering the future. Sustainable development is an approach to the economic development of a country without compromising with the quality of the environment for future generations. In the name of economic development, we are damaging our environment which leads to land degradation, soil erosion, air and water pollution, deforestation, etc. This damage may outshine the advantages of having more quality output of goods and services. In this research paper by collectively studying some articles and secondary data from internet some Green technologies are mentioned which helps to achieve sustainable development for future.

Introduction:

Green technology deals with the short-term and long-term impact of things on the environment. Green technology takes the form of recycling, health and safety issues, renewable resources, energy efficiency, and more. Green technology describes the technology and science-based solutions that moderate the negative human impact on the environment in a broad range of fields from agriculture to construction. 27% of global emissions are caused by energy production, 19% by agriculture, 16% by transportation, 31% by construction and production, and the remaining 7% caused by heating. Green technologies can be applied in all of these CO_2-emitting sectors, hence offering broad solutions for sustainable growth. Sustainable development is based on three pillars i.e. social, economical and environmental. The aim of Green technology is to maintain an equivalent balance between these three pillars. If you familiarize yourself with green technology, the concept of energy harvesting ticks all the boxes. With the help of Green Technology Self-powered radio sensors and switches gain energy from their surroundings (e.g., movement, light and temperature) for their operation. This means that these devices don't need external batteries or wires to function. They're used for finding solutions in the Internet of Things (IoT) and classic building automation and for applications. For example, self-powered sensors monitor room utilization and optimize parking management, provide data on how certain equipment is being used, and help to optimize restroom cleaning on a demand-based level. There are some Green technologies which helps to achieve sustainable development by balancing its three pillars.

Green Technologies: For Sustainable Development

Green Architecture

Green architecture has the potential to cut down urban resource use significantly, and making urban development sustainable. Green architecture allows for buildings to be constructed in a way, that they make use of existing natural light and ensure sufficient insulation, so as to reduce energy consumption. Such construction implementations will reduce energy use in lighting and by reducing the amount of heat loss to the outside, eliminate the need for heating. Moreover, the construction materials will be got from urban waste and landfills. This green technology may soon facilitate buildings to be "self-sufficient"- not requiring additional emissions for production and use. The modern solar panels installed on buildings top can generate energy to produce hot water through a heat exchanger. The household can access free hot water which sourced in a sustainable way.

Waste-Water Electricity Generator

Engineers at Oregon State University have invented a hybrid electricity-generator, which involves use of waste water to generate the electricity. They have successfully able to combine two distinct power generation technologies – microbial fuel cells and reverse electro dialysis, and construct a system that uses waste water to produce electricity. In this system an electrode is placed in waste water, bacteria automatically begin to grow on it. These bacteria are able to transform the organic compounds present in the water into electricity. This process helps to purify the waste water, which is a useful application. The generator has the capacity to produce enough electricity not only for power water treatment, but also considerably contribute to the main power grid. This technology is the beginning of energy-water sustainability, which is crucial with the increasing insufficiency of natural resources.

New Nuclear Material

Currently among total world energy production 12.3% comes from nuclear power plants. Nuclear energy has massive potential, but due to the dangers related with radioactive waste, the energy source has not been exploited to its potential. Currently, uranium – nuclear power reactors use only 1% of the potential energy available in Uranium, and the rest remains as radioactive waste. Other materials like Thorium which can replace Uranium and allow nuclear power to reach its potential. There is less waste connected with Thorium based fission, as the entire thorium mine is in the isotopic form required for the reactor. Furthermore, thorium is also more abundant in earth's crust. Due to high cost it is not able to replace Uranium. But, R&D and scientists in this sector work accordingly so that the technology will become cost-effective in the near future.

Waste-Sourced Biofuel / Pyrolysis

We are always on the hang around for smarter ways to recycle our scrap. Technology is now able to turn biomass waste such as grass, paper or wood chips into gas and ultimately ethanol. The processes for conversion, also uses a lesser amount of water and has a smaller carbon footprint than traditional ethanol production. Plants are major stores of carbon, and deforestation is a major contributor to greenhouse gas emissions and accordingly climate change. A process called PYROLYSIS has been invented, which allows offsetting some of the carbon release related with agriculture. If agricultural residue is burnt in a restricted, low-oxygen environment, then not only you can reduce greenhouse gas emissions, but it results in an end product of charcoal. The potential of this technology is massive, especially due to its dual benefits.

Biomimicry

Biomimicry has given growth to self-healing materials. The self-healing materials will have the potential to "heal" themselves when cut, torn or cracked. This will give longer lives to most consumer goods, and in this manner reducing the demand for raw materials and waste.

Electric Automobiles

A step up from regular electric cars, wireless technology will be able to deliver electric power to moving vehicles. All electric vehicles will comes up with pre-installed devices that will be able to receive power remotely via an electromagnetic field transmit from cables installed under the road. Electric vehicles are improvement in regular electric cars because they are eco-friendly. The vehicles come with devices that can receive power remotely through electromagnetic field transmit supported by cables under the road.

The automotive industry remains one of the most considerable environmental hazards, even though many people depend on cars. In current scenario the number of vehicles on the roads is high, and it's expected to increase in the future with the rapid growth in India and China. The EVs are one of the alternatives to regular motor vehicles to reduce environmental pollution.

Carbon Capture

Carbon capture, or the process of storing carbon underground, has instant demand. However there have always been doubts related with this process including risks related with storage and leaks. On the other hand, two new molecules have been acknowledged that will help to make carbon capture more safe, efficient and cost-effective. ZIFs and amines are two special cage-like molecules that have been shown to work particularly well under real world situation, and processes have also been put in place that will permit fast reproduction of these molecules.

Molten Salt Storage

While using solar energy production, molten salt can be useful in storing energy for future use. The extra heat during the day can be used to heat large amounts of salt, which has the ability to absorb and store large amounts of heat. This salt can then be used to produce steam, and run an electric turbine in the absence of the sun, thus making solar energy a more feasible option for replacing non-renewables.

Artificial Photosynthesis

Photosynthesis is the process by which trees immerse carbon dioxide from the atmosphere, and convert sunlight into energy. As such, scientists are trying to develop a technology that will use sunlight and carbon dioxide to produce energy. This technology will have the double benefit of reducing carbon dioxide levels while also producing renewable fuel.

Smart Meters

Smart grids and smart meters will allow us to use our limited resources like electricity and water more efficiently. Smart meters for electricity, will allow using our appliances more efficiently, at the same time as also reducing our energy bills. Smart grids for water can helps utilities to save water by reducing leakages etc. These devices have high potential in resolve demand and ensuring more efficient supply and thus allowing us to obtain more efficacies from existing resources.

Waste Management And Recycling

With modern technology, industries and households can implement a zero-waste lifestyle by separating recyclable waste from non-recyclable ones. The unsorted waste can be divided into a small part for recycling and an additional one to be used as fuel. The liquid waste becomes the main product as nutrients from that waste dissolve and makes biogas. The other highly developed recycling technologies could solve the problem of plastic waste. For example, chemical recycling is the process in which chemicals are used to break down plastic waste into useful chemical components. Then those chemical components can turn into fuel or plastic products for later use. This waste management and recycling process leads to a fresh and better environment and helps to keep people free from various diseases.

Generating Energy From Waves

The energy generated from currents, tides, and waves, commonly known as ocean energy. It is an excellent resource for sustainability. Some companies are using underwater buoys for wave translation into desalinated and zero-emission energy. The steel buoys can generate many kilowatts of power, and extreme weather cannot damage them. The pumps drive the water to power plants located onto land, and the water spins water under high pressure to produce electricity free from carbon. The power generation system can also power a desalination plant. Tidal energy is also capable because it is consistent and conventional and can transform the energy market.

Vertical Farms And Gardens

Vertical farming can solve food production issues because of its eco-friendliness. The idea of vertical farming is to grow crops in vertical layers instead of growing them horizontally. Vertical farming leads to increased sustainability. With the help of this eco-friendly technology, economies can build farms around cities and supply people with nutritious and fresh food. The latest innovations in vertical farming, includes the intelligent root misting system, which allow the farms to use water more efficiently than regular fields. Vertical farms can feed cities with dense populations even as using less water and land. They also help to reduce greenhouse gas emissions because there is no need to transport the farm produce product over long distances.

Water Purification

Over the years, there have been massive cases of water pollution in various states. The earth can recycle water naturally, while new green technologies can speed up the process and creates sustainable future. The surface water and the groundwater supplies are exposed to the risk of being overused where demand could go beyond supply. In current scenario most of the society's wastewater goes to the ecosystem without reusing or treating. The latest water purification developments include natural treatment systems, microbial fuel cells, membrane filtration, and biological treatment development. These processes aim to make water suitable for consumption at the same time as reducing pollutants from the rivers and the sea.

Solar Energy Panels

The use of solar energy is growing among industries and households. Scientists are coming up with new designs of solar panels to collect huge amount of energy from the sun and the rain. The all-weather suited solar panels enable households to produce sufficient electricity for domestic use in spite of of their geographical locations. The panels produce power from the rain's force during the rainy season and ensure a constant supply. Solar energy is good for the environment because it overcome air pollution and uses less amount of water. Producing electricity from fossil fuels can release methane gases and carbon dioxide that is harmful to human health. Generating power from solar panels does not cause any harmful emissions, so businesses and homes can depend on it. The functioning of solar photovoltaic cells requires no amount of water for electricity generation hence it is a great means of water conservation.

Conclusion:

One of greatest challenges developing countries face in realizing sustainable development is obtaining and putting in place the essential technologies. While access to technology depends on financial resources at some extent, but it is not only a financial issue. In many cases it is legal and institutional frameworks which slow down the development, transfer, import/export, and use of technologies for sustainable development. Taxes and tariffs can influence the ability to import technologies. Mean while subsidies may encourage the use of technologies that may waste energy, water, or other resources. With the above technologies, companies understand that change should happen soon. Resources are becoming limited, but the demand is increasing. There is a need to find a balance and create a sustainable future. With the help of green technologies, the world will reach sustainability levels, and the environment will be cleaner and safer for all. Green technologies can bring together economic progress with the production

limits of our planet. New green technologies, from vertical farming to 3D printing and plant-based meat, can decrease our environmental footprint while enabling sustainable growth.

