A Study and Analysis of Laptop Utilization Using Tree Based Classification Algorithms

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Abstract

Nowadays Laptop is not only used by professionals, but also by students. The laptops are used by the students for education, coaching, browsing for information, communication and also for playing games and watching movies. The handling of laptop in the classroom can guide to optimistic education outcomes. This study aims to examine student's perceptions related to the usage of laptop by analyzing its utilization characteristics using tree based classification algorithm. The data is collected from 100 postgraduate women students. The analysis has been taken from the college students by supplying questionnaires. The primary data which is collected from the students has been analyzed by the statistical tool and compared with three decision tree based algorithm namely J48, Random Tree and Rep Tree to determine the result by using Weka tool. The results show that the efficiency and accuracy of Random Tree is better than J48 and REP Tree.

Key words : Tree based classification, laptop utilization, J48, Random Tree, Rep Tree.

Introduction

Today Computers/Laptops make it too easy to store data. Inexpensive disks and online storage make it too easy to postpone decisions about what to do with all collected stuff; we simply get more memory and keep it all. The World Wide Web (WWW) overwhelms us with information; meanwhile, every choice we make is recorded. As the volume of data increases, inexorably, the proportion of it that people understand decreases alarmingly. Lying hidden in all this data is information [1].

Laptops are used by everyone in different fields. Nowadays the main users of the laptops are college students. They used it in a variety of environments such as preparing the assignments, project work, programming purpose and for personal multimedia. The paper is based on how the laptop is utilized by the students.

The main objective of the research is to find how the technical resource is utilized by the students. The information is collected from 100 students who are using laptops. From this data it is possible to identify the usage of laptops among students. This process is done by using the classification algorithm in data mining using Weka tool. The research is used to analyze for what purpose the students are using laptops more, whether for education or entertainment or internet usage. Nearly seven classes have been divided to separate the students' variety how they spend the valuable time in laptops.

1.1 Some standards and terms for Accuracy Measure:

The accuracy (AC) is the proportion of the total number of predictions that were correct.

1. True positive (TP) is the proportion of positive cases that were correctly identified.
2. False positive (FP) is the proportion of negative cases that were incorrectly classified as positive.
3. Precision and recall: Precision is the fraction of retrieved instances that are relevant, while recall is the fraction of relevant instances that are retrieved. Both precision and recall are therefore based on an understanding and measure of relevance. Precision can be seen as a measure of exactness or quality, whereas recall is a measure of completeness or quantity. Recall is nothing but the true positive rate for the class [2] [3].
4. F-measure (also known as F1 or F-score) is a measure of test's accuracy. It considers both the Precision and the Recall of the test to compute the score. It can be interpreted as a weighted average of the Precision and the Recall, where 1 is its best value and 0 its worst. The F-measure only produces a high result when Precision and Recall are both balanced, thus this is very significant.
5. ROC Area: A Receiver Operating Characteristics (ROC) curve is a technique for visualizing, organizing and selecting classifiers based on their performance.

2. Literature Survey

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3. Tools And Algorithms Applied

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WEKA is a data mining system developed at the University of Waikato in New Zealand that implements data mining algorithms. WEKA is a state-of-the-art facility for developing machine learning (ML) techniques and their application to real-world data mining problems. It is a collection of machine learning algorithms for data mining tasks. The algorithms are applied directly to a dataset. WEKA implements algorithms for data preprocessing, classification, regression, clustering, association rules; it also includes a visualization tools. The new machine learning schemes can also be developed with this package. WEKA is open source software issued under the GNU General Public License [4].

3.2 SPSS Tool

SPSS (Statistical Package for the Social Sciences) has now been in development for more than thirty years. Originally developed as a programming language for conducting statistical analysis, it has developed into a complex and powerful application with now uses both a graphical and a syntactical interface and provides dozens of functions for supervision, analyzing, and presenting data.

3.3 Classification

Classification may refer to categorization, the process in which ideas and objects are recognized, differentiated, and understood. An algorithm that implements classification, especially in a concrete implementation, is known as a classifier. The term "classifier" sometimes also refers to the mathematical function, implemented by a classification algorithm that maps input data to a category. In the terminology of machine learning, classification is considered an instance of supervised learning, i.e. learning where a training set of correctly identified observations is available. Classification is a data mining algorithm that creates a step-by-step guide for how to determine the output of a decision based on the input, and to move to the next node and the next until one reach a leaf that tells the predicted output [5].

The following gives the short introduction of various decision tree algorithms.

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J48 Algorithm can predict both 'nominal' and 'numeric' attribute values. J48 algorithm uses 'most relevant attribute' from the dataset to determine the prediction values, thus it's better to have all the attributes rather the only relevant attributes. Using all the data set for J48 Algorithm, the prediction efficiency increases. J48 Algorithms visualizes result in the form of 'Decision Tree', where most relevant attributes are used for prediction of particular attribute's future-instance value. Using this tree rules J48 Algorithm can be formed.

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Random Trees are essentially the combination of two existing algorithms in Machine Learning: single model trees are combined with Random Forest ideas. Model trees are decision trees where every single leaf holds a linear model which is optimized for the local subspace described by this leaf. Random Forests have shown to improve the performance of single decision trees considerably: tree diversity is generated by two ways of randomization. First the training data is sampled with replacement for each single tree like in Bagging. Secondly, when growing a tree, instead of always computing the best possible split for each node only a random subset of all attributes is considered at every node, and the best split for that subset is computed. Such trees have been for classification Random model trees for the first time combine model trees and random forests. Random trees employ this produce for split selection and thus induce reasonably balanced trees where one global setting for the ridge value works across all leaves, thus simplifying the optimization procedure. [6] [7] [8]

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Rep Tree uses the regression tree logic and creates multiple trees in different iterations. After that it selects best one from all generated trees. That will be considered as the representative. In pruning the tree the measure used is the mean square error on the predictions made by the tree. Basically Reduced Error Pruning Tree ("REPT") is fast

decision tree learning and it builds a decision tree based on the information gain or reducing the variance. REP Tree is a fast decision tree learner which builds a decision/regression tree using information gain as the splitting criterion, and prunes it using reduced error pruning. It only sorts values for numeric attributes once. Missing values are dealt with using C4.5's method of using fractional instances. The example of REP Tree algorithm is applied on UCI repository and the confusion matrix is generated for class gender having six possible values. [9] [10] [11].

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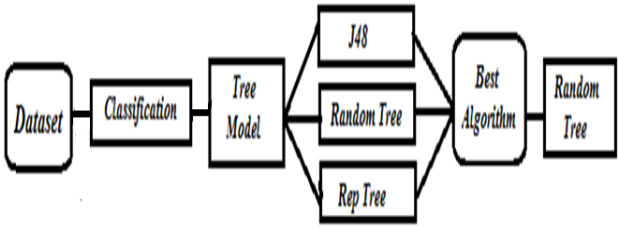

Figure1. System Architecture of Classification Algorithms

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Dataset Name	Number of Attributes	Number of Records/Instances
Laptop Utilization	31	100

The attributes are based on data types. The data set is based on the numeric and nominal data type. The input data are fed into the Excel by the nominal or numerical values only. The classification algorithm is used to predict their usage by some predefined classes like Complete Education, Internet, Entertainment, Edu+Int, Int+Ent,

Ent+Edu, Edu+Int+Ent. Mainly consider the values of the input variable given by the classification.

Table2. Frequency of Using Laptop by Students

Class	Frequency	Percentage
Education	43	43%
Entertainment	6	6%
Internet	18	18%
Edu+Int	9	9%
Int+Ent	6	6%
Ent+Edu	7	7%
Edu+Int+Ent	11	11%
Total	100	100%

Figure2. Using SPSS tool the data has been classified as described below

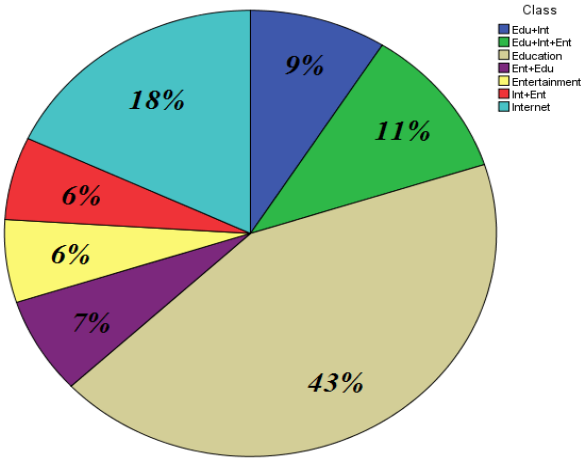

Table-2 and Figure – 2 According to the conducted survey majority of the students are using it for Education purpose (43%).

4.3 Experimental Results

Table3. Showing the Prediction of Classifier

Category	Classified Instances			
	SPSS	J48	Random Tree	Rep Tree
Education	43	55	43	52

Internet	18	17	18	17
Entertainment	6	5	6	5
Edu + Int	9	6	9	7
Int + Ent	6	-	6	-
Ent + Edu	7	7	7	9
Edu + Int + Ent	11	10	11	10
Total	100	100	100	100

Table-3 shows the result of different classification prediction for decision tree algorithms (J48, Random Tree, Rep Tree). It is observed that Random Tree performance is better than J48, Rep Tree algorithm. When compared with the SPSS classification using SPSS tool and Random Tree classification using Weka tool.

4.4 Stratified cross-validation

Table4. Stratified cross-validation for Classification algorithms

Parameters	**Classification Algorithms for 100 Instances**		
	J48	**Random Tree**	**Rep Tree**
Correctly Classified Instances	84%	100%	85%
Incorrectly Classified Instances	16%	0%	15%
Kappa Statistic	0.7742	1	0.7914
Mean absolute error	0.0679	0	0.0627
Root mean squared error	0.1843	0	0.1771
Relative absolute error	31.40%	0.00%	28.99%
Root relative squared error	56.28%	0.00%	54.07%
coverage of cases(0.95 level)	99%	100%	99%
Mean rel. region size (0.95 level)	36.29%	14%	31%

Table 4 shows the Stratified cross-validation for classification tree techniques. The cross-validation are Correctly Classified Instance, Incorrectly Classified Instance, Precision, True positive rate, F Measure, Receiver Operating Characteristics (ROC) Area and Kappa Statistics.

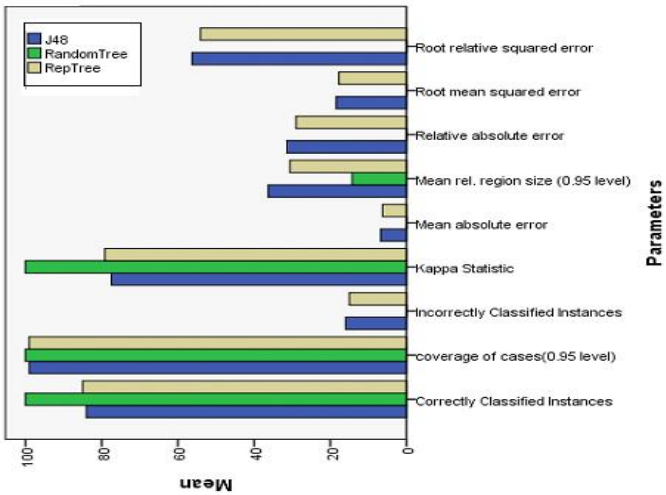

Figure3: Stratified cross-validation for Classification Algorithms

From the Figure3 it is observed that Random Tree performance is better than J48, Rep Tree algorithm.

4.5 Detailed Accuracy by Class

Table5. Accuracy for weighted avg. classification algorithms

Accuracy Measures	Classification Algorithms for 100 Instances		
	J48	Random Tree	Rep Tree
TP Rate	0.84	1	0.85
FP Rate	0.094	0	0.073
Precision	0.805	1	0.811
Recall	0.84	1	0.85
F-Measure	0.813	1	0.824
ROC Area	0.954	1	0.968

Table-5 shows the accuracy measures for classification tree techniques. The accuracy measures are TP Rate, FP Rate, Precision, Recall, F-measure, Roc Area.

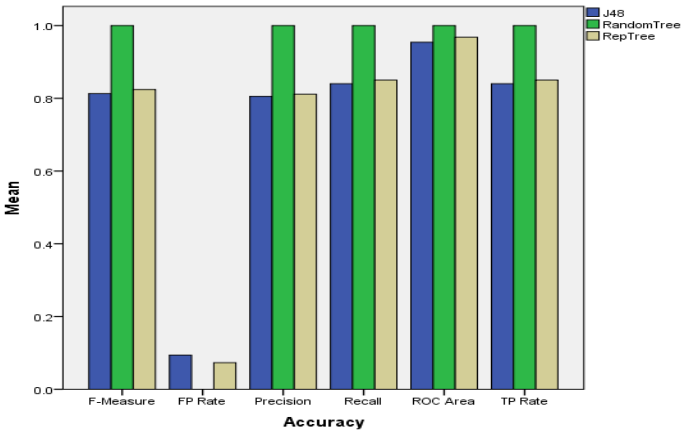

Figure4: Accuracy Measures for Classification Algorithms

From the Figure4 it is observed that Random Tree performance is better than J48, Rep Tree algorithm.

5. Conclusion

In this paper, we discussed about the laptop usage habit of postgraduate women students. The goal of tree based classification algorithm namely J48, Random Tree and Rep Tree is to build a set of models that can correctly predict the classes of different attributes. The input to this method is set of attributes (i.e., training data), the classes which these attributes belong to (i.e., dependent variables), and a set variables describing characteristics of attributes (i.e., independent variables). Once such a predictive model is built, it can be used to predict the class of the attributes for which class information is not known a priori. Collected data about how the students are using the laptops, based on the purpose of usage, purpose are categorized.

From this research, we analyzed the purpose of laptop usage as Education, Entertainment and Internet usage by students. Final result shows that the "more number of students are using their laptops for Education" of analyzed by the SPSS statistical tool. Is result is compared with Decision Tree algorithms (J48, Random Tree, Rep Tree). It is found that Random Tree classified better than the other two algorithms.

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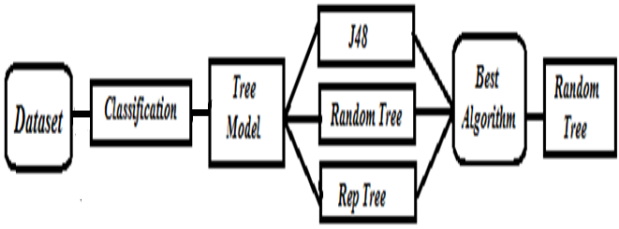

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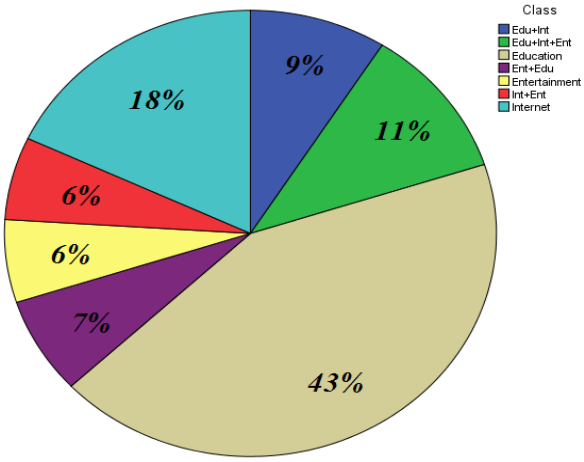

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Edu + Int + Ent	11	10	11	10
Total	100	100	100	100

Table-3 shows the result of different classification prediction for decision tree algorithms (J48, Random Tree, Rep Tree). It is observed that Random Tree performance is better than J48, Rep Tree algorithm. When compared with the SPSS classification using SPSS tool and Random Tree classification using Weka tool.

4.4 Stratified cross-validation

Table4. Stratified cross-validation for Classification algorithms

Parameters	**Classification Algorithms for 100 Instances**		
	J48	**Random Tree**	**Rep Tree**
Correctly Classified Instances	84%	100%	85%
Incorrectly Classified Instances	16%	0%	15%
Kappa Statistic	0.7742	1	0.7914
Mean absolute error	0.0679	0	0.0627
Root mean squared error	0.1843	0	0.1771
Relative absolute error	31.40%	0.00%	28.99%
Root relative squared error	56.28%	0.00%	54.07%
coverage of cases(0.95 level)	99%	100%	99%
Mean rel. region size (0.95 level)	36.29%	14%	31%

Table 4 shows the Stratified cross-validation for classification tree techniques. The cross-validation are Correctly Classified Instance, Incorrectly Classified Instance, Precision, True positive rate, F Measure, Receiver Operating Characteristics (ROC) Area and Kappa Statistics.

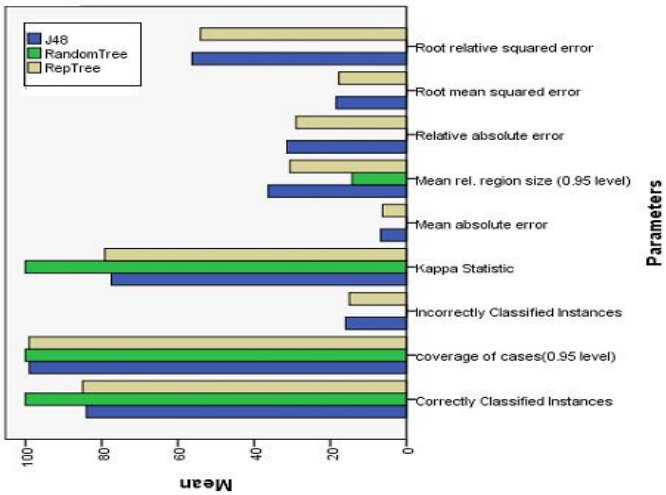

Figure3: Stratified cross-validation for Classification Algorithms

From the Figure3 it is observed that Random Tree performance is better than J48, Rep Tree algorithm.

4.5 Detailed Accuracy by Class

Table5. Accuracy for weighted avg. classification algorithms

Accuracy Measures	Classification Algorithms for 100 Instances		
	J48	Random Tree	Rep Tree
TP Rate	0.84	1	0.85
FP Rate	0.094	0	0.073
Precision	0.805	1	0.811
Recall	0.84	1	0.85
F-Measure	0.813	1	0.824
ROC Area	0.954	1	0.968

Table-5 shows the accuracy measures for classification tree techniques. The accuracy measures are TP Rate, FP Rate, Precision, Recall, F-measure, Roc Area.

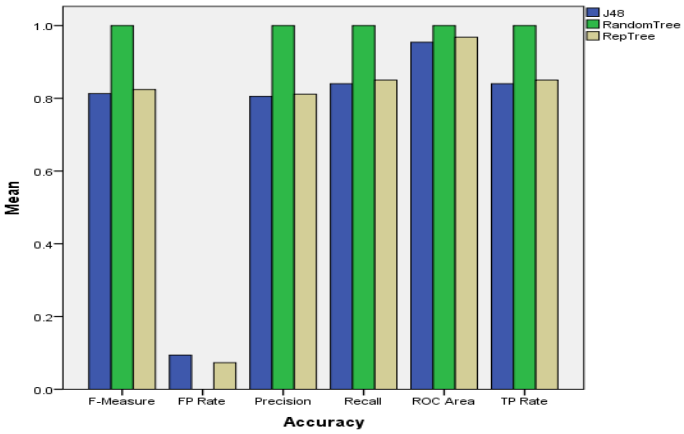

Figure4: Accuracy Measures for Classification Algorithms

From the Figure4 it is observed that Random Tree performance is better than J48, Rep Tree algorithm.

5. Conclusion

In this paper, we discussed about the laptop usage habit of postgraduate women students. The goal of tree based classification algorithm namely J48, Random Tree and Rep Tree is to build a set of models that can correctly predict the classes of different attributes. The input to this method is set of attributes (i.e., training data), the classes which these attributes belong to (i.e., dependent variables), and a set variables describing characteristics of attributes (i.e., independent variables). Once such a predictive model is built, it can be used to predict the class of the attributes for which class information is not known a priori. Collected data about how the students are using the laptops, based on the purpose of usage, purpose are categorized.

From this research, we analyzed the purpose of laptop usage as Education, Entertainment and Internet usage by students. Final result shows that the "more number of students are using their laptops for Education" of analyzed by the SPSS statistical tool. Is result is compared with Decision Tree algorithms (J48, Random Tree, Rep Tree). It is found that Random Tree classified better than the other two algorithms.

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Impact of Banking in Rural Households Economic Empowerment

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Abstract

India is known as country of villages and the agriculture and allied activities are the backbone for the economic development of the country. As Gandhi said "real India lies in village" and "village economy is the backbone of Indian economy". Without the development of the rural economy, the objective of economic planning cannot be achieved. Hence, banks and other financial institutions are considered to be a vital role for the development of the rural economy in India. Less than 1% villages availed financial facilities from commercial banks. So there was strong need for the establishment of Regional Rural Banks. Regional Rural Banks (RRBs) were established in October 2, 1975. The main goal of establishing Regional Rural Banks in India is to provide credit to the rural people who are economically weak, especially the small and marginal farmers, artisans, agricultural laborers and even small entrepreneurs. So Banks play an important role in mobilization and allocation of resources in any country. Rural people in India are facing problems in adequate supply of credit. The major source of credit to rural households has been the informal sector. The present research paper is exploratory in nature and makes use of secondary data. The relevant secondary data have been collected mainly through the data bases of reserve Bank of India (RBI), National Bank for Agriculture and Rural Development (NABARD). An attempt is made there in this paper to examine the impact of banking in rural household's economic empowerment.

Keywords: *RRB's, Rural households, Economic Development.*

Introduction

Activities of modern economy are significantly influenced by the functions and services of banks. Banking sector constitutes the core part of economic system. Indian economy is agricultural economy and real India lies in villages. RRBs were essentially for the purpose of taking banking service to the doorsteps of rural people, particularly in places where banking facilities are not available. In general, RRBs are commercial banks but they adopt some of the principles of cooperatives such as location in areas, work for rural population in a limited area etc. Thus they are hybrid institutes. RRBs operate under the control of two institutions, the National Agricultural Bank and Rural Development (NABARD) and Reserve Bank of India (RBI). The primary objective of this study is to analyze the performance in terms of loans provided to the priority and non-priority sectors of the country and especially various types of loans such as crop loans, term loans, loans to rural artisans, retail trade, small scale industries and self-help groups etc..., Recently, several policy initiatives have been taken to advance rural banking. These include additional capital contribution to NABARD by the RBI and the Government of India, recapitalization and restructuring of RRBs, simplification of lending procedures as per the Gupta Committee recommendations, preparation of a special credit plans by

public sector banks and launching of Kisan Credit Cards. Finally, a scheme linking self-help groups with banks has been launched under the aegis of NABARD to augment the resources of micro credit institutions. A Committee has gone into various measures for developing micro credit, and has submitted its report, which is under the consideration of the RBI.

Regional Rural Banks (RRBs) in India-An Overview

Rural people in India such as small and marginal farmers, landless agricultural laborers, artisans and socially and economically backward castes and classes, have been exploited in the name of credit facility by informal sectors. The rural credit market consists of both formal and informal financial institutions and agencies that meet the credit needs of the rural masses in India. The informal sector advances loans at very high rates of interest; the terms and conditions attached to such loans have given rise to an elaborate structure of intimidation of both economic and non-economic conditions in the rural population of India. The supply of total formal credit is inadequate and rural credit markets are imperfect and fragmented. Moreover, the distribution of formal sector credit has been unequal, particularly with respect to region and class, cast and gender in the country side. The history of Regional Rural Banks in India dates back to the year 1975. It's the Narasimham committee that conceptualized the foundation of Regional Rural Banks in India. The committee felt the need of regionally oriented rural banks' that would address the problems and requirements of the rural people in India. The RRBs mobilize financial resources from rural/semi-urban areas and grant loans and advances mostly to small and marginal farmers, agricultural laborers and rural artisans.The various services RBI in assistance with the commercial banks offers under RRB are in the rural areas:

- Loans
- Savings
- Pensions
- Remittance of funds
- Insurance
- Credit cards
- Financial counselling
- Risk mitigation produce

Role of RRBs

1. Opening of no-frills accounts: Basic banking no-frills account with nil or very low minimum balance & banking charges that make such accounts accessible to vast sections of the rural population. RRBs are providing small overdrafts in such accounts.

2. Relaxation on know-your-customer (KYC) norms: Since August 2005, KYC requirements for opening bank accounts were relaxed for small accounts. RRBs are now permitted to take any evidence as to the identity and address of the customer to their satisfaction. It has now been further relaxed to include the letters issued by the Unique

Identification Authority of India containing details of name, address and Aadhaar number.

3. General Credit Cards (GCCs): With a view to helping the poor and the disadvantaged rural people with access to easy credit, RRBs introduced general purpose credit card facility up to 15,000 at their rural and semi-urban branches. The objective of the scheme is to provide hassle-free credit to the customers based on the assessment of cash flow without insistence on security, purpose or end use of the credit.

4. Engaging business correspondents (BCs): In January 2006, RBI permitted scheduled commercial banks to engage business facilitators (BFs) and business correspondents (BCs) as intermediaries for providing financial and banking services. The BC model allows banks to provide doorstep delivery of services, especially cash in-cash out transactions, thus addressing the lastmile problem. The list of eligible individuals and entities that can be engaged as BCs is being widened from time to time.

Aim and Objectives of the Study

This paper focuses on highlighting the unbeatable role of the Regional Rural Banks in the upliftment of the rural India. It aims to understand the invaluable contribution of these banks towards fulfilling the objectives of enrichment and betterment of the overall quality of the rural life through appropriate development of manpower resources, infrastructural facilities and provision of minimum needs and livelihood.

- To take banking to door steps of rural households particularly in banking deprived rural area,
- To avail easy and cheaper credit to weaker rural section who are dependent on private lenders,
- To encourage rural savings for productive activities,
- To generate employment in rural areas and to bring down the cost of purveying credit in rural areas.

Research Methodology

In order to achieve the research objectives the blend of deductive and inductive research approach is selected, whereas Qualitative research method is utilized. The research is based on only publically available information which has been taken into account. In order to fulfil proposed objectives data on various facts related to the RRBs and Rural India is been presented with the help of literature review. The data is collected using secondary method to fulfil different issues related to research topic from the published articles, journals, reports, websites, blogs and academic literatures.