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A Review on Phytochemicals of Nutraceutical importance in Illicium verum (Star-Anise), the major spice from Indian cuisine

Prof. Mrs. Vaishali N. Badgujar
Assist. Prof. Dept. of Botany, Shri R.L.T. College of Science, Akola.
Email- vaishalibadgujar73@ gmail.com

Abstract:

Plants plays important role in Everyday life . We cannot imagine life and its growth without plants. Besides food, plants are primary source of material for other necessity of life. The traditional medicinal practices are important parts of the primary healthcare system in the developing as well as developed world. The herbal medicines are comparatively safer and cheaper than synthetic drugs. The plant based traditional knowledge has become a recognized tool in search for new sources of drugs and nutraceuticals. *Illicium verum*, as a spice and pharmaceutical treatment of many harmful diseases, has been widely used in most Asian countries. In the present study, the review focuses mainly on food and phytochemical applications of *Illicium verum*. The fruits are commonly used as an ingredient of the traditional "five-spice" powder of cooking, and the essential oil of *I. verum* can be used as flavouring. The extraction from *I. verum* has carminative, stomachic, stimulant, and diuretic properties, and is used as a pharmaceutical supplement. Shikimic acid extracted from *I. verum* is one of the main ingredients in the antiviral drug Tamiflu, which is used to fight avian influenza. It has also been reported to possess antimicrobial and antioxidative properties as well as significant anticancer potential. This review presents a detailed study on phytochemicals properties of *Illicium verum* which plays important role in nutrition.

Keywords: Illicium verum, acetone, ethyl acetate, TLC

Introduction

Despite of tremendous progress in human health care system, the infectious diseases caused by microorganisms are still a major threat to the public health . Nature has provided an important source of remedies to cure all the ointments of mankind. In the recent years, all the medicines used were from the nature source, especially from the plants. Plants contain hundreds or thousands of metabolites. Medicinal and aromatic plants, a gift of the nature, are being used against various infectious diseases in the world since the past history. Thus the ancient wisdom has been the basis of modern medicine and therapeutics.

Illicium is the sole genus in the family of schisandraceae. It comprises of forty two species of evergreen shrubs and small trees. The species of native is from the tropical and subtropical regions of Eastern and South Eastern Asia, South Eastern North America and the West Indies. The most frequently occurring species are *Illicium dunnianum, Illicium graffiti, Illicium verum and Illicium anisatum. Illicium verum* is commonly known as star anise or star aniseed or Chinese star anise (Kumar et al.2012). A common Asian cuisine ingredient, star anise's popularity is steadily growing . It is a spice that closely resembles anise in flavours obtained from the star shaped pericarp of *Illicium verum*. It is a medium sized native evergreen small or medium sized tree of subtropical and temperate regions. *Illicium verum* has been used in a tea as the traditional remedy . They consist of star-shaped fruits, which are reddish-brown in colour and contain 6–8 carpels attached in a whorl arrangement. The shape and size of the carpel is boat-shaped and 10 mm long, also contain a seed. The seeds are brown coloured, ovoid shaped, and possess smooth, shiny, and brittle texture. This plant is propagated by its seeds for its application in different types of medicines, perfume, and as a culinary spice in India, southern China and Vietnam. The fruits are harvested before they ripen, and sun drying is done for further use. Anethole, is the main ingredient found in Star anise, that gives the unrelated anise its flavour, hence it has become a less expensive substitute for anise in baking as well as in liquor production, most distinctively in the production of the liquor Galliano. The fruits are commonly used as a spice, and the seeds are sometimes chewed after the meals to aid the digestion. Star anise has many culinary uses like, enhances the flavour of meat, the major component of *garam masala* and used as a spice in the preparation of *biryani* and *masala chai*. Traditionally, dried seedless fruit is used as incense. It is used for sweet fragrance while preparing butter-salted tea or sugar tea. Besides these properties, it is also gaining importance in the natural health world due to the medicinal values of phytochemicals present in the fruits. These plants have been extensively used for the treatment of infectious diseases in traditional medicine. The fruit consists of essential, as well as volatile oil. Traditionally, the fruit has been used as carminative, digestive, dyspepsia, antispasmodic, stimulant, anti rheumatic, and diuretic. The paste/powder of Star anise is used to treat rheumatism and nostalgia, and is

also used as an antiseptic. They are also used as medicine to treat cough, toothache, and sinusitis and to improve the strength of local alcohol. The fruit is considered as carminative, stomachic, and galactagogic. It is also used in curing vomiting, abdominal pain, dyspepsia, and food poisoning. There is a growing demand for star anise as a source of shikimic acid for the manufacture of anti-viral drugs widely used in the treatment and prophylaxis of avian flu (commonly bird flu). Shikimic acid is the starting compound utilized for the manufacture of the anti-viral drug oseltamivir. It is also a warming spice that contains powerful terpene antioxidants i.e. Linalool and limonene. Linalool is capable of protecting the lipid bilayer present in the cell membranes, which protects the arteries and improves blood flow. Limonene shows strong anticancer activity within the body. These components also have the property of improving the energy levels and as an expectorant to remediate the mucous associated with bronchitis, asthma, common cold, and whooping cough. Chinese use fruits to treat some skin problems. Star anise has been reported to have antifungal, antibacterial, carminative, analgesic, anticarcinogenic, sedative, and antioxidant properties.

Materials and Methods

Chemicals and reagents Potassium sulphate, Copper sulphate, Boric acid, Sulphuric acid, Chloroform and Sodium hydroxide were purchased from Merck. All chemicals used were of analytical grade.

Extraction procedure

The dried powder samples of *Illicium verum* hook were extracted with water using mechanical shaker for 2 hours. After extraction, it was filtered and used for phytochemical screening. The obtained stock solution was used for phytochemical screening following the methodology of Harborne and Kokate [5,10].

Preliminary phytochemical screening

Test for alkaloids One gram powder samples of *Illicium verum* hook were taken in a conical flask and added ammonia solution (3 mL). It was allowed to stand for few minutes to evaluated free alkaloids. Chloroform (10 mL) was added to the conical flask shaken by hand and then filtered. The chloroform was evaporated from the crude extract by water bath and added Mayer's reagent (3 mL). A cream colour precipitation was obtained immediately that showed the presence of alkaloids.

Test for saponins: About 0.5 g of the plant extract was shaken with water in a test tube and then heated to boil. Frothing was observed which was taken as a preliminary evidence for the presence of the saponin.

Test for tannins : About 0.5 g of extract was added was in 10 ml of water in a test tube and filtered. A few drops of 0.1% ferric chloride was added and observed for brownish green or blue-black colouration (1).

Test for steroids : 2 ml of acetic anhydride was added to 0.5 g of methanol extract of each sample with 2 ml sulphuric acid. The colour changed from violet to blue or green in some samples indicating the presence of steroids. Marina Paul Das et al /Int.J.Pharm Tech Res.2013, 5(12) 326

Test for flavonoids: The stock solution (1 ml) was taken in a test tube and added few drop of dilute NaOH solution. An intense yellow colour was appeared in the test tube. It became colourless when on addition of a few drop of dilute acid that indicated the presence of flavonoids

Test for anthraquinones : About 0.5 gm of extract was taken in a dry test tube and 5 ml of chloroform was added and shaken for 5 min. The extract was filtered and the filtrate shaken with equal volume of 10% of ammonia solution. A pink violet or red colour in the ammonic layer indicates the presence of anthraquinones.

T**est for cardiac glycosides:** 0.2 gm of extract was dissolved in 1 ml of glacial acetic acid containing 1 drop of ferric chloride solution. This was then under layered with 1ml of concentrated sulphuric acid. A brown ring obtained at the interface indicated the presence of a deoxysugar characteristic of cardioids.

Test for Proteins: To 2ml of protein solution 1ml of 40% NaOH solution and 1 to 2 drops of 1% CuSO4 solution was added. A violet colour indicated the presence of peptide linkage of the molecule.

Test for Amino Acids: To 2ml of sample was added to 2ml of Ninhydrin reagent and kept in water bath for 20 minutes. Appearance of purple colour indicated the presence of amino acids in the sample.

Results And Discussion

The history of natural products used in ancient times and folk medicine around the world is the basis for indicates the presence of anthraquinones. The preliminary phytochemical screening of aqueous extract shown that they contain Alkaloids, steroids, proteins, flavonoids, tannins, and phenolic compounds. However, sensitive phytochemicals were not detected. This could be because as time goes by few phytochemicals might get exhausted. However it was observed that the TPC was found to be very much higher than the flavonoid content. The result of preliminary phytochemical screening is compiled in Table No. 1.

Table 1: Phytochemical analysis of Illicium verum hook (Star- anise).

S.No	Phytochemicals	Water
1	Alkaloids	+
2	Flavonoids	+
3	Saponins	+
4	Steroids	+
5	Tannins	+
6	Proteins	++
7	Amino acids	++

(-) indicates absence , (+) indicates presence at good concentration, (++) indicate presence at high concentration.

Discussion

The aqueous extracts revealed that, it contains alkaloids, tannins , saponins, phenols, flavonoids, and steroids compounds. The chemical constituents in the plants or crude extracts are known to be biologically active ingredients. Some chemical constituents are considered as secondary metabolites components. They are directly responsible for different activity such as antioxidant, antimicrobial, antifungal and anticancer [5-6]. Several authors already reported on flavonoids groups exhibited a wide range of biological activities such as antioxidant, anti-inflammatory, antimicrobial, anti-aging, anticancer and anti-allergic [3-5]. Saponins are other type bioactive chemical constituents which are involved in plant disease resistance because of their antimicrobial activity . Tannins are phenolic compound and their derivatives are also considered as primary antioxidants or free radical scavengers . Spices like all other things contain a very wide range of different chemical compounds and show varies in composition and structure. Apart from the obvious inter-specific differences, no two individuals, weather animals or spices are exactly the same or for that matter any two parts. An individual, being largely composed of living tissues which are metabolically active is constantly changing in composition and the rate and extent of such change depends on the physiological role and stage of the organ concerned .

Conclusion

Based on the results, the present investigation conclude that the Star anise contain significant amount of oil, phenols and flavonoids. These constituents may play key role as antioxidant.

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The Contribution of IT Sector in Financial Development of India

Mrs. Neeta R. Chordiya
Smt P K Kotecha Mahila Mahavidyala Bhusawal

Abstract-
IT is the highly effective sector regarding financial development of India. IT is playing an important role in Development of India today & has transformed India's image from a slow moving bureaucratic economy to a land of innovative entrepreneurs. The IT sector in India is generating 2.5 million direct employments. India is now one of the biggest IT capitals of the modern world and all the major players in the world IT sector are present in the country. The major cities that account for about nearly 90% of the sector's exports are Bangalore, Hyderabad, Kolkata, Chennai , Trivandrum, Noida, Mumbai and Pune.