Literature Review

Institutional finance is the lifeblood of modern economic system without which no system can survive. In agricultural development also its role is crucial. Adequate institutional credit is considered to be the most important factor, which if suitably

provided, will go a long way to put the economy of the farmers especially the small and marginal farmers on a sound footing (Selvaraj 1998). So agriculture and rural development has been on the priority agenda of our policy makers since independence and considerable efforts have been made to develop the rural credit system as means of rural development (Joshi 1997, Tyagi and Singh 1998).

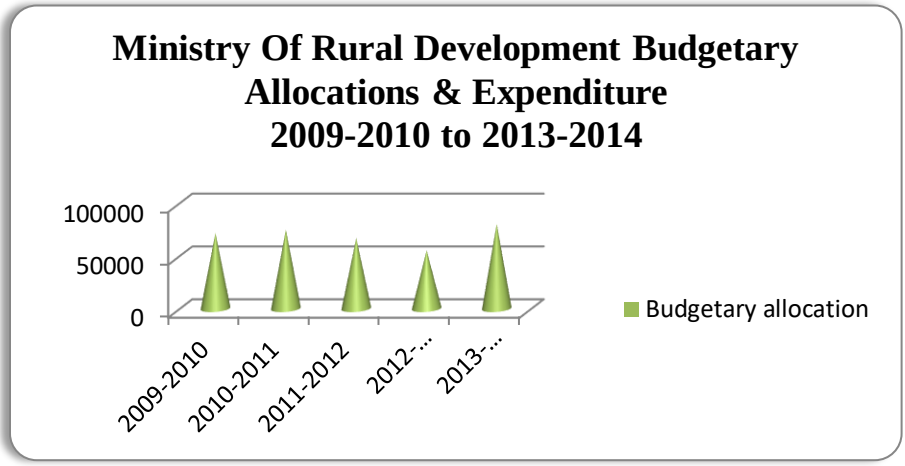
The term rural development refers to a wide array of developmental programmes aimed at developing rural areas through the creation of infrastructure facilities to improve the condition of rural people. The very concept of rural development on the global level had its origin in the mid 17 th century in England. A group of people called 'Quakers' or friends organized themselves on the principles of selfless sacrifice. They believed in the dignity of all human beings. This philosophy was propagated throughout the world.

Rural development is, therefore, the development of rural areas in such a way that each component of rural life changes in a desired direction and in sympathy with the other component. Besides, rural development also encompassed structured changes in the socio-economic situation in the rural areas in order that human welfare, which is the primary goal of all development, is secured at the earliest. It has been the constant endeavour of the planners to give adequate thrust to rural development as the sector is directly related to agriculture.

Research Analysis

69% of population of India lives in rural area. This population contributes significantly both as consumer and labour. Development of the country aims at developing all sectors and it aims at inclusive growth. Rural India is full of potential there is a need for development of this area and proper banking support from the RRB's can help much. If the basic hurdles are overcome then definitely we can have a balanced growth of rural and urban India. Rural financial system is a powerful instrument and a prerequisite in accelerating the developmental activities in rural areas. It operates through two sets of institutions in the organized and unorganized sectors. The unorganized sector consists of local money lenders, landlords, traders, merchants etc; in which case no effective control can be exercised by the government. They largely function in an autonomous fashion with its own norms and discipline. The agencies in the unorganized sector in our villages have still a dominating position in rural finance (Joshi 1997, Singh et. al; 2001, Jeromi 2002). They charge exorbitant rates of interest and they continue to exploit the poor rural masses. The situation resulted in the emergence of institutional agencies in rural credit under the control and direction of the government. Here, the researcher has depicted the ministry of rural development budgetary allocations for the past five years.

Chart 1



Figures in Rs. Cr; RE: revised estimates, BE: budget estimates

Source: union budget 2013-2014

Table 1 - Ministry of Rural Development Budgetary Allocations & Expenditure

Years	Budgetary allocation
2009-2010	71532
2010-2011	74727
2011-2012	66689
2012-2013(RE)	55052
2013-2014(BE)	80250

Figures in Rs. Cr; RE: revised estimates, BE: budget estimates.

Source: union budget 2013-2014

From the above table the year wise budgets are given. When compared to the past years budget the present allocation of fund has increased. It shows that rural households have been developing.

Impact of Banking In Rural Households Economic Empowerment

Rural development in the country is designed to enhance the socio-economic living conditions for the people living in rural India while conserving their culture and rich tradition. The Government seeks to achieve higher targets related to rural production, employment and higher living standards which will pave the way for all round economic

development of the country. This includes setting up basic infrastructure and facilities such as medical facilities, schools, and transport facilities, apart from scheme implementation related to improving rural employment, agricultural productivity and rural industrialization.

Rural households need credit for investing in agriculture and smoothening out seasonal fluctuations in earnings. Since cash flows and savings in rural areas for the majority of households are small, rural households typically tend to rely on credit for other consumption needs like education, food, housing, household functions, etc. Rural households need access to financial institutions that can provide them with credit at lower rates and at reasonable terms than the traditional money-lender and thereby help them avoid debt-traps that are common in rural India.

1. **Impact on Income:** Thus supply of bank finance has proved to be a means of increasing income in the post loan period as compared with that of pre loan period.

2. **Impact on Employment:** Generation of additional sources of income and employment has Been the main bjective of RRB. The various schemes financed by bank help in providing Employment to the beneficiaries either for the full year or seasonal.

3. **Participation Cost:** Participation cost consists of payment made or expenses incurred at various stages of filling of application form to the stage of formally joining into the scheme. Each and every beneficiary has to pay participation costs in one or the other. The form and cost varied from scheme to scheme and beneficiary to beneficiary.

4. **Factor Responsible for Non-repayment :** Inadequacy of income, unwillingness to repay, higher family consumption, prefer repayment of private borrowing over repayment of bank loans, lack of efforts by Bank staff has been found to be the basic reason for non-repayment of the loan, death of animals, borrower's Illness and dispute with bank staff respectively. Nowadays political announcements become major reason for non-repayment.

The Regional Rural Banks have been growing in importance since their inception in 1975 as special institutions playing a catalyst role in the development of rural areas. They have been playing a significant role in financing the weaker sections of the community in the rural areas and also in inculcating banking habit among rural masses. Regional Rural Banks were set up with a view to developing the rural economy by providing credit and other facilities, particularly to the small and marginal farmers, agricultural labourers, artisans and small entrepreneurs. Being local level institutions, RRBs together with commercial and cooperative banks, were assigned a critical role to play in the delivery of agriculture and rural credit.

The RRBs' were established, "with a view to develop the rural economy by providing for the purpose of development of agriculture, trade, commerce, industry and other productive activities in the rural areas, credit and other facilities, particularly to small and marginal farmers, agricultural labourers, artisans and small entrepreneurs and for matters connected therewith and

Incidental thereto." (The RRB Act, 1996)

Performance of Regional Rural Banks in Recent Times

The total number of RRBs stood at 82 in March 2011. As amalgamation process was continuing the total number of RRB fell to 64 in March 2013. It further fell to only 57 in March 2014.At present, the number of RRBs is 56 (August 2014). National Bank for Agriculture and Rural Development (NABARD), the regulating body for rural banks, has reported that the agricultural credit disbursement by RRBs has been short of the target

Performance of the Rural Bank clearly reveals that they have made satisfactory progress in carrying out their social objectives i.e., to take banking to door steps of rural households particularly in banking deprived rural area, to avail easy and cheaper credit to weaker rural section who are dependent on private lenders, to encourage rural savings for productive activities, to generate employment in rural areas and to bring down the cost of purveying credit in rural areas. The progress of deposit mobilization can be attributed to the pace of branch expansion. A comparatively better indicator of deposit mobilization is deposits per branch as deposits can simply be increased by opening more branches in rural areas. Moreover, promotion of the culture of good customer services will help in mobilizing the deposits.

Present Status (August 2014) and Future Plans for Regional Rural Banks

- As per reports of June, 2014, Government of India has put on hold further amalgamation of RRBs. As per news paper reports (June 2014), GoI has conveyed to the sponsor banks that no fresh proposal of amalgamation of RRBs should be taken up at present.
- Therefore, at present the focus for RRBs will be on improving their performance including their profitability.
- A Bill to amend the RRB Act is being considered by the parliamentary standing committee on finance. The amendments are aimed at increasing the pool of investors to tap capital for RRBs. Thus, Government is exploring a new class of investors to raise capital for these banks. In a communiqué to the heads of public sector banks, the finance ministry said there was a need to tap other sources of capital for RRBs.
- Government of has been making various effort to make RRBs a profitable institution by infusing fresh capital, by allowing RRBs. To lend commercial

projects, consortium finance, foreign currency, insurance business on referral basis.

- RRBs are also fast moving towards core banking solution for effectiveness and to increase customer base. Over 20 RRBs are already on CBS platform.

Suggestions

- Productivity can be improved by controlling the costs and increasing the income.
- Involvement of panchayats, SHG, NGO and other local bodies.
- Policy should be made by government for opening more branches in weaker and remote areas of state.
- It needs ATMs in the rural areas as well as urban areas to enhance their Services.
- The interest paid ratio can also be reduced by changing the composition of deposits in favour of the savings and current deposits.
- Productivity can be improved by controlling the costs and increasing the income.
- To participation cost, subsidy should be adjusted towards the end of the transaction for which loan assistance is sanctioned.
- Government should take firm action against the defaulters and shouldn't make popular announcements like waiving of loans.
- Conducting farmers financial awareness programs in rural areas.

Conclusion

To conclude, the rapid expansion of RRB has helped in reducing substantially the regional disparities in respect of banking facilities in India. The efforts made by RRB in branch expansion, deposit mobilization, rural development and credit deployment in weaker section of rural areas are appreciable. RRB successfully achieve its objectives like to take banking to door steps of rural households particularly in banking deprived rural area, to avail easy and cheaper credit to weaker rural section who are dependent on private lenders, to encourage rural savings for productive activities, to generate employment in rural areas and to bring down the cost of purveying credit in rural areas. There are 185 million bankable adults in rural households who are unbanked because of access and usage issues. This presents a significant opportunity for commercial banks. However, to reach this market and subsequently build an inclusive financial system, there must be a coordinated and concerted effort by the three key stakeholders: the Government of India, the Reserve Bank of India and the commercial banks. In addition, a partnership between banks and business correspondents, and collaboration amongst banks is critical. Furthermore, banks should tailor their product and service mix to meet rural. Thus RRB is providing the strongest banking network. The banks are striving hard to provide best banking service in its command area.

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Sobolev Spaces

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Abstract

This paper deals with the spaces of continuous functions on measurable sets and gives a brief overview on basic results of the theory of Sobolev spaces and their extensions.

Key words: *Continuous function, Measurable, Sobolev space.*

Introduction

In mathematics, a Sobolev space is a vector space of functions equipped with a norm that is a combination of L^p-norms of the function itself and its derivatives up to a given order. The derivatives are understood in a suitable weak sense to make the space complete, thus a Banach space. Intuitively, a Sobolev space is a space of functions with sufficiently many derivatives for some application domain, such as partial differential equations, and equipped with a norm that measures both the size and regularity of a function.

Sobolev spaces are named after the Russian mathematician Sergei Sobolev. Their importance comes from the fact that solutions of partial differential equations are naturally found in Sobolev spaces, rather than in spaces of continuous functions and with the derivatives understood in the classical sense.

Definition

Let Ω be a domain in $\mathbb{R}^n$ and let p be a positive real number. We denote by $L^p(\Omega)$ the class of all measurable functions u defined on Ω for which

$$\int_\Omega |u(x)|^p \, dx < \infty.$$

Definition

Let Ω be a bounded domain in Euclidean space $\mathbb{R}^n$. We denote by $\bar{\Omega}$ its closure and $\Gamma = \partial\Omega$ as its boundary. We consider the functions $u: \Omega \to \mathbb{R}$ and denote by

$$\mathcal{D}^\alpha u = \frac{\partial^{|\alpha|} u}{\partial {x_1}^{\alpha_1} \partial {x_2}^{\alpha_2} \dots \partial {x_n}^{\alpha_n}}$$

its partial derivatives of order $|\alpha|$. Here, $\alpha = (\alpha_1, \alpha_2, \dots, \alpha_n) \in \mathbb{N}_0^n$ is a multi index of modules $|\alpha| = \sum_{i=1}^n \alpha_i$.

Definition

Let $u \in L^1(\Omega)$ and $\alpha \in \mathbb{N}_0^n$. The function u is said to have a weak derivative $\mathcal{D}^\alpha u$ if there exists a function $v \in L^1(\Omega)$ such that

$$\int_\Omega u\mathcal{D}^\alpha \varphi \, dx = (-1)^{|\alpha|} \int_\Omega v \, \varphi \, dx$$

for all $\varphi \in \mathcal{D}(\Omega)$.

Definition

The linear space $W^{m,p}(\Omega)$ is defined to be the set of all functions such that for every multi-index α with $|\alpha| \leq m$, the weak partial derivatives $\mathcal{D}^\alpha u$ belongs to $L^p(\Omega)$.

i.e) $W^{m,p}(\Omega) = \{u \in L^p(\Omega) / \mathcal{D}^\alpha u \in L^p(\Omega) \forall |\alpha| \leq m\}$

is called a Sobolev space.

Here Ω is an open set in $\mathbb{R}^n$ and $1 \leq p \leq \infty$. The natural number m is called the order of the Sobolev space $W^{m,p}(\Omega)$.

Endowed with the norms

$$\|u\|_{W^{m,p}(\Omega)} = \left(\sum_{0 \leq |\alpha| \leq k} \|D^\alpha u\|^p_{L^p(\Omega)} \right)^{\frac{1}{p}}, \qquad 1 \leq p \leq \infty$$

and $\max_{0 \leq |\alpha| \leq m} \|D^\alpha u\|_{L^\infty(\Omega)}, \qquad p = \infty.$

Theorem

For any $\in \mathbb{N}$, $1 \leq p \leq \infty$, the space $W^{m,p}(\Omega)$ is a Banach Space.

Proof

1. Normed Space: $W^{m,p}(\Omega)$ is a normed space. Since $L^p(\Omega)$ is a normed space for any $1 \leq p \leq \infty$.

2. Completeness: Let $\{u_n\}$ be a Cauchy sequence in $W^{m,p}(\Omega)$. Then $\{\mathcal{D}^\alpha u_n\}$ is a Cauchy sequence in $L^p(\Omega)$ for $0 \leq |\alpha| \leq m$. Since $L^p(\Omega)$ is complete, there exists functions u and $u_\alpha, 0 \leq |\alpha| \leq m$ such that $u_n \to u$ and $\mathcal{D}^\alpha u_n \to u_\alpha$ in $L^p(\Omega)$.

In particular $u_n \to u := u_0$ in $W^{m,p}(\Omega)$. For any $\varphi \in \mathcal{D}(\Omega)$. We have

$$\int_\Omega u D^\alpha \varphi \, dx = \lim_{m \to \infty} \int_\Omega u_m D^\alpha \varphi \, dx$$

$$= \lim_{n \to \infty} (-1)^{|\alpha|} \int_\Omega \mathcal{D}^\alpha u_n \varphi \, dx$$

$$= (-1)^{|\alpha|} \int_\Omega u_\alpha \varphi \, dx$$

$\therefore u = u_0 \in W^{m,p}(\Omega)$ and $\mathcal{D}^{\alpha}u = u_{\alpha}$ for all $0 \leq |\alpha| \leq m$.

$\therefore$ The space $W^{m,p}(\Omega)$ is complete.

Thus the space $W^{m,p}(\Omega)$ is a Banach space.

Definition

$\Omega \subset \mathbb{R}^n$ is a class of C^1 if for every $x_0 \in \partial\Omega$ exists a neighborhood U and a diffeomorphism $\Phi \in C^1(U, \mathbb{R}^n)$ such that

1. $\Phi(x_0) = 0$,
2. $\Phi(U \cap \Omega) = \Phi(U) \cap \{x = (x_1, \dots, x_n) : x_n > 0\}$.

Theorem: (Extension Theorem)**.** Let $\Omega \subset\subset \mathbb{R}^n$ with C^1-boundary $\partial\Omega$ and $1 \leq p \leq \infty$.Then there exists a continuous linear operator

$$E: W^{1,p}(\Omega) \rightarrow W^{1,p}(\mathbb{R}^n)$$

with the properties

i) $Eu = u$ *a.e. in* Ω.

ii) $\|Eu\|_{W^{1,p}(\mathbb{R}^n)} \leq C\|u\|_{W^{1,p}(\Omega)}$.

Proof

Since Ω is compactly contained in $\mathbb{R}^n$, the boundary $\partial\Omega$ is compact and hence there exists a finite cover $U_1,\dots,U_N$ of $\partial\Omega$ with $\partial\Omega \subset \bigcup_{i=1}^{N} U_i$. Associated to this finite cover is a collection of C^1- diffeomorphism $\Phi_i : Q \rightarrow U_i$ so that for $1 \leq i \leq N$

$$\Phi_i(Q_+) = U_i \cap \Omega$$

$$\Phi_i(Q_0) = U_i \cap \partial\Omega,$$

where Q is the cylinder

$$Q = \{(x', x_n) : |x'| < 1, |x_n| < 1\}$$

with subsets

$$Q_+ = Q \cap \{x_n > 0\}, \; Q_0 = Q \cap \{x_n = 0\}.$$

Furthermore, we choose a $U_0 \subset \Omega$ such that $\overline{\Omega} \subset \bigcup_{i=1}^{N} U_i$. Next we pick a partition of unity $(\Phi_i)_{i=1}^{N}$ and any $u \in W^{1,p}(\Omega)$ we decompose as

$$u = \sum_{i=0}^{N} \varphi_i u$$

All that then remains to do is to prove the following rather technical lemmas.

Lemma: u_0 can be extended to $v_0 \in W^{1,p}(\mathbb{R}^n)$by

$$v_0(x) = \begin{cases} u_0(x), & x \in \Omega, \\ 0, & x \notin \Omega \end{cases}$$

Lemma: For $1 \leq i \leq N$, u_i can be extended to $v_i \in W^{1,p}(\mathbb{R}^n)$ via

$$v_0(x) = \begin{cases} ((u_i \circ \Phi_i)^* \circ \Phi_i^{-1}), & x \in \mathrm{U_i}, \\ 0, & else\,, \end{cases}$$

where $*$ is the extension of a function by reflection across $\mathrm{Q}_0 in\, \mathrm{Q}$.

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திருமுருகாற்றுப்படையின் சிறப்புகள்

திருமதி. த. தனலெட்சுமி,
தமிழ்த்துறை, உதவிப் பேராசிரியை, ஸ்ரீ சாரதா மகளிர் கல்லூரி,
திருநெல்வேலி - 627011

முன்னுரை

சங்க நூல்களுள் முதன்மையாக வைத்துப் போற்றப்படும் நூல் "பத்துப்பாட்டு" ஆகும். இந்நூல் பண்டைய மக்களின் பழக்கவழக்கங்களை அறிந்து கொள்ள உதவும் திறவுகோலாக உள்ளது. இந்நூலினைப் பேராசிரியர் சுந்தரம்பிள்ளை அவர்கள்,

"பத்துப்பாட் டாதி மனம்பற்றினார் பற்றுவரோ
எத்துணையும் பொருட்கிசையும் இலக்கணமில் கற்பனையே" 1

என்று கண்ணாற் கண்ட காட்சித் தொகுதிகளை அழகாகத் தருகின்ற சொல்லோவியம் என்றும் சிறப்பித்துக் கூறுகிறார். பத்துப்பாட்டில் இயற்கை மணம் கமழ்வதைக் காணலாம், அழகிய உவமைகளைக் கண்டு இன்புறலாம், தமிழ்நாட்டு மக்களின் பல்வேறு வகையான வாழ்க்கையையும், வேந்தர்களின் ஆட்சி முறையையும் அறியலாம்.

பத்துப்பாட்டின் வகைதொகைகள்:

"முருகு பொருநாறு பாணிரண்டு முல்லை
பெருகு வளமதுரைக் காஞ்சி – மருவினிய
கோலநெடு நல்வாடை கோல்குறிஞ்சி பட்டினப்
பாலை கடாத்தொடும் பத்து" 2

எனும் பழம்பாடல் பத்துப்பாட்டு நூல்களை வரிசைப்படுத்துகிறது. இப்பாடல் திருமுருகாற்றுப்படை, சிறுபாணாற்றுப்படை, பெரும்பாணாற்றுப்படை, பொருநராற்றுப்படை, கூத்தராற்றுப்படை என்ற ஐந்தையும் ஆற்றுப்படை நூல்கள் எனவும், பட்டினப்பாலை, முல்லைப்பாட்டு, குறிஞ்சிப்பாட்டு என்ற மூன்றையும் அகப்பொருள் நூல்கள் எனவும், மதுரைக்காஞ்சியை புறம் சார்ந்த நூலாகவும், நெடுநல்வாடையை அகப்புறம் சார்ந்த நூலாகவும் வகைதொகை செய்கிறது.

ஆற்றுப்படை - இலக்கணம்:

'ஆறு' என்றால் வழி , படை என்றால் படுத்துதல் , அதாவது வழிப்படுத்துதல் என்பதாகும். இதனையே தொல்காப்பியர்,

"கூத்தரும் பாணரும் பொருநரும் விறலியும்
ஆற்றிடைக் காட்சி உறழத் தோன்றிப்
பெற்ற பெருவளம் பெறாஅர்க்கு அறிவுறீஇச்
சென்றுபய னெதிரச் சொன்ன பக்கமும்" 3

எனும் பாடல்மூலம் விளக்குகிறார். அதாவது ***கூத்தர்*** என்பவர் தனிக்கூத்திலும் கதை தழுவிவரும் கூத்திலும் வல்லவர். ***பாணர்*** என்பவர் இசைத்தமிழில் வல்லவர். குழல், யாழ் முதலிய இசைக்கருவிகளோடு பாடுவர். ***பொருநர்*** என்பவர் ஏர்க்களம் அல்லது போர்க்களம் சென்று பாடும் கூத்தராவர். நடிப்பிலும் வல்லவர். ***விறலி*** என்பவள் உள்ளக்குறிப்பைப் புறத்தே வெளிப்படும்படி விறல்பட திறமையாக நடிப்பவள். இந்நால்வரும் தனக்கு துணையாயினரோடு சிற்றரசரிடமும் பேரரசரிடமும் சென்று தம் கலைத்திறனைக் காட்டிப் பரிசு பெற்று மீள்வர். அங்ஙனம் மீண்டு வருபவர் வள்ளல்களை நாடிச் செல்லும் தம்மைப் போன்ற கலைவாணரை வழியில் காணின் அவர்மீது இரக்கம் கொள்வர். அவர்களுக்கு உதவி செய்ய விரும்புவர் தம்மை ஆதரித்த வள்ளலிடம் சென்று பரிசில் பெற்று மகிழுமாறு அவர்களை ஆற்றுப்படுத்துவர். இங்ஙனம் ஆற்றுப்படுத்துதல் என்பதே ஆற்றுப்படையின் இலக்கணம் ஆகும்.

இதனையே பன்னிருபாட்டியல் கூறும் பொழுது,

"புரவலன் பரிசில் கொண்டு மீண்ட
இரவலன் வெயில் தெறும் இருங்கானத்திடை
வறுமையுடன் வரூஉம் புலவர் பாணர்
பொருநர் விறலியர் கூத்தர்க் கண்டுஅப்
புரவலன் நாடுஊர் பெயர்க்கொடை பராஆய்
ஆங்குநீர் செல்க என விடுப்பது ஆற்றுப்படை" 4

என விளக்கம் தருகிறது. அதாவது ஆற்றுப்படுத்துதற்குரியோராகிய புலவர், பாணர், பொருநர், விறலியர், கூத்தர் முதலியோரில் புரவலனிடத்தே பரிசில் பெற்ற ஒருவர் வெம்மை மிகுந்த கானகத்தில் வறுமையோடு எதிர்ப்படும் சக கலைஞன் ஒருவனைச் சந்தித்துத் தனக்குப் பொருளீந்த புரவலின் நாடு, நகர், கொடை முதலியன குறித்துச் சிறப்பித்துக் கூறி, அவ்விடத்திற்குச்சென்று ஏகிப் பயன்பெறுமாறு ஆற்றுப்படுத்துதல் என்ற பொருள் தெளிவுடன் இலக்கணம் வகுக்கின்றது.

திருமுருகாற்றுப்படை பெறும் இடம்:

ஆற்றுப்படை நூல்களில் முதன்மையாக விளங்குவது திருமுருகாற்றுப்படையாகும். இந்நூல் ஆற்றுப்படை நூல்களுக்குக் கடவுள் வாழ்த்தாகவும் அமைகின்றது. ஆற்றுப்படைகள் ஆற்றுப்படுத்தப்படும் பாணர், கூத்தர், பொருநர், விறலி என்னும் பெயர்களோடு சார்த்திப் பாணாற்றுப்படை, கூத்தராற்றுப்படை, பொருநராற்றுப்படை, விறலியாற்றுப்படை என வழங்கப்படுகிறது. முருகாற்றுப்படையோ முருகன் அருள் பெற்ற புலவர் ஒருவர் புதிய புலவர் ஒருவரை முருகன்பால் ஆற்றுப்படுத்துவது ஆகும். இது புலவராற்றுப்படை என்று வழக்குப் பெறாமல் திருமுருகாற்றுப்படை என்றே வழக்குப் பெற்றுள்ளது. அழிதலில்லாத வீட்டின்பத்தையே வழங்கும் அழிவற்ற இறைவனைப் பாடும் சிறப்பையும் பெற்றுள்ளது.

திருமுருகாற்றுப்படை தோன்றிய விதம்:

நக்கீரர் தம்மைப் புடைத்து உண்ண அடைத்து வைத்த பூதத்தினின்று தம்மைக் காக்கும் பொருட்டு முருகக் கடவுளை நினைந்து பாடியதே திருமுருகாற்றுப்படையாகும். இப்பாடல் 317 அடிகளால் ஆசிரியப்பாவில் பாடப்பெற்ற நூலாகும்.