Bangalore is considered to be the Silicon Valley of India because it is the leading IT exporter. Exports dominate the industry and constitute about 77% of the total industry revenue. However, the domestic market is also significant with a robust revenue growth. The industry's share of total Indian exports (merchandise plus services) increased from less than 4% in FY1998 to about 25% in FY2012. According to Gartner, the "Top Five Indian IT Services Providers" are Tata Consultancy Services, Infosys, Cognizant, Wipro , and HCL Technologies. Department of Electronics broke this impasse in 1991, creating a corporation called Software Technology Parks of India (STPI) that, being owned by the government, could provide VSAT communications without breaching its monopoly. STPI set up software technology parks in different cities, each of which provided satellite links to be used by firms; the local link was a wireless radio link. In 1993 the government began to allow individual companies their own dedicated links, which allowed work done in India to be transmitted abroad directly. Indian firms soon convinced their American customers that a satellite link was as reliable as a team of programmers working in the client's office. Videsh Sanchar Nigam Limited (VSNL) introduced Gateway Electronic Mail Service in 1991, the 64 kbit/s leased line service in 1992, and commercial Internet access on a visible scale in 1992. Election results were displayed via National Informatics Centre's NICNET. The Indian economy underwent economic reforms in 1991, leading to a new era of globalization and international economic integration. Economic growth of over 6% annually was seen during 1993-2002. The economic reforms were driven in part by significant the internet usage in the country. The new administration under Atal Bihari Vajpayee 1999 government which placed the development of Information Technology among its top five priorities— formed the Indian National Task Force on Information Technology and Software Development. Wolcott & Goodman (2003) report on the role of the Indian National Task Force on Information Technology and Software Development: Within 3 months of its establishment, the Task Force produced an extensive background report on the state of technology in India and an IT Action Plan with 108 recommendations. The Task Force could act quickly because it built upon the experience and frustrations of state governments, central government agencies, universities, and the software industry. Much of what it proposed was also consistent with the thinking and recommendations of international bodies like the World Trade Organization (WTO), International Telecommunications Union (ITU), and World Bank. In addition, the Task Force incorporated the experiences of Singapore and other nations, which implemented similar programs. It was less a task of invention than of sparking action on a consensus that had already evolved within the networking community and government. "The New Telecommunications Policy, 1999" (NTP 1999) helped further liberalize India's telecommunications sector. The Information Technology Act 2000 created legal procedures for electronic transactions and e-commerce.

Another wave of Indian professionals entered the United States. The number of Indian Americans reached 1.7 million by 2000. This immigration consisted largely of highly educated technologically proficient workers. Within the United States, Indians fared well in science, engineering, and management. Graduates from the Indian Institutes of Technology (IIT) became known for their technical skills. The success of Information Technology in India not only had economic repercussions but also had far-reaching political consequences. India's reputation both as a source and a destination for skilled workforce helped it improve its relations with a number of world economies. The relationship between economy and technology—valued in the western world—facilitated the growth of an entrepreneurial class of immigrant Indians, which further helped aid in promoting technology-driven growth.

Major IT Hubs in India :--

Rank	City	Description
1	Bangalore	Popularly known as the Silicon Valley of India and IT Capital of India. Bangalore is considered to be a global information technology hub and largest software exports from India. The top Indian IT service providers like Infosys and Wipro are headquartered in Bangalore, It is also country headquarters to many top firms like Intel, Texas Instruments, Bosch, Continental and many more, Bangalore alone consists of more than 35 percentage of all the IT companies present in India and contains close to 5000 companies making it the largest IT contributor in India.
2	Chennai	Chennai is the Second largest exporter of IT and ITES of India. Almost all companies have their backup operations in Chennai. Cognizant, TCS, wipro, Infosys,Verizon, L&T, HCL, POLARIS, PATNI, CAPGEMINI and all the major global IT service company has its Indian operations' office's in Chennai and Major BPO'S and ITES. It has world class IT infrastructure like Mahindra World City, Tidal Park, and IT Corridor.
3	Hyderabad	Hyderabad is the major IT hub in India. It has become the first destination for the Microsoft development centre in India and largest software development centre outside of their headquarters in Redmond, Washington. It is also known as Cyber city which consists of many Multinational corporation companies such as Cognizant, TCS, Infosys, Syntel, Wipro etc., together called Hi-tech City. and is the BPO hub of India
4	Delhi	The National Capital Region comprising Delhi, Gurgaon and Noida are clusters of software development.
5	Mumbai	The Financial capital of India, but many IT companies like TCS which is India's first and largest have headquarters in Mumbai along with Reliance, Patni, LnT InfoTech, Mel star, Mastek, Syntel and I-Flex.
6	Pune	Major Indian and International Firms present in Pune. Pune is also C-DAC headquarters.
7	Kolkata	The city is a major back-end operational hub for IBM, Deloitte.
8	Coimbatore	Proudly called as "Manchester of South India", Coimbatore is one of the fastest emerging IT hub and developing cities of India. Coimbatore has major IT companies like Cognizant, Wipro, Robert Bosch, HCL Technologies, DELL, Exterro, Tata Consultancy Services. It also hosts the training center of Cognizant. There are many other IT majors which have planned to start the operations soon.
9	Bhubaneswar	The capital city of Odisha, an emerging IT and education hub, is one of India's fastest developing cities.
10	Thiruvananthapuram	The capital of Kerala, now houses all major IT companies including Oracle, TCS, Infosys, and contributes in IT export of India.
11	Kochi	The commercial capital of Kerala, now houses all major IT companies including TCS, Cognizant, and contributes in IT export of India.

Employment Generation:--

This sector has also led to massive employment generation. The industry continues to be a net employment generator - expected to add 230,000 jobs in FY2012, thus providing direct employment to about 2.8 million, and indirectly employing 8.9 million people. Generally dominant player in the global outsourcing sector. However, the sector continues to face challenges of competitiveness in the globalized and modern world, particularly from countries like China and Philippines. India's growing stature in the Information Age enabled it to form close ties with both the United States of America and the European Union. However, the recent global financial crises has deeply impacted the Indian IT companies as well as global companies. As a result hiring has dropped sharply, and employees are looking at different sectors like the financial service, telecommunications, and manufacturing industries, which have been growing phenomenally over the last few years. India's IT Services industry was born in

Mumbai in 1967 with the establishment of Tata Group in partnership with Burroughs. The first software export zone SEEPZ was set up here way back in 1973, the old avatar of the modern day IT park

Economic Development:--

The economic effect of the technologically inclined services sector in India—accounting for 40% of the country's GDP and 30% of export earnings as of 2006, while employing only 25% of its workforce—is summarized by Sharma (2006): "Today, Bangalore is known as the Silicon Valley of India and contributes 33% of Indian IT Exports. India's second and third largest software companies are headquartered in Bangalore, as are many of the global SEI-CMM Level 100 Companies. Numerous IT companies are based in Mumbai, such as TCS (among India's first and largest), Reliance, Patni, LnT Infotech, Myzornis Corporation and I-Flex. The foremost among the Tier II cities that is rapidly growing in terms of IT infrastructure in Kerala. As the software hub of Kerala, more than 80% of the state's software exports are from here. Major campuses and headquarters of companies such as Infosys, Oracle Corporation, IBS Software Services and UST Global are located in the city. India's biggest IT company Tata Consultancy Services is building the country's largest IT training facility in Trivandrum. On 25 June 2002, India and the European Union agreed to bilateral cooperation in the field of science and technology. A joint EU-India group of scholars was formed on 23 November 2001 to further promote joint research and development. India holds observer status at CERN, while a joint India-EU Software Education and Development Center will be located in Bangalore.

Services to Product Orientation :--

The migration of Indian IT companies to mainstream product development is not happening any time in the near future, this, primarily can be attributed to the fact that was discussed in earlier section, which is, lack of innovation culture amongst the top hierarchy of the firm, and, less availability of skilled management graduates in the country. However, what might possibly happen is, global multinationals that are currently outsourcing services and back office jobs to India, might outsource more of higher level jobs in SDLC (Software Development Life Cycle) like requirement analysis and architecture design. The other opportunity is, Indian subsidiaries of global multinationals might take up significant chunk of the product development than what they are currently doing, this, however, is not happening currently because, the global IT firms are still not comfortable in working out a way to extract high end work from Indian companies.

Future Outlook :--

Presence of Indian companies in the product development business of global IT is very meager, however, this number is slowly on the raise. The Indian IT market currently focuses on providing low cost solution in the services business of global IT. US giants that outsource work to India, do not allocate the high end SDLC (Software Development Life Cycle) processes like requirement analysis, high level design and architectural design, although some Indian IT players have enough competency to take up and successfully complete these high level software jobs. The other prominent trend is, IT jobs, that were earlier confined to Bangalore, are slowly starting to experience a geographical diffuse into other cities like Chennai, Hyderabad and Pune. The growth is not fast paced, this, can be largely attributed to the lethargic attitude of the government in providing proper telecommunication infrastructure. The penetration levels are higher for mobile, but, the speed at which the backbone infrastructure works (network speed) and the coverage it offers are far below what other countries of the world have currently in offer.

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Community Engagement Practice in Open Defecation Free villages of Maharashtra: A Study

Deepak Awate[1], Dr. Munkir Mujawar[2], Dr. C. K. Singh[3]

Abstract-

Open defecation is something to be experienced in rural areas. A lot of people know what are the disadvantages or disadvantages of defecating in the open. But still people prefer to defecate in the open for many different reasons. To reduce this it is necessary to create awareness about it among people. People's participation is very important if you want to complete any task successfully. Through people's participation, many big tasks are completed in a very simple way. In India and also in Maharashtra, the people of many villages have made their village Open Defecation Free by taking initiatives and making successful efforts to make it an Open Defecation Free village. In recent years, due to the efforts made by the government and other elements and the cooperation of the people, to some extent, the villages have become free of encroachments. It is important to understand the stages of community co-plantation to make an ODF village. Such as if inform, consult, collaborate, empower, and engage community and achieve ODF goal.

Key Words: Community Engagement Practice, Open Defecation, and Maharashtra etc.

Introduction:

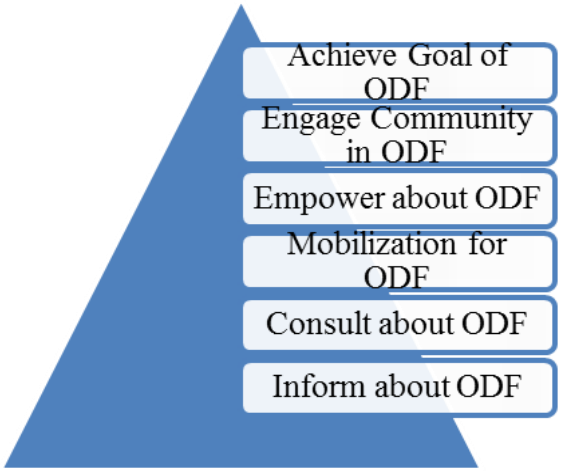
The term "community" is used to broadly define groups of people based on interests, including stakeholders, citizens, businesses, and many more. "Community participation makes it possible to understand the problems and contexts of the community in a more appropriate way and helps to build stronger relationships between community members. The outcome of people's participation is ultimately social capital and a strong relationship network. Community participation, people participation or participatory arrangement are the footings which are used interchangeably but goals at connecting individuals in the community to raise the extreme profit for the entire society. Community participation program is about meeting diverse opinions from whoever needs to participate and making people in the rural areas about open defecation free village to voice their opinions. Participatory planning is generally used by planners to get people to come together on numerous significant matters faced in a rural community. Community participation approach is of several types. These include: Passive Participation, Participation in Information Giving Participation by Consultation, Participation for Material Incentives, Functional Participation, Interactive Participation, and Self-mobilization:

Review: Sumedh M. K. (Dec 2018), conclude their paper named Community-Based Approaches to Tackle Open Defecation in Rural India, theory, Evidence and Policies There is hardly any argument that open defecation is mostly a behavioral issue, exacerbated by structural challenges. Tackling this issue at an individual level has confirmed hard and time-consuming. Community-based new tactics have been effective in many rural areas across the world. However, such programmes must be tailored to different societies. Ordering these programmes will make procedures top-down, negating the core belief of community organization through people-centric and people-driven involvements. No programme fits all, and theories keep changing. Therefore, additional research is required to help change these tactics and, in turn, decrease the practice of OD. **Diane Coffey and et al. (December 2016),** conclude their research as despite the significance of sanitation for health and human development, comparatively little care has been paid to clarifying why rates of open defecation in rural India are so major associated to other developing countries. Using new data from many states, we establish that the reasonable soak pit latrines that are used to decrease disease spread in other developing countries are seen as ritualistically polluting and socially undesirable. All of these reasons, combined with a world view in which open defecation is healthy and enjoyable, and latrine use is for the weak and vulnerable, prevent the many poor from building latrines.

Methodology: This is the conceptual paper based on secondary data. The number of articles and materials reviewed for this paper is taken from different online sources i.e. national and international journal, GO and NGOs reports, research paper and articles etc.

Community Based Rational Approach: Community-based approaches based on the principle of village participation assessment have been useful in addressing sanitation issues in many countries. The success of community-based interventions depends on a number of factors, including governance interventions. However, decentralization of policies, flexibility in implementation and empowerment of local governing bodies are the mainstays of community-based interventions.

Steps of Community Engagement to Achieve Goals: Open defecation in the village is an important problem in rural areas. Therefore, it is expected to create awareness among the community about the disadvantages of defecating in the open. People are trying to achieve the objectives of the community by participating in different ways. But if we work with the right use of people's participation, then our objective is sooner. For that you need to understand the stages of people's participation to set your goals straight.



Inform about ODF: Inform means to let a person know something. People's participation can be increased to reduce the rate of open defecation by informing people about the causes and effects of people defecating in the open. Therefore, people should be informed about it. If the objectives of community development are to be done by bringing the general public together, then at the beginning they need to explain the subject on which you want to work together. People in the community should be fully informed about the subject.

Consult about ODF: Consultation means a meeting with an expert, such as a medical doctor, in order to seek advice but in community engagement practice for open defecation free village the need to consult with experienced community member about water and hygiene facilities and other sources. It is expected to consult this issue with a person who is experienced and knowledgeable about the subject matter.

Mobilization for ODF: collaboration means work jointly on an activity or project. There are different groups in the village. There are many kinds of people. To bring together all the elements of children, women, young and old and strive for a hunger-free village is to cooperate. Community mobilization is the practice of **getting collected as many participants as probable to increase people's awareness of and request for a specific programme,** to backing in the delivery of assets and services, and to build up community participation for sustainability and self-sufficiency. Community Mobilization is a practice whereby a group of people convert awake of a shared concern or shared necessity and agree to take Mobilization in order to make shared profits. A frequent and cumulative practice that contains communication, learning or education, and organization, which collected lead to community Mobilization and development.

Empower about ODF: Empowerment is an important concept in the process of promoting the development of the village. Various methods are expected to be adopted to empower the weaker elements. It is important to empower the people of the village for an Open Defecation free village. For the community empowerment the training will be important. Hence conducted to train ground level motivators, who were further deployed in villages to sensitize the community towards sanitation?

Engage Community in ODF: Community engagement takes a strategic approach to the relationships, communication and interactions between community members and an organization to try to influence outcomes for both. Community engagement can take many forms, and partners can include organized groups, agencies, institutions, or individuals. Collaborators may be engaged in health promotion, research, or policy making. The task was not just to build toilets, but to bring about the necessary behavioral change among the community towards open defecation.

Achieve Goal of ODF: The last step to make the village an open defecation free village is to make the village completely open defecation free. Achievement goal theory holds that, when performing achievement-related tasks, **individuals can fluctuate in their state of involvement directed toward task or ego goals.** That is, they can be more or less task- and ego-involved at any topic during task engagement.

It is significant to understand the stages of community engagement to make an ODF village. Such as if inform, consult, collaborate, empower, and engage community and achieve ODF goal.

Conclusion: A community engagement practice that contains the **creation of a partnership for executing plans to address development priorities** can be of countless value. Be mindful of significant community engagement practices and how they can best be used in organizing backing for assessment and execution activities. Best practice of the community engagement practices is that design its delivery in a timely and appropriate way. Work with relevant partner in the community. Data should be jargon free, suitable and understandable. Make it easier and enable community to take part successfully.

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Types of Rural Settlements in Akola District: A Geographical Study

Dr. Anita J. Chavan
Assistant Professor and Head of the Department (Geography) Madhukarrao Pawar Arts College, Murtijapur, Dist - Akola
Email Id – dr.apawar24@gmail.com

Abstract

Human habitation has its origins in rural areas. First rural settlements were formed and then over time the population increased and some rural settlements were transformed into urban settlements. Most of the population of India lives in rural areas and large scale agriculture is carried out in the rural areas and the raw materials required for the industries are supplied from these rural areas. The types of rural settlements are not uniform, depending on the number of houses in rural areas and their size. In this paper, tahsil wise study of rural areas of Akola district has been done.

Key Words- Rural settlements, types, compact, semi-compact, dispersed, topography

Introduction

In India settlement structure is diversified in terns of dispersed to nucleated or in size form a hamlet or large villages (Dey and Bhaduri, 2016). Compact settlement are mostly found in the highly productive alluvial plains, where as dispersed settlements are generally found in the areas of extreme climate, hilly tracts, thick forest, grasslands, poor agriculture land, areas of extensive cultivations and areas where it is essential that farmer should live on his agricultural land rather than village (Majid Hussain, 2018). The present paper has derives the geographical analysis of types of rural settlements in Akola district of Maharashtra state.

Objectives

The main objective of the present research paper is to identify and discuss the tahsil wise types of rural settlement in Akola district

Data Source and Methodology

Present discussion is mainly based on secondary data. It is compiled from Akola District Census Handbook, 2011 and Socioeconomic Review of Akola District, 2021, also relevant websites. The types of rural settlements are identified with the help of **'Bernard (1931)'** method by using following formula,

$$K = (S \times M) \div N^2$$

K – Degree of Concentration
S – Rural Area of tahsil
M – Total Rural Households in Tahsil
N – Number of Settlement Groups in Tahsil

The complied data and calculated values are arranged in table also distribution villages and types of rural settlement are shown in map with choropleth map. Tahsil wise rural area and number of rural households are shown in the graph.

Study Region

Akola district is located in Maharashtra state and it is the part of Vidarbha region. District is situated in between 20^0 16' N to 21^0 11' N latitude and 76^0 38' E to 77^0 33' E longitudes. Akola district covered total 5672.81 sqkm area and consists total seven tahsils. Akola, Balapur, Patur, Akot, Telhara, Barshitakali and Murtijapur respectively. Total population of the district is 1813906 and out of them 1094165 (60.32%) is rural and 719741 (39.68%) is urban population according to the census 2011.

Rural Settlements in Akola District

According to the current data total rural area of the district is 5588.85 and it is 98.52% to the total area of the district. Akola tahsil found the highest distribution of rural area (1088.2 sqkm), while Telhara tahsil recorded lowest distribution of rural area (608.58 sqkm) in the entire district. In the district there are total 986 habited villages are situated and Akola (190) tahsil found maximum number of villages. Patur (95) and then Balapur (98) tahsils found the lowest distribution of villages and it is below 100. Other all tahsils found more than 100 villages in their entire rural region (Figure No 1). Total number of rural household i.e. rural families in the district is 250160 and maximum distributions of rural families are found in Akola tahsil (52693). Patur (27147) tahsil recorded lowest distribution of rural households and other tahsil has found this distribution in between 33 to 38 thousand.

Types of Rural Settlements in Akola District

Table No 1 shows the tahsil wise rural area, no of villages, no of rural families and concentration index. Also Table no 2 shows the category wise types of settlements and tahsils included in particular pattern, also this table contains total number of settlements in particular settlement types with rural area percentage. The index (K) is divided into three categories, below 1000 index is considered as Dispersed pattern, 1000 to 1500 as Semi Sprinkled pattern, 1500 to 2000 as Semi Compact pattern and greater than 2000 as Compact pattern.

Table No 1 Akola District – Types of Rural Settlements (By Bernard's Method of Degree of Concentration)

Tahsil Name	Rural Area (SqKm)	No of Villages	No of Rural Households	N^2	K	Types of Rural Settlements
Telhara	608.58	101	33308	10201	1987	Semi Compact
Akot	835.73	180	37171	32400	959	Dispersed
Balapur	696.57	98	33351	9604	2419	Compact
Akola	1088.20	190	52693	36100	1588	Semi Compact
Murtijapur	814.89	163	31883	26569	978	Dispersed
Patur	731.91	95	27147	9025	2202	Compact
Barshitakali	812.97	159	34607	25281	1113	Semi Sprinkled

Data Source – District Census Handbook, Akola (2011) and Socioeconomic Review, 2021

Concentration Index (K) – Calculated by Author by Bernard's Method

Dispersed Pattern

This type of settlement is found in Akot and Murtijapur tahsil. The index of these two tahsil is less than 1000. The ratio of rural families and rural area is lower in these tahsils. Rough topography, poor level of ground water, low fertility of soil are the main factors for the such type dispersed settlements in these two tahsils (Figure No 2). Maximum settlements in these tahsils are in small size and located in high altitude region especially in Akot tahsil. The upper part of Akot tahsil has high altitude and rough topography. This region found dispersed pattern of rural settlements. In these two tahsils total 343 rural settlements are situated and covered 29.53% rural area.