முருகனின் தோற்றப் பொலிவு:

முருகப் பெருமான் சிவந்த திருமேனியையும், சிவந்த ஆடையையும், அசோகின் தளிர்கள் அசைகின்ற காதுகளையும், அரைக் கச்சையை அணிந்தும், வீரக்கழல் தரித்தும், வெட்சி மாலை சூடியும், புல்லாங்குழலை வாசிப்பவனும், பெரிய கொம்பை ஊதுபவனும், வேறு பல வாத்தியங்களை ஒலிப்பவனும், ஆட்டுக்கிடாயை வாகனமாக உடையவனும், மயிலை ஊர்தியாக உடையவனும், கோழிக்கொடியை உயர்த்தியவனும், நெடிய உருவம் உடையவனும், தொடி எனும் அணியைத் தோளில் அணிந்தவனும், நிலத்தளவு புரளும் ஆடை அணிந்தவனும், மெல்லிய தோளை உடையவனும், மலைகள் தோறும் சென்று விளையாடும் சிறப்பினை உடையவன் என்பதை

"செய்யன், சிவந்த ஆடையன், செவ்வரைச்
. . . . . .
குன்றுதோறு ஆடலும் நின்றதன் பண்பே" 5

எனும் திருமுருகாற்றுப்படை பாடல்வரிகள் மூலம் நக்கீரர் வெளிப்படுத்துகிறார்.

முருகாற்றுப்படை கூறும் அறுபடைவீடுகள்:

முருகக் கடவுள் எழுந்தருளியிருக்கும் திருப்பரங்குன்றம், திருச்சீரலைவாய், திருவாவினன்குடி, திருவேரகம், குன்றுதோறாடல், பழமுதிர்ச்சோலை ஆகிய அறுபடைவீடுகளின் சிறப்புப் பற்றி திருமுருகாற்றுப்படை விளக்குகிறது. அதாவது ***முதற்பகுதியாகிய திருப்பரங்குன்றத்தில்*** முருகனின் உருவச் சிறப்பும், சூரனை சங்காரம் செய்த சிறப்பும், ***இரண்டாம் பகுதியாகிய திருச்சீரலைவாயில்*** (திருச்செந்தூர்) ஆறு திருமுகங்களும், பன்னிரண்டு கைகளும் ஆற்றுகின்ற சிறப்பும், ***மூன்றாம் பகுதியாகிய திருவாவினன்குடியில்*** (பழனி) முனிவர்கள் வழிபடும் முறையும், முனிவர்களின் ஒழுக்கமும், முருகனை வணங்க வரும் மகளிரின் வனப்பும், ***நான்காம் பகுதியாகிய திருவேரகத்தில்*** (சுவாமிமலை) அந்தணர்கள் முருகனை வழிபடுதலும், ***ஐந்தாம் பகுதியாகிய குன்றுதோறாடலில்*** பாடுமகளிர், ஆடுமகளிர் பண்புகளும், ***ஆறாம் பகுதியாகிய பழமுதிர்ச்சோலையில்*** (அழகர் மலை) முருகன் உறையும் இடங்களும், அருள் பெறும் வழியும், அருள்புரியும் வகையும் எடுத்துரைக்கப்படுகின்றது.

இறுதிப் பகுதியில் ஓங்கி உயர்ந்த மலையுச்சியிலிருந்து விழுகின்ற அருவி பொன்னையும், கனியையும், தேனையும், புரட்டியடித்துக் கொண்டு வேகமாக வருகிறது. ஆனால் அவற்றை அள்ளிப் பருக நெஞ்சம் இல்லாமல், விலங்குகள் அஞ்சி ஓடுகின்றன என்பதை "ஆண்டவன் அருளோ, பெருவெள்ளமாப் பெருக்கெடுத்து ஓடுகிறது. ஆனால், விலங்கு இதயம் பெற்ற

மனித இனமோ, அதைத் துய்க்காமல் அஞ்சி விலகுகிறதே'' எனும் உட்கருத்தில் நக்கீரர் விளக்கியுள்ளார்.

வழிபடும் முறை:

முருகப்பெருமானை அவரவர் வாழிடங்களுக்கேற்றவாறு பூசைப்பொருள் கொண்டு வழிபாடு செய்வர். இறைவன் அன்பு கொண்ட நெஞ்சங்களில் உறையும் இயல்புடையவன் என்பதையும், புற இருளைப் போக்குவது ஞாயிற்றின் ஒளிமண்டலம், அதுபோல அகஇருளைப் போக்கி, மெய்ப்பொருளைத் தெரிந்துணர்த்தும் அறிவுப் பேரொளியாக விளங்குகிறான் என்பதையும் அறிய முடிகிறது.

முருகன் தன்னை அன்பு செய்வோர் உள்ளத்தில் மட்டுமின்றி, வேலன் வெறியாட்டுக் களத்திலும், காட்டிலும், சோலையிலும், ஆற்றிடைக்குறையிலும், ஆற்றிலும், குளத்திலும், வேறு பல வழிகளிலும், நாற்சந்தியிலும், முச்சந்தியிலும், ஐஞ்சந்தியிலும், புதிதாக மலர்ந்துள்ள கடம்ப மரத்திலும், மக்கள் குழுமியிருக்கும் மன்றத்து மரத்திலும், ஊர் அம்பலத்திலும் இறைவன் உறைவான் என்றும் அன்புடையார் இருக்கும் இடம்தேடி வந்து அவ்வன்பர் முன்நின்று முருகன் அரிள்புரியக் கூடியவன் என்பதையும் நக்கீரர் பாடியுள்ளார்.

ஐயவி தூவி வழிபட்டும், குரவைக் கூத்து ஆடியும், ஆட்டுமறியை அறுத்து அதிலிருந்து பெருகும் குருதியுடன் செந்தினையைக் கலந்து பலியாகத் தூவி வெறியாட்டு நிகழ்த்தியும், இசைக் கருவிகளை முழக்கியும் வழிபட்டனர் என்பதையும் அறியமுடிகிறது.

முடிவுரை:

திருமுருகாற்றுப்படை நூல்வழி மக்கள் இறைப்பற்றையே பற்றுக் கோடாகக் கொண்டு வாழ்ந்தனர் என்பதை அறிய முடிகிறது. மேலும் இந்நூலின் சிறப்புக் கருதி சைவநூலாகிய பதினோராந் திருமுறையில் இதனை சேர்த்துள்ளனர். பக்திச்சுவை மிகுந்த காவியமாகிய இவ்வாற்றுப்படையின் சிறப்பினை இக்கட்டுரையின் வழிநின்று உய்த்துணரலாம்.

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A Study and Analysis of E-Learning Using Rule Based Algorithms

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Abstract

E-learning is perhaps the most important development in the educational world today. E-learning has become an increasingly popular learning approach in higher educational institutions due to the rapid growth of Internet technologies. E-learning is the use of information and communication technology (ICT) to enhance and facilitate teaching and learning. The rapid development of information, communication and technologies, internet technologies and Web-based applications have initiated unparallel transformation in universities all over the world. If e-learning is a new departure in education, equal to those that guided and constrained traditional methods of delivery, then decision makers, educators, learners and the wider society can and should step beyond simple opinions about e-learning's usefulness and base their judgements on systematic assessments of its effectiveness. This research puts us in a position to determine to what extent e-learning is effective from learners' points of view.

Keywords : E-learning, FP/ ICT/ ROC, TP

I. Introduction

E-learning environments are becoming increasingly popular in educational establishments. E-learning is the use of Information and Communication Technology e.g. Internet, Computer, Mobile phone, Televisions, Radios and others to enhance teaching and learning activities. E-learning is a unifying term used to describe the fields of online learning, web-based training and technology delivered instructions. It has become an increasingly popular learning approach in higher educational institutions due to vast growth of internet technology. Today technology is a tool used to remove geographical barriers and facilitates everybody to learn anytime and anywhere without the presence of the lecturer. The main purpose of E-Learning is to increase accessibility of education and reducing costs and time as well as improving students' academic performance. This approach of learning facilitates different students at different continents to attend the same classes almost at the same time. Nowadays, technology is becoming the medium for teaching and learning without being at university campuses. This technology enabled instructional method is aimed to improve quality of education and student academic performance. It has been found that students in higher educational institutions that engaged in E-Learning, generally performed better than those in face-to-face courses. (Holley, 2002) found that students who participate in online. E-Learning achieve better grades than students who studied traditional approach. As result of this finding E-

learning is growing very fast and becoming popular and that is why many higher educational institutions are adopting to virtual learning system. E-learning is widely used in many universities in the world today.

The research project reported in this paper is a contribution to the extension of understanding of the student experience of E-learning. Qualitative data was collected from learners to offer insights into their perceptions and expectations of the experience.

Classification

Classification is a data mining function that assigns items in a collection to target categories or classes. The goal of classification is to accurately predict the target class for each case in the data. For example, a classification model could be used to identify loan applicants as low, medium, or high credit risks.

A classification task begins with a data set in which the class assignments are known. For example, a classification model that predicts credit risk could be developed based on observed data for many loan applicants over period of time. In addition to the historical credit rating, the data might track employment history, home ownership or rental, years of residence, number and type of investments, and so on.

Classifications are discrete and do not imply order. Continuous, floating- point values would indicate a numerical, rather than a categorical target. A predictive model with a numerical target uses a regression algorithm, not a classification algorithm.

This project uses one type of classification algorithm called "Rule based classification". This classification has use the following algorithms. They are,

i) OneR
ii) PART
iii) JRip

i) **OneR:** OneR short for "One Rule" , is a simple, yet accurate, classification algorithm that generates one rule for each predictor in the data, then selects the rule with the smallest total error as its "one rule". To create a rule for a predictor, we construct a frequency table for each predictor against the target. It has been shown that OneR produces rules only slightly less accurate than state-of-the-art classification algorithms while producing rules that are simple for humans to interpret.

ii) PART: It stands for Projective Adaptive Resonance Theory. It is separate –and-conquer rule learner proposed by Eibe and Witten. The algorithm producing sets of rules called decision list which are ordered set of rules. A new data is compared to each rule in the list in turn, and the items is assigned the category of the first matching rule. PART builds a partial C4.5 decision tree in its each iteration and makes the best leaf into a rule.

iii) **JRip:** JRip implements a proportional rule learner, Repeated Incremental Pruning to Produce Error Reduction (RIPPER). It is based in association rules with Reduced Error Pruning(REP), a very common and effective technique found in classification problem.

In addition weka tool produces the accuracy metrics. This accuracy metrics has some values. They are TP Rate, FP Rate, Precision and recall, F-Measure, and ROC Area.

TP Rate

True Positive (TP): If the outcome from a prediction is p and the actual value is also p, then it is called a True Positive.

FP Rate

False Positive (FP): However if the actual value is n then it is said to be a False Positive.

Precision and Recall

Precision is the fraction of retrieved instances that are relevant, while recall is the fraction of relevant instances that are retrieved. Both Precision and Recall are therefore based on an understanding and measure of relevance. Precision can be seen as a measure of exactness or quality, whereas Recall is a measure of completeness or quantity. Recall is nothing but the true positive rate for the class.

F-Measure

F-measure (also known as F1 or F-score) is a measure of test's accuracy. It considers both the Precision and the Recall of the test to compute the score. It can be interpreted as a weighted average of the Precision and the Recall, where 1 is its best value and 0 its worst. The F-measure only produces a high result when Precision and Recall are both balanced, thus this is very significant.

ROC Area

A Receiver Operating Characteristics (ROC) curve is a technique for visualizing, organizing and selecting classifiers based on their performance.

II. Literature Review

E-learning refers to the use of information and communication technology (ICT) to enhance and/or support learning in tertiary education. However this encompasses an ample array of systems, from students using e-mail and accessing course materials online while following a course on campus to programmes delivered entirely online. E-learning can be different types, a campus-based institution may be offering courses, but using E-learning tied to the Internet or other online network (Lorraine M.2007).What is E-learning? E-learning is an education via the Internet, network, or

standalone computer. E-learning is basically the network enabled convey of skills and knowledge. E-learning refers to using electronic applications and processes to learn.

E-learning applications and processes include Web-based learning, computer-based learning, virtual classrooms and digital collaboration. EL is when content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CDROM. E-learning was first called "Internet-Based Training" then "Web-Based Training" Today you will still find these terms being used, along with variations of E-learning. EL is not only about training and instruction but also about learning that is tailored to individual. Different terminologies have been used to define learning that takes place online (Lorrain, 2007; Oye , Salleh, & Iahad, 2011).

E-learning and distance learning are not quite the same thing but are different. The basic thing that distinguishes distance education is the physical separation of the students from the teacher/instructor and the class room. E-learning, nonetheless, is considered to be as part of the classroom environment from the beginning. The early use of computers and ICT were geared to support the classroom instructional methods. Gradually, as more and more personal computers became available, the thought of online classes was investigated and explored by some pioneering Colleges and Universities. The early endeavors at distance education were hampered by resistance from traditionalist within the education field (Heeger, 2007).

According to European School net, " E-learning is an ever-expanding field which is growing more popular and more recognized as time progresses so much, that an organization called "European School net" is distributing what are known as the E-learning Awards for the fourth year in a row". European School net is an international association which encourages the use of E-learning throughout all education levels, starting with the primary schooling up to higher educational institutions. The organization provides information for all parties participated in the educational process including students, teachers, and educational professionals on the diverse facets of teaching and learning with technology (Balannskat, Blamire, & Kefala, 2006).

TABLE1. Dataset for E-Learning

Class	**Frequency**	**Percentage**
Usefulness	11	11%
Material	11	11%
Disturbance	38	38%
Use + mat	3	3%
Use + dist	32	32%
Mat + dist	5	5%
Total	100	100%

III. Methodology

The primary objective of the study is to confirm the impact of e-learning on students' academic performance. The interviews were performed with 100 female students. The

students answered questions for all the quality criteria including their positive and negative experiences, further their wishes concerning E-learning courses. The answers of the students were analysed by using the weka tool and used as a basis for the development of a standardized questionnaire. They were asked about their experiences with and their wishes concerning media based courses, and conducted a comparison between media based courses and classroom teaching in respect to the quality of learning.