Table No 2 Akola District – Category wise Types of Rural Settlements (By Bernard's Method of Degree of Concentration)

Settlement Types	Category (K)	Tahsil Name	Total No of Rural Settlement	Total Rural Area (%)
Dispersed	< 1000	Akot, Murtijapur	343	29.53 %
Semi Sprinkled	1000 – 1500	Barshitakali	159	14.55 %
Semi Compact	1500 – 2000	Akola, Telhara	291	30.36 %
Compact	> 2000	Patur, Balapur	193	25.56 %

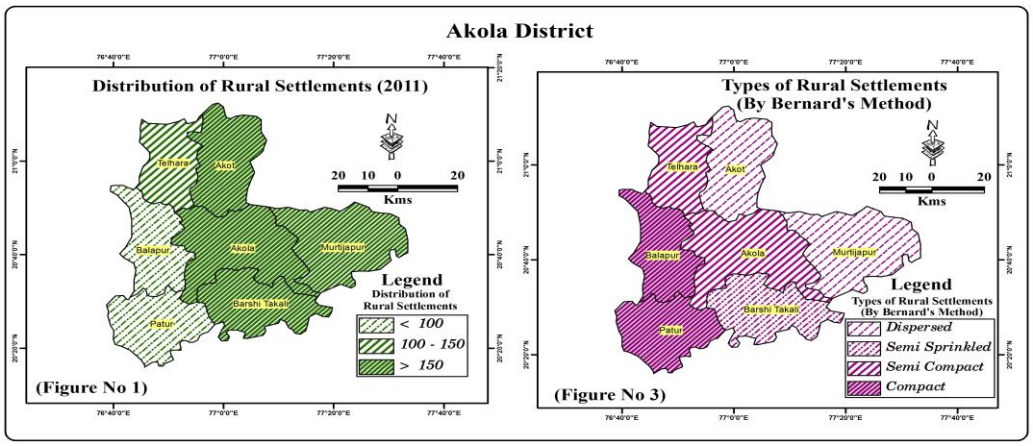
Source – Calculated by Author

Semi Sprinkled Pattern

Only Barshitakali tahsil found the Semi Sprinkled pattern of rural settlement, the 'K' index of this tahsil is found in between 1000 to 1500. These type of settlements are generally in small size and situated near cultivable land. Barshitakali tahsil is totally rural area and small size of rural families. The road connectivity of this tahsil is poor and also poor development of entire rural roads. This region consists total 159 rural settlements and 14.55% rural area.

Semi Compact Pattern

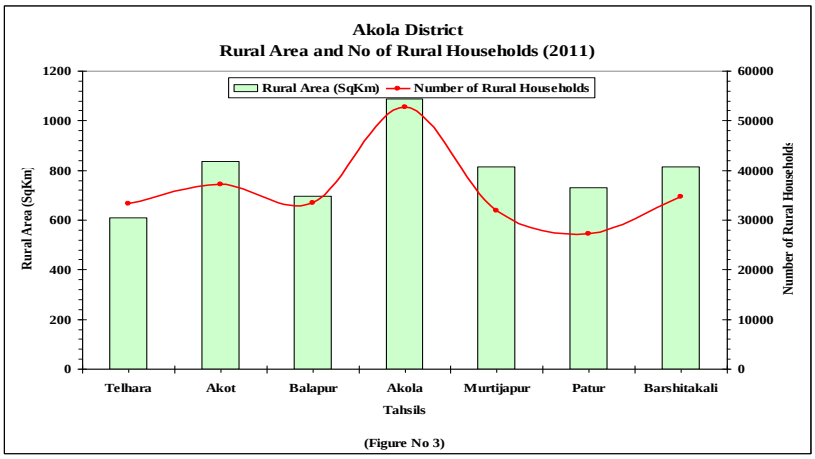
This type of settlements shows the intermediated type between compact and hamleted settlements. Such types of settlements are characterized by a small but compact nuclears around which hamlets are dispersed (Dr Pagar Sanjay, 2021). Semi Compact settlements are mainly found in Akola and Telhara tahsil. The ratio of rural area and rural families are quite higher than other part of the district. Akola is the main tahsil in the district and district head quarter center. The maximum semi compact rural settlements are concentrated near around the city region of Akola as well as Telhara tahsil. The road connectivity and development of rural roads are good compare to other tahsils in the district. The development of MIDC sector in Akola and Telhara tahsil helps to develop the semi compact pattern of rural settlements around in this area. Total 291 rural settlements are situated in this semi compact pattern and covered total 30.36% rural area. The ratio of rural area is found higher in this semi compact settlement pattern.



Compact Pattern

Balapur and Patur tahsil recorded the highest value of 'K' and according to this value these tahsil found the main concentration of compact settlements in their entire rural region. Both Balapur and Patur tahsils have less number of rural settlements and less rural area than other tahsils. However, as the proportion of rural population as well as rural households is higher than the rural area, the population density in this region is found to be dense. The index is found to be the highest in the region as more rural families are concentrated in less areas and fewer villages. Agriculture development in these two tahsils is a bit higher than other tahsils. Also the topography of this area is of plain type and it is nutritious for agriculture. The compact pattern has found total 193 rural settlements with 20.56% rural area of the district.

Figure No 3 shows the Rural area and number of rural households in Akola district.



Conclusions and Suggestions

The type of rural settlements in the study area is not uniform but varies from tahsil wise. The overall study of the settlements in the district shows that the natural factors in the district have had an impact on the development of the rural settlements. The northern part of Akot tahsil is higher and the average height of this tahsil is higher than other tahsils so rural areas are found dispersed in this region. As most of the Akola tahsil is less than 300 meters high and it is the district headquarters, it is a semi-compact type of rural area. Patur tahsil has higher rainfall while Balapur tahsil has higher black soil. The development of transport in Balapur tahsil is also higher in rural areas as compared to other tahsils. Therefore, although Balapur and Patur tahsils have less rural area and number of villages, the concentration of rural families is highest and hence the type of settlement is found to be compact in this region. For the overall development and even distribution of rural areas, it is necessary to plan agriculture according to the geographical conditions of the region. It is also necessary to develop service facilities according to the size of rural areas. This will lead to balanced development of the settlements and reduce the stress on the development of specific settlements.

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Geo Innovation Challenge: Environmental Impact On Coastal Activities In Tamilnadu Coastal Region

Dr. J. Sarala Devi[1] , Dr.J.Nandhini[2]
[1]Guest Lecturer**,** Department of Geography ,Queen Mary's College, Chennai,India., Email id: - devi.saraladevi@gmail.com.
[2]Assistant Professor, Department of Geography, Queen Mary's College.Chennai –Tamil Nadu
Email id: shreenandhini@gmail.com

Abstract

The main objective is to study the coastal activities, pollution and coastal resources to sustain and develop the coastal resources. To analyse the results impacting the coastal resources, coastal activities (7 Activities) and Pollution information assessed for an understanding of environmental importance, ecosystem and biodiversity in Tamil Nadu coastal regions. The coastal areas of TamilNadu has an unusual increasing in coastal activities where environmental impacts like Sewage pollution, industrial pollution, oil population, pesticide pollution, aquacultural pollution of Tamil Nadu coastal region are dominantly seen. This paper tries to sustain the coastal resources and development of such resources to create a healthier ecosystem. The secondary data has been used and adopted the technique like ARCGIS, ERDAS and found out the environmental ecosystem and biodiversity richness and have used spatial analysis of extraction in activities.

Key words: Pollution, Coastal activities, Sustainable, Environmental, Spatial.

Introduction

Coastal zone is a dynamic area with many cyclic processes due to a variety of resource and habitats. Coastal plains and seas include the most taxonomically rich and productive ecosystems on the earth. These enhanced rates of production in an abundance of other life forms including species of commercial importance. "The coastal challenge is a great way to inspire and drive collaboration using geospatial, maritime and meteorological data so that innovators, with the support from our Geovation community, can devise Sustainable Solutions In Order To Tackle Critical Environmental ISSUES. The human and natural systems form a tightly coupled socio – ecological system. Coastal systems are complex interactions of human and climate drivers. A major study was carried out in Tamil Nadu coastal region which has 26 coastal areas. Shoreline defined as the physical interface of land and water is dynamic in nature and provides economic and social security to the coastal habitations.

Aim And Objective: The main objective is to study the coastal activities, pollution and coastal resources to sustain and develop the coastal resources.

1. To identify the hotspot of the polluted area and vulnerability in the Tamil Nadu coastal zone.
2. To analyse the results impacting the coastal resources, coastal activities (7 Activities) and Pollution information assessed for an understanding of environmental importance, ecosystem and biodiversity in Tamil Nadu Coastal Regions.

Methodology: The research design adopted is a combination of qualitative and quantitative methodologies in which secondary sources are very thoughtfully tapped for information and perspectives. The main focuses of the present study are: importance of ecological, pollution and vulnerability. The secondary data

has been used and adopted the technique like ARCGIS, ERDAS and found out the environmental ecosystem and biodiversity richness and have used spatial analysis of extraction in activities.(Fig1.1)

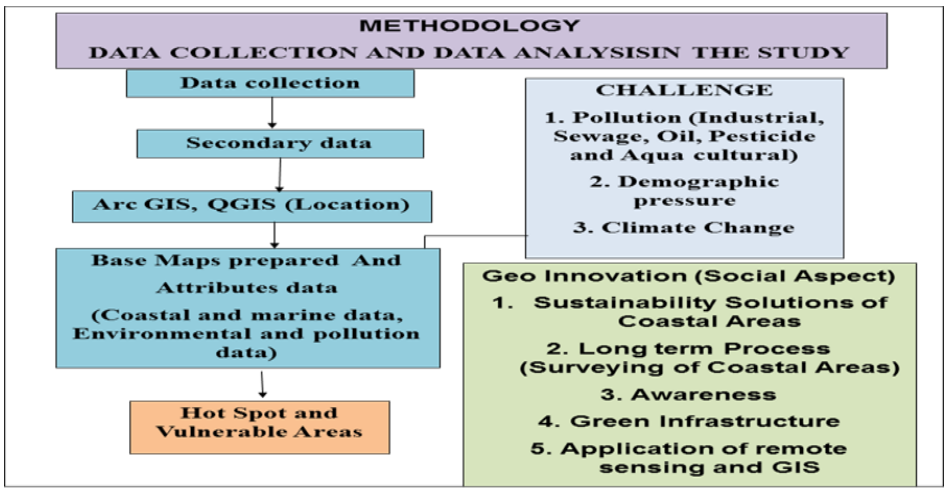

Fig No: 1.1

Study Area

The state of Tamil Nadu extends between the $13^0$05'N latitude and the $80^0$16'E longitude**.** Geographically, Tamil Nadu is situated on the eastern side of the Indian peninsular. The state covers an area about 1, 30,060 Sq.km. Tamil Nadu accounts for about for 4.0 percent of India's geographical area. It is the 11^{th} largest state in the country but in terms of population, it ranks sixth is in the country consequently. (Fig1.2)

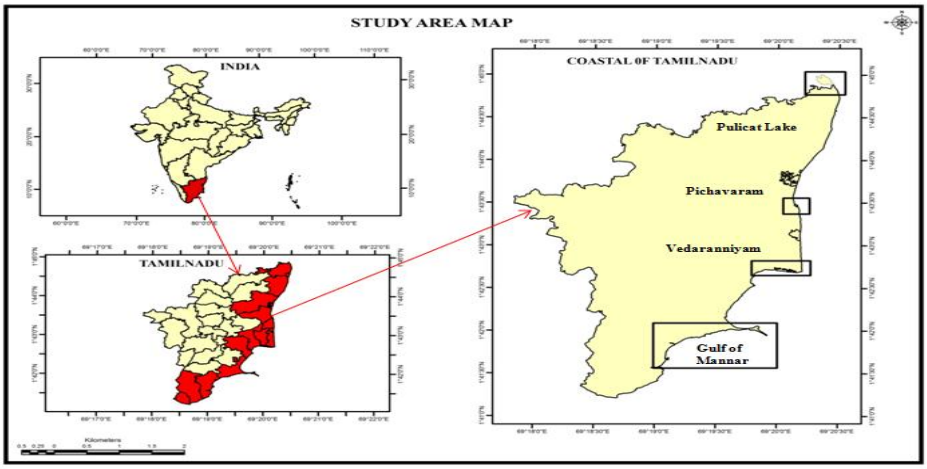

Fig No: 1.2

Result And Discashion

Coastal Activities In Tamilnadu Region

The Major coastal activities responsible for coastal and marine pollution in Tamil Nadu are discharge and disposal of treated (1.8mld) untreated sewage and industrial wastes, discharge on industrial coolant waters, harbour activities such as dredging, cargo handling, dumping of ship wastes, spilling of cargoes such as chemicals and metal ores, oil transport, fishing activities such as mechanized fishing vessels movements, draining of waste oil, painting of fishing vessels, scrapping of metal lining of fishing vessels, dumping of wastes and trash fishes, oil exploration and oil refining activities, recreation and

tourism activities, salt production etc. The major cities situated along the Tamil Nadu coast are Chennai, Cuddalore, Pondicherry, Nagapattinam and Tuticorin (Table 1.1). Apart from these, (Thiruvallur, Kanchipuram, Villupuram, Pudukottai, Thanjavur, Thiruvarur, Ramnad, Thirunelveli and kanyakumari) more than 500 fishing villages and small towns are also situated on the coast. The domestic waste discharged into the sea from most of the urban and rural areas are untreated. The industries at Ennore-Manali are using a wide variety of raw materials and discharge waste products into the air, water or land as gaseous emissions, liquid effluents and sludge, respectively. Manali in Chennai, Cuddalore and Tuticorin emerged as industrial hotspots for air pollution. Ennore creek is heavily polluted due to discharge of untreated sewage from Chennai. Coastal areas such as Chennai, Cuddalore, Nagapattinam and Tuticorin did not fare any better. In Cuddalore the major problem confronted in the town is due to the development of Cuddalore chemical complex by the SIPCOT near the coast. The places with such activities and their magnitude are presented in TABLE 1.1 shows the distribution of oil pollution of Tamil Nadu coast. Overall, the coastal waters of Tamil Nadu are less polluted compared to other coastal states. Shrimp farming are done in coastal districts of Chengalpattu, Cuddalore, Thanjavur, Nagapattinam, Tiruvarur, Pudukottai, Ramanathapuram, Tuticorin and Kanyakumari.

Table:1.1 Coastal Activites Of Pollution In Coastal Region

The Thiruvarur district highly hot spot pollution of aqua cultural waste in the resource activities.

S.No	Pollution	Activities	Districts
1	Sewage pollution	Sewage waste, Domestic waste	Chennai, Thiruvallur, Kanchipuram, Villupuram, Cuddalore, Nagapattinam, Pudukottai, Ramnad, Tuticorin, Thirunelveli, kanyakumari,Thanjavur, Thiruvarur
2	Industrial pollution	Nuclear waste, textile , tannery, industrial waste	Chennai, Thiruvallur, Kanchipuram, Villupuram, Cuddalore, Pudukottai, Tuticorin, Thirunelveli, kanyakumari
3	Oil pollution	Oil and fish	Chennai, Pudukottai
4	Pesticide pollution	Chemical waste, thermal waste	Chennai, Thiruvallur, Kanchipuram, Villupuram, Cuddalore, Tuticorin,
5	Aqua cultural pollution	Muthupet swamp, aqua cultural waste, fishing waste, fishing harbour	Chennai, Villupuram, Cuddalore, Nagapattinam, Pudukottai, Ramnad, Tuticorin, kanyakumari, Thanjavur, Thiruvarur.

Remaining twelve districts (Chennai,Thiruvallur, Kancheepuram, Villupuram, Cuddalore, Nagapattinam, Pudukottai, Thanjavur, Ramanathapuram, Thirunelveli, Tuticorin, and Kanyakumari) highly hot spot pollution of domestic waste in the commercial activities of Tamil Nadu coastal region. The recreation activities are kancheepuram, Nagapattinam, Tuticorinand and Kanyakumari in the highly hot spot pollution of tourism activity. The industrial activities are Chennai, kancheepuram, Villupuram, Cuddalore,

Thiruvarur,Pudukottai, Tuticorin and Thirunelveli in the highly hot spot pollution of Tamil Nadu coastal region. One of the major four activities hot spot pollution in Tuticorin district. They are thermal, domestic sewage, industrial, chemical, salt, and tourism and aqua cultural waste. The potential hot spot identified in Villupuram, Nagapattinam, Thanjavur, Pudukottai and Thirunelveli.

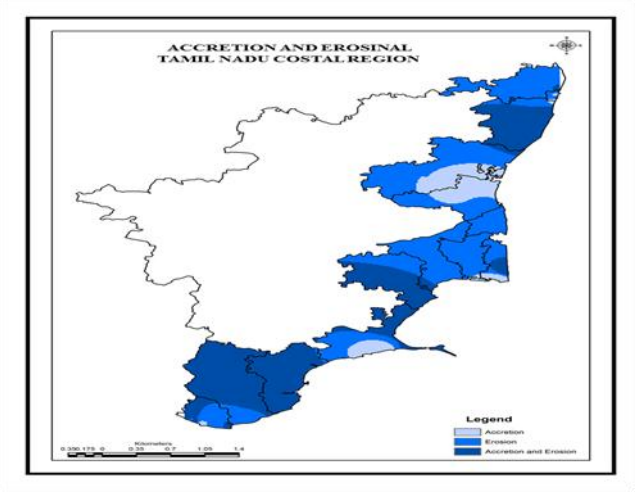

Fig No: 1.3

The coastal erosion in Tamil Nadu region areThiruvallur (Pulicat), Chennai (Royapuram, Elliot Beach), Kancheepuram (Mahabalipuram),Cuddalore (South,), Nagapattinam (Point Calimere) , Rameswaram (Ammapattinam, Kilakarai, Manakudi,), Tuticorin (Thiruchendur)and Kanyakumari (Muttom). (Fig No 1.3) The coastal accretion and erosion in Tamil Nadu region are Chennai, Kancheepuram, Nagapattinam, Tuticorin, Rameswaram and KanyakumariGulf of Mannar.Coastal erosion in Tamilnadu are Ennore, Mahabalipuram, Rameswaram and Kanniyakumari. Both erosion and accretion are taking place in Gulf of Mannar and Rameswaram. Low lying area like Nagapattinam has been identified as potential areas for inundation due sea level rise. Accretion or erosion sites along Tamil Nadu coast are alarming in nature with respect to land, lives and properties.

Conclusion

The coastal areas of TamilNadu has an unusual increasing in coastal activities where environmental impacts like Sewage pollution, industrial pollution, oil population, pesticide pollution, aquacultural pollution of Tamil Nadu coastal region are dominantly seen. This paper tries to sustain the coastal resources and development of such resources to create a healthier ecosystem. The first component, the resource activities in the study, is clearly accretion area in vedaranyam coast in Nagappatinam district (swamp, mangroves and Cauvery River). The second component, the recreational and commercial activities in the study is clearly erosion area in Chennai beach in Chennai district (harbour, domestic sewage and marina beach). The third component, the industrial activities in the study is clearly accretion and erosional area in Ennore, Rameswaram and Kanyakumari (oil, chemical etc).

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A review on biodiversity of Scarabaeid beetles in India

P.S. Ambdekar[1] ,Dr. S.A. Saraf[2]
[1]Department of Zoology, Government College of Arts and Science Aurangabad
[2]Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Abstract

The current review eamines 17 research articles about Scarabaeid beetles Biodiversity, which were presently collected from all over India. It includes classification, methodology, collection, characteristics, identification, distribution, dimension, conservation status and trouble. This review summarizes the status, biodiversity of Scarabaeid beetles in India.

Keywords : Scarabaeid beetles, Biodiversity, Coleoptera, India, Species.

Introduction

Coleoptera (*Gk. Coleos*-sheath, *ptera*-wing) are largest group of organisms at order level and are comprised of beetles. The family Scarabaeidae is one of the largest, most diverse family. It is divided into two groups, Laparosticti (Dung beetles) and Pleurosticti (Chafers) based on position of posterior spiracles on the body. Scarabaeid beetles live in variety of different habitat, desert, grassland, agricultural land, woodland. The family includes 33,504 species, out of which about 2,211 species are reported from India. Scarabaeid beetles present remarkable species diversity and striking morphological variation. Biodiversity of insects in forestry parlance can be summarized with two of its components, species richness and evenness. The "richness" indicates the number of species present in designated area whereas "evenness" stands for the relative abundance of each species. This review focuses on a few specific Scarabaeid beetles studies on scarab beetles, dung beetles in general that are related to Biodiversity. Many of research papers collected provide rewarding information that will help our recognition for product group in advising Biodiversity methods for scarabaeid beetles in India.