Dataset Name	Number of Attributes	Number of Records/Instances
Effective use of E-Learning	**25**	**100**

The data set is based on the numeric and nominal data type. The input data are fed into the Excel. This excel sheet has a main attribute called "class". The class may be usefulness, material, disturbance, and the combination of the above classes like use+mat, use+dist and mat+dist. Following table illustrate the total frequency of E-Learning .

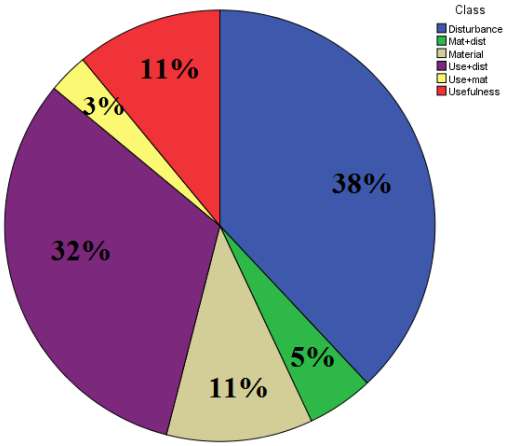

Figure1. Using SPSS tool the data has been classified as described below

Table 2 and Figure 1 describe the frequency of the given data set. From this figure , 38% of students tell the usage of E-Learning has some disturbances and 32% of students tell E-learning has both usefulness and disturbances.

Experimental Results

Table3.Prediction of Classifier

Category	Classified Instances			
	SPSS	**OneR**	**PART**	**JRip**
Usefulness	11	12	11	11
Material	11	-	11	12
Disturbance	38	47	38	40
Use+mat	3	-	3	-
Use+dist	32	41	32	32
Mat+dist	5	-	5	5
Total	100	100	100	100

Above table illustrates the difference between rule based algorithms. According to the algorithm the values are changed. Compared with OneR and JRip , the PART algorithm produces the best result. Also, the result of SPSS is same as the PART algorithm. So, the PART algorithm is better than the other algorithm.

Stratified cross-validation

Table4. Stratified cross-validation for Classification algorithms

Parameters	Classification Algorithms for 100 Instances		
	OneR	**PART**	**JRip**
Correctly Classified Instances	76%	99%	95%
Incorrectly Classified Instances	24%	1%	5%
Kappa Statistic	0.6455	0.9303	0.9303
Mean Absolute Error	0.08	0.0044	0.0293
Root Mean Squared Error	0.2828	0.0471	0.121
Relative Absolute Error	32.8004%	1.8222%	12.004%
Root Relative Squared Error	81.3146%	13.5524%	34.7839%
Coverage of Cases(0.95 level)	76%	100%	98%
Mean rel. Region Size (0.95 level)	16.6667%	17.1667%	19.5%

This table illustrates the stratified cross-validation. It has the following parameter: Correctly Classified Instances, Incorrectly Classified Instances, Kappa Statistic, Mean Absolute Error,

Root Mean Squared Error, Relative Absolute Error, Root Relative Squared Error, etc.,

Accuracy Measure

Accuracy Measure	OneR	PART	JRIp
TP Rate	0.76	0.99	0.95
FP Rate	0.105	0.001	0.015
Precision	0.612	0.991	0.923
Recall	0.76	0.99	0.95
F-Measure	0.678	0.989	0.936
ROC Area	0.828	1	0.986

This table shows the accuracy matrics for classification algorithms. From these table , the better quality of a result is determined. The Algorithm produces a good value of accuracy measure should be consider as better algorithm. According to this table, PART algorithm is better than other two algorithms.

Conclusion

E-learning has become an increasingly popular learning approach in higher educational institutions due to the rapid growth of Internet technologies. This study mainly focuses on the relationship of students' use of e-learning and their academic performance. The results from the regression analysis using 100 students studying at faculty of computer science and information systems shows that the use of E-learning improves students' academic performance. The study also examines the application of e-learning model to explain students' acceptance of the e-learning technology within the academic settings. The figures and tables presented are the representation of the interrelationship between e-learning use by students and students' academic performance. E-learning use is associated with increased students' academic performance, while perception and behavioral intention are associated with actual use of e-learning. Recommendation was that, training and information sessions on e-learning need to focus primarily on how the e-learning technology can help improve the efficiency and effectiveness of students' learning process.

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Estimation of Blood Pressure Before and After the Yoga Training in Healthy School Boys

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Abstract

The study was aimed at to estimate blood pressure before and after the yoga training in healthy school boys. To achieve the purpose of the study, thirty school boys (n=30) from Good Shepherd Matriculation Higher Secondary School, Nagercoil were selected as subjects at random. The age category was under 19. All the boys were free from disease. The selected subjects were divided in to two groups with 15 subjects each as experimental and control group. Group I underwent yogic practices for a period of six weeks of five days per week and group II acted as control who did not participate in any special training other than the regular routine. Systolic and diastolic blood pressure was selected as dependent variables and it was tested by using Digitalized Omron Blood Pressure Monitor. The dependent "t" test was applied to determine the difference between the means of two groups. To find out whether there was any significant difference between the experimental and control groups on adjusted post test means the analysis of covariance was used. To test the level of significant of difference between the means 0.05 level of confidence was fixed. It was concluded that, there was a significant improvement takes place on systolic and diastolic blood pressure due to the effect of six weeks of yogic practices and also it concluded that, there was a significant difference exists between experimental and control groups on systolic and diastolic blood pressure.

Keywords: Yoga, Yoga Techniques, Blood Pressure, Human Organ, Dependent 't' Test.

Introduction

Yoga plays an important role and has made unlimited Contribution in the modern age as it caters to the biological, Sociological, Spiritual and Physiological necessities of the man. The word 'yoga' is derived from the roots of Sanskrit' Yuj' which means to join, to attach, to bind, yoke, and a concentrate or one attention. It also means Union. Yoga is true union of our will with the will have had. The literal meaning of the word 'Yoga' is 'yoke'. It means for uniting the individual spirit with the Universal spirit, or God. Yoga means the Experience of oneness or unity with inner being. It is a science by which the individual approaches truth. Yoga is not religion it is a method by which one obtain Control of one's latent powers. It is the means to reach complete Self-Realization. Yoga is a reduction of one's mental process, along with the physical (Lakshmikanthan et al. 1979).

The practice of Yoga in the Indian subcontinent has been documented as early as B.C. Regular practice of variety of Yoga techniques have been shown to lower heart rate and blood pressure in various population (Mahajan et al. 1999).

Statement of the problem

The paper is highly significance one. Because today people are living indifferent environmental conditions, backgrounds, that cause for many health problems. However, the school boys are highly vulnerable / prevalence of more diseases which will affect human organs. In order to avoid, the present study would help to reduce those problems, definitely help them to get improved in their health as because yoga is for total living.

Hence the study was aimed at to estimate blood pressure before and after the yoga training in healthy school boys

Methodology

To achieve the purpose of the study, thirty healthy school boys (n=30) from Good Shepherd Matriculation Higher Secondary School, Nagercoil were selected as subjects at random. The age category was under 19. All the subjects were divided in to two groups with 15 subjects each as experimental and control group. Group I underwent yogic practices for a period of six weeks of five days per week and group II acted as control who did not participate in any special training other than the regular routine. Systolic and diastolic blood pressure was selected as dependent variables and it was tested by using Digitalized Omron Blood Pressure Monitor. The experimental group underwent their training programmes for five days per week (morning) over 6 weeks. Every training session lasted for 45 to 60 min. approximately. Pre and post test random group design was used for this study. The dependent "t" test was applied to determine the difference between the means of two groups. To find out whether there was any significant difference between the experimental and control groups on adjusted post test means the analysis of covariance was used. To test the level of significant of difference between the means 0.05 level of confidence was fixed.

Analysis of Data

The Analysis of dependent't' test on systolic and diastolic blood pressure of pre-test and post test means of experimental group and control group have been analyzed and presented in the following tables.

Table – I :The Summary of Mean and Dependent't' Test for the Ppre and Post Tests on Systolic and Diastolic Blood Pressure of Experimental and Control Group

Variables	Group	Number	Mean		t-value
			Pre Test	Post Test	
Systolic Blood Pressure	Experimental group	30	13.53	12.60	14.0*
	Control group	30	13.07	12.93	1.47
Diastolic Blood Pressure	Experimental group	15	100.13	92.00	14.0*
	Control group	15	99.33	98.00	0.69

* Significant at 0.05 level

Table – II: Analysis of Covariance (Ancova) on Systolic and Diastolic Blood Pressure of Experimental and Control Group

Variables	Adjusted post test means		Source of variance	Sum of squares	df	Mean square	F - ratio
Systolic Blood Pressure	Experimental group	Control group	Between	426.750	1	426.750	16.701*
	91.214	98.786	Within	689.931	27	25.533	
Diastolic Blood Pressure	Experimental Group	Control Group	Between	167.73	1	167,73	92.34*
	31.15	26.39	Within	49.05	27	1.82	

* Significant at 0.05 level

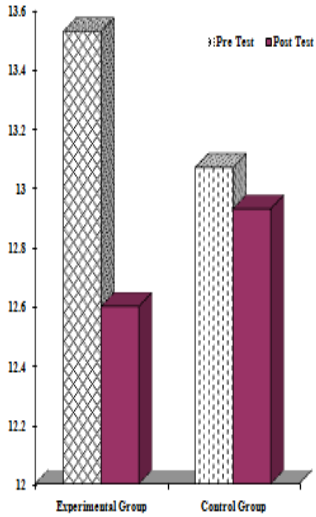

FIGURE I: MEAN VALUES FOR THE PRE AND POST TESTS ON SYSTOLIC BLOOD PRESSURE OF EXPERIMENTAL GROUP AND CONTROL GROUP

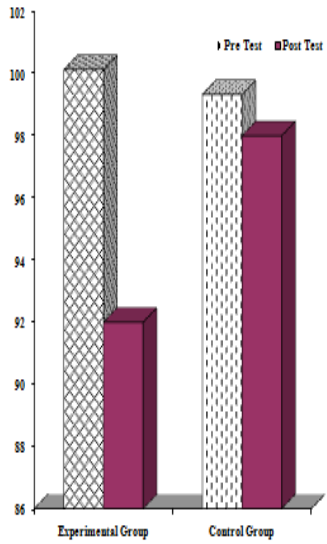

FIGURE II: MEAN VALUES FOR THE PRE AND POST TESTS ON DIASTOLIC BLOOD PRESSURE OF EXPERIMENTAL GROUP AND CONTROL GROUP

(The table value required for significance at 0.05 level with df 1 and 27 is 4.21)

Discussion on Findings

The result of study indicated that there was significant difference exists between the adjusted post test means of experimental and control group on systolic and

diastolic blood pressure. The result of this study is reported by many of the research findings.

The study of smith et al, (2007) revealed that there were highly significant reduction in the pulse rate, Systolic Blood Pressure and Diastolic Blood Pressure (Mm of Hg) after the six (6) months of yoga practice.

Yoga significantly improves the level of stress and anxiety but that improvements were not any greater those of the relaxation group. Yoga acts as an effective treatment for hypertension through the reduction of stress (Schmidt T., Wijga A., Vonzur Muhlen A., Brabant, G., & Wagnar, 1997).

A significant improvement in the level of blood pressure and body mass index after three (3) months residential training consisting of vegetarian diet and Kriya yoga. In a randomized trial, yoga was found to be equally effective as antihypertensive therapy over an 11 weeks period (Negi Vidya Bandhu, 2006).

The mechanism of reduction of blood pressure has been considered to be restoration of bar receptor sensitively by yoga (Tiwari 1983., & Tulpule, 1980).

Present study also confirms the view point of (Upadhyay et al. 2008). It concluded that, the blood pressure (S.B.P & D.B.P) was decreased continually after the six (6) months of yoga.

It is inferred from the literature and from the result of the present study, many research studies have been done on the usefulness of yoga in the treatment of various lifestyle related diseases especially cardiovascular disease. It is proved that yoga has significant and healthy impact on the life style of the person. The findings of the study revealed statistically significant in the respect of systolic and diastolic blood pressure.

Conclusion

On the basis of the results obtained from the present empirical investigation and within the limitation, the following conclusions are drawn after giving the six weeks of yoga practice.

1. There was a significant improvement takes place on systolic and diastolic blood pressure due to the effect of six weeks of yogic practices.

2. There was a significant difference exists between experimental and control groups on systolic and diastolic blood pressure.

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The Overview of CSR in Multinational Companies in India

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Abstract

Corporate scandals and unethical practices which has increased considerably puts pressure on companies to communicate Information related to Corporate Social Responsibility (CSR). CSR is a concept, where by organizations consider the interests of the society by taking responsibility for the impact of their activities on customers, suppliers, employees, shareholders, communities, and other stakeholders, as well as the environment. Critics of CSR argue that the CSR distracts the fundamental economic role of businesses aganist the argument, beyond making profits, companies are responsible for the totality of their impact on stake holders and the planet. The CSR activities are related to the responsibility of the company towards society and also the welfare of the company. Therefore this paper portrays the CSR activities of various multinational companies which rewarded them with a competitive advantage.

Keywords: *Multinational Companies, CSR, CSR Activities, Cognizant, CSR Distracts*

Introduction

Business houses, right from the inception of human race, have been regarded as constructive partners in the communities in which they operate. Though they have been instrumental in creating employment, wealth, products and services, yet the pressure on business to play a role in social issues involving employees, stakeholders, society, environment, government etc. is continuously increasing. In response to it, the organizations around the globe are forced to wake up to the need for being committed towards Corporate Social Responsibility. Over the years this concept of Corporate Social Responsibility (CSR) has gained unprecedented momentum in business and public debate and has become a strategic issue crossing the departmental boundaries, and affecting the way in which a company does business. It has become so important that many organizations have rebranded their core values to include social responsibility. Today, more and more companies are realizing that in order to stay productive, competitive and relevant in a rapidly changing business world, they have to become socially responsible.

CSR in Company Practice:

Even though the idea of CSR has been long known, to a certain extent the reality does not correspond with company needs. Entrepreneurs usually perceive CSR as something that is separated from enterprising, something that they rather designate as company philanthropy to which they can turn only after they have met the industrial, technological, commercial and other professional standards. The current trend in

perceiving of company social responsibility only as invested funds associated to philanthropy is to be refused in principle. Philanthropy activities should not supplement the insufficiency of tax measures or conceal system mistakes and obstruct their elimination. The modern society is characterized by its specialization and professionalism; and philanthropy should not supplement poorly functioning institutions. It is neither possible to understand company social responsibility as "funding" of certain groups of citizens who on one hand want to consume certain goods (e.g. concerts, sport match, etc.) but on the other hand are not willing to pay for them to the full extent. CSR is often mentioned within the context of complying with legal standards or ethical principles within a company, e.g. the participation of women in the company's management, the company's respect to environment, etc.

Multinational companies and their CSR activities in India

1) PepsiCo-Corporate Social Responsibility

About PepsiCo India

PepsiCo Company entered India in 1989 and has grown to become the country's largest selling food and Beverage Company. One of the largest multinational investors in the country, PepsiCo nourishes consumers with a range of products from treats to healthy eats that deliver joy as well as nutrition and always, good taste. PepsiCo India's expansive portfolio includes iconic refreshment beverages Pepsi, 7 UP, Mirinda and Mountain Dew, in addition to low calorie options such as Diet Pepsi, hydrating and nutritional beverages as Aquafina drinking water, isotonic sports drinks - Gatorade, Tropicana 100% fruit juices, and juice based drinks - Tropicana Nectars, Tropicana Twister and Slice, non-carbonated beverage and a new innovation Nimbooz by 7Up. Local brands - Lehar Evervess Soda, Dukes Lemonade and Mangola add to the diverse range of brands.

CSR Motto

Performance With Purpose articulates PepsiCo India's belief that its businesses are intrinsically connected to the community and world that surrounds it.

They are committed to 'Performance with Purpose' - achieving business and financial success while leaving a positive imprint on society.

CSR activities

Activities are divided in 4 parts

1. **Replenishing Water:** They pioneered several major initiatives to Replenish water in communities. Their goal is to conserve, replenish and thus offset the water used in their manufacturing process through community water recharge projects and water conservation projects in agriculture

2. **Solid Waste Management Programme:** They continues to strengthen its Solid Waste Management initiatives in partnership with Exnora, an environmental NGO.

    - They generate partnership with leading environmental NGO, Exnora, a pioneer in waste management and by converting waste of Bio-degradable into high quality organic manure through vermi-culture.

    - The Community members enjoy the benefits of a clean environment and are educated on how to recycle waste, not just relocate it. Recyclable waste such as PET and plastics, waste paper and tetra packs are recycled.

3. **Partnership with Farmers:** They continues to strengthen the partnerships with farmers across the country to boost farmers productivity and income to get more and earn more. Through **Helping farmers improve yield and income, High Quality Seed Program, Contract Farming, Partner In Progress Model, Potato Farming, PepsiCo Citrus Project**

4. **Healthy Kids:** They are giving Get Active & a Good Nutrition and Active Lifestyle Program for Children growth and implementation. Get Active programs have a central objective: to raise awareness about importance of balanced nutrition and regular physical activity for a healthy lifestyle among school children. It believes in combining simplicity and enjoyment. The basic principle is simple and to establish the fundamentals of Calories In = Calories Out.

2) ONGC -Corporate Social Responsibility

About the company

Oil and Natural Gas Corporation Limited (ONGC) is state owned Oil and Natural Gas company founded on 14 Aug 1956. It is a Fortune Global 500 company ranked 413, and contributes 77% of India's crude oil production and 81% of India's natural gas production. It is the second highest profit making corporation in India. ONGC is Asia's largest and most active company involved in exploration and production of oil. It is involved in exploring for and exploiting hydrocarbons in 26 sedimentary basins of India.

CSR Motto

ONGC which has been given the status of a 'maharatna' by the government will be striving to get the same status in Corporate Social Responsibility,

CSR activities

- Education including vocational courses, Health Care.
- Entrepreneurship (self help and livelihood generation) scheme.
- Infrastructure support near our operational areas.

- Environment protection, ecological conservation, promotion, Protection of heritage sites, UNESCO heritage monuments etc.
- Promotion of artisans, craftsman, musicians, artists etc. for preservation of heritage, art and culture.
- Women's empowerment, girl child development, gender sensitive projects.
- Promoting sports/sports persons; supporting agencies promoting sports/sports persons, Water management including ground water recharge.
- Initiatives for physically and mentally challenged, Sponsorship of seminars, conferences, workshops etc.

3) Cognizant- Corporate Social Responsibility

About the company

Cognizant Technology Solutions (Cognizant) is a U.S. based multinational provider of business, technology and consulting services headquartered in Teaneck, New Jersey, United States. Performing U. S. companies, the Business Week Hottest Tech Companies 2010 and the Forbes Fast Tech 2010 list of 25 Fastest Growing Technology Companies in America.

CSR activities

Cognizant Chennai

In 2008, Outreach distributed 50,000 notebooks to over 5000 students in seven schools around Chennai. Outreach decided to give the initiative a pan-India footprint and has accrued funds from 7,000 associates of Cognizant. Till date, around 15,000 students have received over 100,000 notebooks made from eco-friendly materials.

Cognizant Pune

- The Cognizant Foundation, the corporate social responsibility arm of Cognizant Technology Solutions, has extended financial aid to five Maharashtra-based non-Government organisations. The aid is to the pune of Rs 40 lakh.
- The funding for all these projects comes from the parent organisation as also from individual donors.
- It was looking at instituting scholarships for the school and college going students and noted that the feasibility study was under progress

4) Tata Steel- Corporate Social Responsibility

About the company

Tata Steel has not limited its operations and businesses within India but has built an imposing presence around the globe as well. With the acquisition of Corus in 2007 leading to commencement of Tata Steel's European operations, the Company today is the tenth largest steel producer in the world with employee strength of above 81,000 across five continents. The global companies have helped the Company create a

manufacturing and marketing network in Europe, South East Asia and the Pacific-rim countries.

CSR activities

1. **Lifeline Express:** It is not a regular trains which are run for normal passengers. Jeevan Rekha Express is another name which is used by people for this train. On the spot advanced medical diagnosis and surgical treatments are offered to the people who need them. Apart from this, the Lifeline Express also tries to encourage the local people to help the people in need. It tries to make the people aware.
2. **Aids Awareness Programs:** On the occasion of World AIDS Day, TATA Steel Ltd flagged off an initiative of Awareness on Aids campaign. It is a two day campaign to cover a host of prominent colleges and locations all across Kolkata. The awareness programs, involved children and community members to be the agents of mass awareness for preventing the spread of deadly HIV/AIDS virus.
3. **Greenfection:** Greenfection is the resolve to "infect" the whole of India with the will to change towards a greener future. Tata Steel had tied up with the World Wildlife Federation, Star News, MTV, National Geographic and Radio Mirchi 98.3 FM to work on several programmes under this initiative. Today, a world without biodiversity has a very bleak future. Millions of people and millions of species all share the same planet, and only together can we enjoy a safer and more prosperous future.

5) Tata Global Beverage Ltd -Corporate Social Responsibility

About the company

The Tata name has been respected for more than 140 years and is trusted for its adherence to strong values and business ethics. Tata companies with significant scale include Tata Steel, Tata Motors, Tata Consultancy Services (TCS), Tata Power, Tata Chemicals, Tata Global Beverages, Tata Teleservices, Titan, Tata Communications and Indian Hotels.

CSR activities

They focus on activities with the potential to move the 'centre of gravity for implementation' from the global sustainability team to regional and functional teams across the business.

Community Development, Employees' Welfare and Environment Conservation Their commitment to community development and social welfare continues through its initiatives such as the General Hospital, Srishti Welfare Centre and High Range School in Munnar. The General Hospital conducted an extensive programme to increase public awareness on HIV/AIDS. During the year under review, the General

Hospital provided treatment (including surgeries and deliveries) to a large number of people.

6) Citi India- Corporate Social Responsibility

About the company

The Corporate Citizenship function is the umbrella entity for all Corporate Social Responsibility activities undertaken by Citi India. In 2012 Citi India partnered with 11 NGOs and committed grants totaling more than INR 98 million towards Financial Capability and Asset Building, Youth Education and Livelihoods, Enterprise Development and Microfinance. Since 1999, such Citi Foundation grants have catalyzed opportunities for approximately 1.65 million people across the country through innovative projects with over 24 NGOs.

CSR activities

Employability Education for India's Youth Program, Sustainable Livelihoods for Rural Producers Program, Desert Pastorale Program, Green for the Green - Investor Forum 2011, Art and Culture, Child Welfare.

7) IBM- Corporate Social Responsibility

About the company

IBM believes that a company culture based on core values not only helps our business, but also defines the role that we can and should play in society and we integrate corporate citizenship and social responsibility into every aspect of our company. By training the trainers, the program is expected to reach over 1000 teachers and nearly 200 schools across these four states.

ICT enabled project provides "smart' information to Rural Entrepreneurs in Lucknow

The integrated team of IBM On Demand Community Volunteers and members of the Drishtee Foundation have been working diligently on this community cause.

India highlights

- IBM has been present in India since 1992.
- IBM is the biggest multinational software exporter in India.

8) Sony corporation- Corporate Social Responsibility

About the company

It is the core corporate responsibility of Sony Group to the society to pursue its corporate value enhancement through innovation and sound business practice. Sony Group recognizes that its business activities have direct and indirect impact on the societies. The Sony Group recognizes that its businesses have direct and indirect impact

on the communities in which we operate. Find out how Sony is contributing towards being a positive global citizen.

CSR activities

- **Education**: Sony science program, Sony student project abroad, Youth on assignment project, Sony education foundation
- **Environment:** People need nature**,** Project for forest conservation in Sumatra
- **Major disasters:** Restart Japan, Emergency relief

Conclusion

In the ever changing markets Globalization and liberalization are the buzz words. Many of the leading corporations across the world had realized the importance of being associated with socially relevant causes as a means of promoting their brands. Now a day's Firms and workers all together works as a family and work for achieving the common goals. Profit sharing is the main agenda of the corporate houses. Those days have gone when basic business of business is to earn profits only. As per the changing market demands need of the hour is for the development of CSR framework that has been imposed by the government. So that, we can contribute to make better planet to live in. Thus, CSR becoming a fast-developing and increasingly competitive field, the case for demonstrating corporate responsibility is getting stronger as expectations among key opinion formers, customers and the public are increasing.

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Comparative Analysis of Psychological Characteristics among Intercollegiate Women Jumpers Sprinters and Throwers

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Abstract

The purpose of this study is to find out the level of achievement motivation, intrinsic motivation, Extrinsic motivation, Cognitive Anxiety, Somatic anxiety and Self-confidence among intercollegiate women jumpers, sprinters and throwers. To achieve the purpose of the study ninety subjects were selected from affiliated colleges of Manonmanium Sundaranar University namely Govindammal Aditanar College for women, Tiruchendur, St Mary's college for women, Thoothukudi, Sri Sarada College for Women, Tirunelveli, Sarah Tucker College for women, Tirunelveli and Women Christian College, Nagercoil. The criterion variables selected for this study were Achievement motivation, Intrinsic Motivation, Extrinsic motivation, Cognitive Anxiety, Somatic Anxiety and Self Confidence. To collect the required information for the present study standardized inventory were used. The cognitive state Anxiety, somatic state Anxiety, self confidence inventory-2 [(SAT -2)] was used to assess state anxiety, somatic anxiety and self-confidence. The Intrinsic motivation, Extrinsic Motivation Inventory (SMS-28) was used to assess Intrinsic motivation, Extrinsic Motivation and Sports Achievement motivation test was used to assess achievement motivation. From the result of the study, it was concluded that there was no significant difference among jumpers, sprinters and throwers on achievement motivation; intrinsic motivation; extrinsic motivation; cognitive anxiety; somatic anxiety and self-confidence.