Biodiversity

During the investigation, Scarabaeid beetles were discovered in and around Solapur City of Maharashtra was collected during 2025-2017. Surveyed and collection of beetles were carried out at one month interval in morning and evening. The study revealed, 59 species of scarabaeid beetles belonging to 38 genera of 8 subfamilies were reported. Subfamily Scarabaeinae was dominant with 25 species followed by subfamily Rutelinae, Cetoniinae, Melolonthinae, Dynastinae, Aphodinae, Hybosorinae and Geotrupinae with 9, 9, 8, 4, 2, 1 and 1 species respectively. Rutelinae and Cetoniinae was the family the most individuals recorded. (Aland S R. 2019)[1]. Study reported from Durgapur, West Bengal, India from January 2012 to December 2012. In this study, A total 9 families were reported. Durgapur has rich floral diversity that supports large growth of fauna. The present study demonstrate that college campus and township area much diverse than wetland. Each of the site shows highest diversity in June-July (monsoon). This study suggest that an industrial town with high pollution threats, Durgapur can nonetheless harbor a large number of beetles. (Moitreyee Banerjee. 2014)[2]. Around the Kanger Valley National Park, Chhattisgarh, India, studies on the scarab beetle fauna found 22 species belonging to 10 genera and 6 subfamilies. Family Scarabaeidae were identified and recorded for the first time from KVNP out of total 22 species, 15 species are termed as dung beetles and categorized into three major nesting strategies; dwellers, rollers and tunnelers. The species included in the subfamilies; Rutelinae, Dynastinae, Melolonthinae and Cetoniinae. This study on faunal account of scarab beetles of KVNP will undoubtedly help in the exploration of rich faunal resources of Chhattisgarh. (Kailash Chandra *et al*.,2012)[3]. As a result of this investigation, 94 species belongs to 9 subfamilies; Subfamily Hybosorinae was dominant with 2 species followed by subfamily Orphinae, Chironinae, Aphodiinae, Scarabaeinae, Melolonthinae, Rutelinae, Dynastinae And Cetoniinae with 1, 4, 5, 66, 12, 1, 5 respectively. This paper presents a checklist of scarabaeid beetles from Madhya Pradesh. (Kailash Chandra. 2000)[4]. A total 43 species of beetles belongs to 15 genera were collected from study locations in the Cattle grazing lands of Phaltan Tahesil, Satra, Maharashtra seven site were selected during June 2010 to March 2013. Coprinae was dominant subfamily with 32 species followed by Aphodiinae, Scarabaeinae and Geotrupidae with 7, 3, 1 species respectively. The important genera in this region is Onthophagus followed by Aphodius, Gymnopleurus, Onitis, Catharsius, Helocarpis with 11, 7, 6, 5, 3, 2 species respectively. (Gaikwad A R. 2015)[5]. During the survey, present study gives an idea of Scarab beetles in Nagaland study area that revealed the biodiversity of 62 species belonging to 34

genera under 5 subfamilies were studies. i.e. Scarabaeinae, Melolonthinae, Rutelinae, Cetoniiae and Dynastinae under the family Scarabaeidae from Nagaland state. This study provides basic information and inventory on present status, composition and diversity of scarab beetles in Nagaland. There is also need to be protected work resulted in database of scarabs which will help in future work for its conservation, preservation and addition of the local biodiversity of scarab beetles. (Joyjit Ghosh *et a*l., 2020)[6]. A total 24 Coleopteran species from 3 families, 6 subfamilies were recorded during investigation from Nashik, Maharashtra, India. Family Scarabaeidae showed prominent species richness and abundance amongst the three. Subfamily Rutelinae and Scarabaeinae belonging to this family was dominant with 7 and 6 species respectively. Whereas, both subfamilies Dynastinae and Melolonthinae were 2 species each *Adorectus* belonging to family Scarabaeidae and Subfamily Rutelidae was the richest genera with 6 species. *Anomala ruficapilla* belonging to same subfamily showed presence as a singleton sp. Varied genera were note in Subfamily Scarabaeinae. Species distribution of dung beetle fauna in various region was evaluated. The outcomes showed that the diversity of the dung beetle fauna of Nashik district is very high. (Pranil Jagadale *et al*., 2017)[7]. The present study, documented, A total 50 species represented by 25 genera, 17 tribes, 7 subfamilies belonging to Hybosoridae, Geotrupidae and Scarabaeinae were documented from the surveyed areas. (Nortern, Western Ghats, Maharashtra). Among the studied specimens the subfamily Scarabaeinae emerged as the dominant subfamily with 22 species followed by Melolonthinae (8 species), Rutelinae (8 species), Cetoninae (6 species), Dynastinae (4 species) and Hybosorinae and Dynastinae with 1 species each. The dominant subfamily Scarabaeinae was represented by 4 tribes, i.e., Onthophagini, Coprini, Oniticellini, Onitini and Gymnopleurini. In their study on diversity of Scarabaeid beetles of Barnawapara Wildlife Sanctuary *Onthophagus* it is most diverse genus. (Aparna Kalawate. 2018)[8]. During the investigation, 99 species belonging to 60 genera under 13 families of Coleoptera from Thar desert of Rajasthan during May 2003-June2003. Majority of the specimens were collected during the day from agricultural as well as barren land or sand dune areas by the free sweeping method. Some group of beetles were collected during night with the help of screen light trap with a strong source of white light. This paper covers all the district of Thar desert. A total 22 species belonging to Scarabaeidae family. (Kazmi S I *et al*., 2004)[9]. The present work aim to study scarabaeid beetles biodiversity at selected site in Nadia district, West Bengal, with a preliminary checklist from India. A total 78 scarab species and among them 22 are *Onthophagus* species. All these are new reported for the district. From the of the present study, all the recorded taxa are provided with distribution, material examined, diagnostic characters and remarks. (Kharel Bhim *et al*., 2020)[10].

The present study was conducted to diversity of scarabaeid beetles in and around Amba Reserved Forest of Western Ghat reegion Kolhapur District, Maharashtra. During the study period, 59 species of scarabaeid beetles from 38 genera of 8 subfamilies were reported. The maximum number of species belongs to the Subfamily Rutelinae and Cetoniinae, which was represented by 9 species. Subfamily Scarabaeinae was dominant with 25 species followed by Subfamily Rutelinae, Cetoniinar, Melolonthinae, Dynastinae, Aphodinae, Hybosorinae and Geotrupinae with 9, 9, 8, 4, 2, 1 and 1 species respectively. This study will be helpful to examine role of coprophagous and phytophagous beetles in the forest ecosystem. It is also helpful to study organization composition, diversity and their elevation. (Amol B Mamlayya *et al*., 2012)[11]. The present study, conducted at four study sites at South Indian states, viz., Andhra Pradesh, Karnataka, Kerala and Tamilnadu. The occurrence of the beetles was influenced by the copping pattern, the soil type and the geographical co-ordinates. A total 17 species representing 5 subfamilies were recorded from study area. The percentage distribution of scarabaeid beetles in across the different states indicates that, Scarabaeinae (17.64%), Melolonthinae (38.23%), Cetoniinae (17.66%), Rutelinae (20.58%) and Dynastinae (5.88%) respectively. In addition, environmental factors, salinity, temperature, moisture, and wind velocity play a crucial role on the development, diversity and ecology of scarabaeids. Melolonthinae had the most species and Dynastinae has fewest. (Murthy K S. 2020)[12]. A total 56 species belonging to 4 subfamilies, Melolonthinae, Rutelinae, Cetoniinae and Dynanstinae were recorded from the eight locations in the Northwestern Himalayan region of Himachal Pradesh. In the present study 13,569 adults of scarabaeid beetles were recorded from individual composition. The five most dominating species were *B. coriacea, A. lasiopygus, A. lineatopennis, M. insanabilis and H. longipennis.* Melolonthinae was most dominant with 29 species (51.79%) of the total species, Rutelinae with 19 species (33.93%). Anomala was the most effective genus with 17.86% of total species followed by Brahmina (16.07%). Scarab beetles were collected in June and July. Result of this study revealed scarabaeid beetles is much diverse in Himalayan region. (Mandeep Pathania *et al*., 2015)[13]. During the study period 16 species belonging to 9 genera, 2 subfamilies viz., Scarabaeinae and Aphodiinae and 1 family Scarabaeidae and superfamily Scarabaeoidea were studied from Sahaspur, Uttarakhand (India), during the month of October

2016-march 2017. Species diversity of the scarab beetles of Uttarakhand is greatest extent. 4 species *Onthophagus cervus* (Fabricius), *Aphodius rufipes* (Linnaeus), *Onthophagus mopsus* (Fibricius), *Aphodius erraticus* (Linnaeus) are new record to the fauna of Uttarakhand. This study focused on species divercity of the scarab fauna in the region of Sahaspur, Dehradum, Uttarakhand. (Amar Singh *et al*., 2017)[14].

A total 26 species of scarab beetles belonging to 14 genera and 8 subfamilies were recorded from study locations in the Kolkas Region of Melghat Tiger Reserve (MTR), District Amravati, Maharashtra, India during May to Octomber 2009. The species included in the subfamilies; Geotrupinae, Hybosorinae, Orphinae, Scarabaeinae, Melolonthinae, Rutelinae, Cetoniinae and Dynastinae with 1, 1, 1, 15, 2, 2, 2, 2, 1 respectively. Scarabaeinae was the most powerfull subfamily in the species rankness. *Onthophagus* Latreille, 1802 is the dominant genus observed in the study area. (Thakare V G *et al*., 2009)[15].

The present study, was conducted to Scarabaeid beetles in different 5 farming Areas in Nepal. A total scarabaeid beetles, representing 29 genera and 77 species, were collected by night traps %), Melolonthinae(40.55%) Dynastinae (5.44%) and Cetoniinae (0.3%) with 38, 26, 9 and 4 species from 8, 12, 6 and 3 genera 4 species from 8, 12, 6 and 3 genera, respectively. The highest number of beetles collected were from the subfamily Ruteline and the lowest number collected comes from the Cetoniinae subfamily. Relatively large size beetles observed during February to June and small body size beetles observed during July to January. This study has attempted to explore the species diversity and richness of scarabaeid beetles. (Yubak D J *et al*., 2009)[16]. During the investigation, 5863 specimens of scarab beetles were captured in the aproforest area. In crop area, 2314 scarab beetles specimens were collected representing 41 species. Similarly 3549 scarab beetles specimens were collected belonging to 57 species in the forest area. When diversity of both the area was compared, it was resulted scarab beetles was more diverse in the forest area than crop area. *Anomola dorsalis* has more population in agroforest area as well as crop area. This data obtained during May-October 2002 were studied from Faisalabad. (Kashif Zahoo *et al*., 2003)[17].

Conclusion

Scarabaeid beetles diversity is a large world wide distributed group of beetles. The review made to combine all information of biodiversity of India. The biodiversity in the different fauna were studied and analysed by different authors. Report have been made that the biodiversity of scarabaeid beetles have been correlates with prohibit of growth and development of these beetles. Review have also been made that biodiversity of scarabaeid beetles are reducing due to nonagriculture. Still and all, limited works are obtainable to known effect of urbanization regarding their diversity as well as their phylogenesis activities. Therefore, the research of scarabaeid beetles in India nacessory to be treated due to their large impact on biodiversity.

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A Philosophical Review of Basaveshwara Vachana Sahitya

Veerbhadrayya P Hiremath[1], Dr. M. B. Dalapati[2]
[1]Research Scholar, Karnataka University, Dharwad
[2]Associate Professor, Research Guide , Karnataka Arts College, Dharwad

Abstract

Human problems are more complicated today than ever before. No doubt man has acquired unprecedented knowledge and power; but these have caused unparalleled changes and, as a result, life has become confusion worse confounded. Everything about us is in a state of flux. In this predicament, the need for spiritual ministration is more keenly felt today than ever before in our history. The great saints and poets of the world can teach us how to acquire the spiritual strength we need to pull ourselves out of the rut of daily humdrum circumstances. Basaveshwara or Basavanna, of Karnataka, was a saint, a poet and an ardent social reformer, and is among the great spiritual teachers of India. Basavanna anticipated many a modern prophet like Swami Dayananda, Swami Vivekananda and Gandhiji. He may rightlybe called the prophet of a New Era in Karnataka—nay, in India. Before taking up the study of the story of his life it wouldbe helpful to have an idea of the religious and social conditions of the land in his time and of the contemporary political situation.

Keywords: Bhakti-Bhandari, A Revolutionary Saint, Kayak

Introduction:

In the context of the social changes and religious awakening in modern India, the message of Basaveshwara acquires a special significance. Today Indian society, with its ideas of democracy and nationalism, and its emphasis on the spread of education and on a scientific outlook, is reshaping itself. It is influenced by the main current of world thought. Our thought- patterns are changing so radically that it seems impossible for some of our old values, institutions and customs, like castes and creeds and rituals, and for our blind beliefs to survive. Basavanna lived eight hundred years ago but he strikes us as thoroughly modern and practical, and so his teaching has relevance today. The picture of Indian society would have been quite different if only that teaching had been followed. In the core of his religion, Basavanna anticipated many a modern prophet like Swami Dayananda, Swami Vivekananda and Gandhiji. He may rightly be called the prophet of a New Era in Karnataka—nay, in India. Before taking up the study of the story of his life it would be helpful to have an idea of the religious and social conditions of the land in his time and of the contemporary political situation. Before taking up the study of the story of his life it would be helpful to have an idea of the religious and social conditions of the land in his time and of the contemporary political situation. Since the beginning of history, Karnataka has kept her mind open to all religions of the world. From epigraphically evidence it is clear that long before the Christian era the Aryan religion had made an impact throughout the country. It received Royal patronage. Along with this Hindu religion, indigenous forms of worship like that of the cobra, or a particular tree or several female deities also seem to have prevailed in ancient Karnataka. Then came Jainism and Buddhism. But Buddhism never gained ground and popularity here as in north India; compared with Jainism it soon became decadent. Jainism was able to secure patronage from almost all the major dynasties that ruled Karnataka. Hence its contribution to Karnataka culture is rich At the beginning of the twelfth century came Ramanuja, who propagated Vishishtadwaita. He left Tamil Nadu, because of the persecution of Vaisnavas there by the Chola King. True to its tradition of freedom, Karnataka welcomed him as it had welcomed Shankara earlier. The Hoysala King Vishnuvardhana became his disciple. From then the influence of Jainism began to wane. Vedic religion asserted itself once again. But by this time, in spite of the teachings of the Acaryas like Shankara and Ramanuja, Vedic religion had deteriorated into dogmatic rigidities. Even the splendid vision of the Upanishads was dimmed by sectarian customs. Blind beliefs and meaningless and superstitious rituals had become parasitic growths on society.

The cult of sacrifice was widely prevalent. The system of Caturvarna, the fourfold division of society into the Brahmins, the Kshatriyas, the Vaisyas and the Sudras might have done good in the beginning, when its spirit was properly understood. But in course of time it led to a fragmentation of society. In the original form it might have been a doctrine of social solidarity. But ultimately it ended in the decadent caste-system, the essential principle of which is divisionbased on birth—the abhorred system that has destroyed all ideas of unity. A sharp distinction was made between the higher classes and the Sudras and even these groups were divided into innumerable sub-castes and sub-sects. Religion became the

Monopoly of the privileged few. Vedic knowledge was denied to women and the Sudras. All the dharmasastras were written or interpreted in support of this view and thus social injustice received the stamp of religious sanction. Added to this was the ignominy of untouchability. The plight of the untouchables was miserable. They were treated worse than animals. Hindu society, in spite of all its high cultural traditions and spiritual splendours, had failed miserably to meet the needs and aspirations of the common people. It was at this hour of need that Basaveshwara appeared on the scene. But by this time, in spite of the teachings of the Acaryas like Shankara and Ramanuja, Vedic religion had deteriorated into dogmatic rigidities. Even the splendid vision of the Upanishads was dimmed by sectarian customs. Blind beliefs and meaninglessand superstitious rituals had become parasitic growths on society.The cult of sacrifice was widely prevalent. The system of Caturvarna, the fourfold division of society into the Brahmins, the Kshatriyas, the Vaisyas and the Sudras might have done good in the beginning, when its spirit was properly Understood. But in course of time it led to a fragmentation of society. In the original form it might have been a doctrine of social solidarity. But ultimately it ended in the decadent caste-system, the essential principle of which is division based on birth—the abhorred system that has destroyed all ideas of unity. A sharp distinction was made between the higher classes and the Sudras and even these groups were divided into innumerable sub-castes and sub-sects. Religion became the Monopoly of the privileged few. Vedic knowledge was denied to women and the Sudras. All the dharmasastras were written or interpreted in support of this view and thus social injustice received the stamp of religious sanction. Added to this was the ignominy of untouchability. The plight of the untouchables was miserable. They were treated worse than animals. Hindu society, in spite of all its high cultural traditions and spiritual splendors, had failed miserably to meet the needs and aspirations of the common people. It was at this hour of need that Basaveshwara appeared on the scene.

Bhakti-Bhandari

Basavanna made a name as the most efficient Bhandari—the chancellor of the State Exchequer—and won the admiration of King Bijjala of Kalyana. But in the realm of spiritual pursuit he was Bhakti-Bhandari, the custodian of the precious treasure of devotion. Among the Sharanas we find persons of different nature. Allama Prabhu whose adventurous spirit was dominated by knowledge, held radical views and lived a life of asceticism and renunciation. In Channabasavanna were found a sharp intellect and profound scholarship. Siddarama was mainly devoted to work and selfless service, Karma-marga. So also Akkamahadevi, Madivala Machayya and others had each his or her own marked individuality. Among them Basaveshwara was considered as a living embodiment of devotion. "Basava is the rich harvest of Bhakti," says Channabasavanna, "Basava is Bhakti-incarnate, and joy-incarnate," declares Siddarama. Madivala Machayya in one of his vacanas suggestively said: Whichever way you look Behold the creeper: Basavanna;You pick it up and lo

A cluster, the Linga;
Pick up the cluster, and lo,
The juice of Bhakti brims up in it.

Sati-pathi Bhava—the spirit of bridal love—is another modeexpressing the intense mystic surrender to Kudala Sanga.

I am like a woman bathed in turmeric,
Arrayed all over in gold.
Who lost her husband's love.
I am like one who has Besmeared himself with ash

And wound his neck with beadsAnd lost your love, O God; Within our clan there's none Who, falling into sin, yet lives! Protect me as you will O, Kudala Sangama Lord.

Being Sharana—the wife, he prays to the Lord, the Linga. This 'Sharana sati, Linga pati' attitude plays an important role in the mystic path of the Sharanas.

Apart from these five modes of Bhakti explained above, nine other features such as Shravana (hearing), Keertana(singing),Smarana (recollection), etc. have also been referred to. To hear the glory of the Divine, to sing hymns in His praise through all those, the Bhakta evolves his spiritual abilities. These have been effectively expressed in some of the vacanas of Basavanna. Besides, the path of Satsthala, followed by Basavanna, has eight aids called **Astavarnas**—Guru, Linga, Jangama, Prasada, Padudaka, Vibhuti, **Rudrakshi and Mantra**—which help the Bhakta to ascend the six steps. He adopted these Ashtavarnas in such a way that they became significant symbols of inward purity and invulnerablearmor, to protect him in his onward march towards the Divine. He surrendered his body, mind and self to Guru, Linga and Jangama respectively. This is called 'Trividha-dasoha', Tripleworship.

A Revolutionary Saint

The Vacanas uttered during the spiritual pursuit of Basaveshwaraare the living record of intuitive experience and a course of conduct to aid spiritual realization of the most exalted type. It is not an intellectually spun out system of thought; nor is it dry as the philosophy of scholastics. It has a distinct aim and an admirable feature of the gospel of Divine Love which embraces both thought and action. His Bhakti strikes a balance between *pravrtti* or the participation in worldly activity, and *nivrtti* or the withdrawal from all activity. It is a perfect balance between the outer life and the inner life of man. It is a rare confluence and a happy synthesis of all the three aspects of human personality — thought, feeling and action. Consequent upon this social reformation Basava had to face terrible opposition from reactionary forces. In spite of it he was able to produce momentous results because he was not a preacherof any localised social reform. His social reformation was based on love and love alone. His love for humanity, especially for the lowly and the lost, for the downtrodden and the degraded, knew no limits. He identifies himself with the common man, and even goes to the extent of saying:

When Kakkayya the tanner my father is, And Cennayya grandfather Am I not saved?

It is this inexhaustible love and compassion that made himthe saviour of humanity.

Love and compassion are the watch-words of his philosophyand religion. One of his famous Vacanas says: What sort of religion can it bewithout compassion?

Compassion needs must betowards all living things; Compassion is the root Of religious faith;

Lord Kudala Sanga does not care for what is not like this.

The Message of Kayaka

The term 'Kayaka' means honest manual labour, but it is much more than labour for one's living. The concept of 'Kayaka' may be said to be a signal contribution of Basavanna to Practical Philosophy. It acquired a new dimension in the way it was preached and practised by Basavanna and other Sharanas. Basavanna breathed into it a perfect co-ordination of thought and action. And he himself was a man of thought as well as of action. The concept is so comprehensive that it is capable of universal application.

Conclusion:

And as he suggests in another Vacana light becomes a throne to light. Light mingles with light. Thus Basavanna can express even such deep and subtle thoughts and experiences, in plain and simple but powerful and suggestive words which are able to embody and communicate the vision of life.

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