Keywords: Motivation, Anxiety, Confidence and athletes

Introduction

Physical Education is an educational process that has as its aim the improvement of human performance and enhancement of human development through the medium of physical activities selected to realize this outcome. Sports Psychology focuses on learning performance and training performance (Abrahamsen, et al., 2008). Sports psychology is concerned with analyzing human behavior in various types of sport settings. Specifically motivation, anxiety and confidence of the participants and their behaviors, plays a vital role in providing a distinct advantage for success in their chosen sports. Motivation included skill improvement, the inherent challenges of the sport, the excitement and thrills and the achievement of personal performance goals. extrinsic in nature, such as winning, receiving trophies and awards, and pleasing others were termed as extrinsic motivation (Colker & Widom, 1980). Intrinsic motivation is enhanced by feelings of self-confidence and perceived competence. Anxiety of both mental and bodily aspects termed as cognitive and somatic anxiety also provides the means and methods of

clipping the successes. The purpose of this study is to find out the level of achievement motivation, intrinsic motivation, Extrinsic motivation, Cognitive Anxiety, Somatic anxiety and Self-confidence among intercollegiate women jumpers, sprinters and throwers.

Methodology

To achieve the purpose of the study ninety subjects were selected from affiliated colleges of Manonmanium Sundaranar University namely Govindammal Aditanar College for women, Tiruchendur, St Mary's college for women, Thoothukudi, Sri Sarada College for Women, Tirunelveli, Sarah Tucker College for women, Tirunelveli and Women Christian College, Nagercoil. The subjects age ranged from 18-26 years. The subjects who participated in the intercollegiate athletic tournaments during the year 2014-15 were only selected. The criterion variables selected for this study were Achievement motivation, Intrinsic Motivation, Extrinsic motivation, Cognitive Anxiety, Somatic Anxiety and Self Confidence. To collect the required information for the present study standardized inventory were used. The cognitive state Anxiety, somatic state Anxiety, self confidence inventory-2 [(SAT -2)] prepared by **Martens, Vealey and Burton (1990)** was used to assess state anxiety, somatic anxiety and self-confidence. The Intrinsic motivation, Extrinsic Motivation Inventory (SMS-28) prepared by **LUC G. Pelletier, Michelle Fortier, Robert J. Vallerand Nathalie M.Briere, Kim M. Tuson and Marc R. Blais (1995)** was used to assess Intrinsic motivation, Extrinsic Motivation and Sports Achievement motivation test prepared by **Speielblerger (1961)** was used to assess achievement motivation. The design used for this study was static group comparison design. The collected data were statistically analyzed by using 'ANOVA' to find out the significant difference among inter-collegiate jumpers, sprinters and throwers. Significant level was fixed at 0.05 level of confidence.

Results and Discussion

The analysis of variance on data obtained on achievement motivation of three difference events have been analyzed and presented in Table - I.

Table – I: Analysis of Variance on Achievement Motivation of Three Different Events

Mean			Sources of Variance	Sum of Square	df	Mean Squares	F-ratio
Jumpers	Sprinters	Throwers					
25.20	25.26	25.40	Between	.622	2	.311	.008
			Within	3505.86	87	40.29	

(Achievement Motivation scores are in Numbers)

(The table value required for significance at 0.05 level with df 2and 87 is 3.10)

Table I shows that the mean values of three different events like jumpers, sprinters and throwers are 25.20, 25.26 and 25.40 respectively. The obtained "F" ratio

value is .008 which less than the table value of F- ratio 3.10 with df 2 and 87 required for significance at 0.05 level. Since the value of F-ratio less than the table value, it indicates that there is no significance difference exists among the means of three different events on achievement motivation.

The analysis of variance on data obtained on intrinsic motivation of three difference events have been analyzed and presented in Table – II.

Table – IIi: Analysis of Variance on Intrinsic Motivation of Three Different Events

Mean			Sources of Variance	Sum of Square	df	Mean Squares	F-ratio
Jumpers	Sprinters	Throwers					
43.83	43.80	44.20	Between	2.956	2	1.478	.011
			Within	12101.767	87	139.101	

(Intrinsic Motivation scores are in Numbers)

(The table value required for significance at 0.05 level with df 2and 87 is 3.10)

Table - II shows that the mean values of three different events like jumpers, sprinters and throwers are 43.83, 43.80 and 44.20 respectively. The obtained "F" ratio value .011 which less than the table value of F- ratio 3.10 with df 2 and 87 required for significance at 0.05 level. Since the value of F-ratio less than the table value, it indicates that there is no significant different existing among the means of three different events on intrinsic motivation.

The analysis of variance on data obtained on extrinsic motivation of three difference events have been analyzed and presented in Table - III.

Table – III: Analysis of Variance on Extrinsic Motivation of Three Different Events

Mean			Sources of Variance	Sum of Square	df	Mean Squares	F-ratio
Jumpers	Sprinters	Throwers					
44.43	43.13	44.76	Between	44.689	2	22.344	.153
			Within	12700.200	87	145.979	

(Extrinsic Motivation scores are in Numbers)

(The table value required for significance at 0.05 level with df 2and 87 is 3.10)

Table- III shows that the mean values of three different events like jumpers, sprinters and throwers are 44.43, 43.13 and 44.76 respectively. The obtained "F" ratio value .153 which less than the table value of F- ratio 3.10 with df 2 and 87 required for significance at 0.05 level. Since the value of F-ratio less than the table value, it indicates that there is no significant difference existing among the means of three different events on extrinsic motivation.

The analysis of variance on data obtained on cognitive anxiety of three difference events have been analyzed and presented in Table IV. Table - IV shows that the mean values of three different events like jumpers, sprinters and throwers are 20.23, 22.26 and 21.20 respectively. The obtained "F" ratio value 1.020 which less than the table value of F- ratio 3.10 with df 2 and 87 required for significance at 0.05 level. Since the value of F-ratio less than the table value, it indicates that there is no significance difference existing among the means of three different events on cognitive anxiety.

Table – IV: Analysis of Variance on Cognitive Anxiety of Three Different Events

Mean			Sources of Variance	Sum of Square	df	Mean Squares	F-ratio
Jumpers	Sprinters	Throwers					
20.23	22.26	21.20	Between	62.067	2	31.033	1.020
			Within	2646.033	87	30.414	

(Cognitive Anxiety scores are in Numbers)

(The table value required for significance at 0.05 level with df 2and 87 is 3.10)

The analysis of variance on data obtained on somatic anxiety of three difference events have been analyzed and presented in Table - V.

Table – V: Analysis of Variance on Somatic Anxiety of Three Different Events

Mean			Sources of Variance	Sum of Square	df	Mean Squares	F-ratio
Jumpers	Sprinters	Throwers					
21.26	24.23	24.33	Between	182.156	2	91.078	2.465
			Within	3213.900	87	36.941	

(Somatic Anxiety scores are in Numbers)

(The table value required for significance at 0.05 level with df 2and 87 is 3.10)

Table - V shows that the mean values of three different events like jumpers, sprinters and throwers are 21.26, 24.23 and 24.33 respectively. The obtained "F" ratio value 2.465 which less than the table value of F- ratio 3.10 with df 2 and 87 required for significance at 0.05 level. Since the value of F-ratio less than the table value, it indicates that there is no significance difference existing among the means of three different events on Somatic anxiety.

The analysis of variance on data obtained on self-confidence of three difference events have been analyzed and presented in Table VI.

Table – VI: Analysis of Variance on Self-Confidence of Three Different Events

Mean			Sources of Variance	Sum of Square	df	Mean Squares	F-ratio
Jumpers	Sprinters	Throwers					
26.76	26.06	27.93	Between	53.356	2	26.678	.629
			Within	3709.100	87	42.633	

(Self-confidence scores are in Numbers)

(The table value required for significance at 0.05 level with df 2and 87 is 3.10)

Table - VI shows that the mean values of three different events like jumpers, sprinters and throwers are 26.76, 26.06 and 27.93 respectively. The obtained "F" ratio value .629 which less than the table value of F- ratio 3.10 with df 2 and 87 required for significance at 0.05 level. Since the value of F-ratio less than the table value, it indicates that there is no significance difference exists among the means of three different events on self-confidence.

Conclusion

From the result of the study, it was concluded that there was no significant difference among jumpers, sprinters and throwers on achievement motivation; intrinsic motivation; extrinsic motivation; cognitive anxiety; somatic anxiety and self-confidence. Since the research was conducted on only five college players and the sample size was only 30 of each college, the results may be due to the limiting factors, such as geographical region as well as parental cultural influence on their children. Hence the researcher, recommended for further study as having big sample study as well as considering the parental influence on the children for sports field as one of the criterion variables.

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VHDL Based Image Correction and Analysis of the Dominating Technique

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Abstract

In this paper, Digital image processing refers to their processing of two dimensional picture by a digital computer. Digital image is composed of a finite number of elements called picture elements or pixels. An image is generally degraded by noise. Noise occurs during image capture, transmission or processing. Some of these noises are salt and pepper noise, gaussian noise and uniform noise.

These noises can be removed by two kinds of filters either linear or nonlinear filters. The nonlinear filters which we use for filtering operation are median, midpoint and trimmed.

The aim of the paper is to remove the pepper noise by using median filter and also there is possibility to change image matrix value in to connected graph and find the dominating set and dominating number for the image matrix value for better result with help of dominating technique in graph theory.

The equivalent two dimensional matrix representation having picture for the image is generated using MATLAB-programming and the program for median filter process are simulated using VHDL and in this paper we try to include the dominating methods in image processing. In the graph theory, a ***dominating set*** *for a connected graph* $G = (V, E)$ *is a subset* S *of* V *such that every vertex not in* S *is adjacent to at least one vertex of* S*. The* ***domination number*** $\gamma(G)$ *is the number of vertices in a dominating set of* G*.*

Keywords*: Mat Lab, Content analysis, Image Processing, Image Enhancement, Connected Graph, Dominating Set and Dominating Number.*

Introduction

Digital image processing refers to processing of two dimensional picture by a digital computer. An image is a two dimensional function $f(x, y)$, Where X and Y are spatial co-ordinates and the intensity or gray level of the image at that point. Digital image is composed of a finite number of elements called picture elements, image

elements, pels and pixels. The image may be in the form of slide, photograph or chart.Digital image processing operation can be broadly grouped into five fundamental classes.

- Image enhancement
- Image restoration
- Image analysis
- Image compression
- Image synthesis

Image Enhancement

Image enhancement operation improves the quality of an image. They can be used to improve an images contrast and brightness characteristics(except color), reduce its noise content or sharpen its details.

Image enhancement technique may be grouped as either subjective enhancement or objective enhancement.

Subject enhancement technique may be repeatedly applied in various forms until the observer feels that the image yields the details necessary for particular application.

Objective image enhancement correct an image for know degradations. Here distortions are known degradations. and enhancement is not applied arbitrarily. This enhancement is not repeatedly but applied once based on the measurements taken form the system.

Noise

The principal sources of noise content in digital images arise during image acquisition or transmission.

Consider a noisy image $F(x, y)$ formed by the addition of noise $f_x(x, y)$ to an original image $f_y(x, y)$.By Mathematically in two dimensional random variable we write if x and y are independent then we write

$$F(x, y) = f_x(x, y) * f_y(x, y)$$

The objective is to reduce the noice content. Some of the important noises are

- Gaussian noise
- Rayleigh noise
- Erlang noise
- Exponential noise
- Uniform noise
- Impulse noise (Salt and pepper noise)

The image corrupted by impulse noise is the only one that is visually indicative. It appears as white and black dots which resembles salt and pepper granules and hence

the terms impulse or salt and pepper noise. To filter these noises we go for spatial filtering.

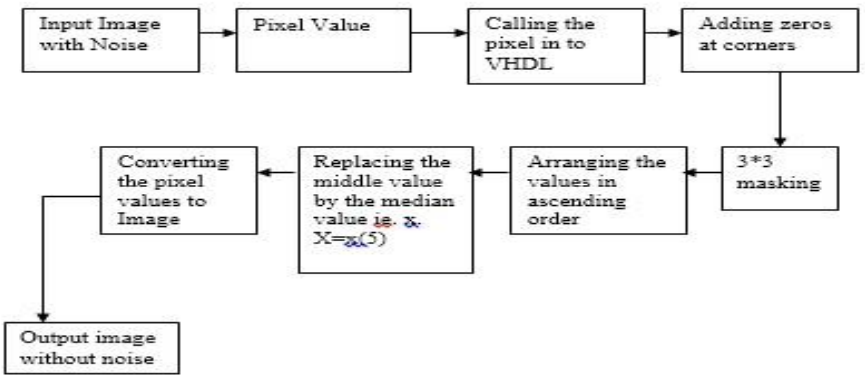
Spatial Filtering

Spatial filtering work with the values of the image pixels in the neighborhood and the corresponding values of a sub image that has the same dimensions as the neighborhood. The sub image is called, filter, mask, template, window or kernel. The value in the filter sub image are referred to as coefficients.

The process consists of moving the filter mask from point to point in an image. At each point (x, y) the response of the filter at that point is calculated using a predefined relationship. Spatial filters may be linear or nonlinear.

For linear spatial filtering the response is the sum of the products of the filter coefficients and the corresponding image pixels in the area spanned by the filter mask.

Block Diagram



Software Description

Matlab

MATLAB is a high performance language for technical computing. It integrates computation, visualization, and programming in an easy -to- use environment problems and solutions are expressed in familiar mathematical notation typical uses include math and computation

- Algorithm development
- Modeling, simulation, and prototyping
- Data analysis, exploration, and visualization
- Scientific and engineering graphics

- Application development, including graphical user interface building

MATLAB is an interactive system whose basic data element an array that does not require dimensioning. This allows you to solve many technical computing problems, especially those with matrix and vector formulations, in a fraction of the time it would take to write a program in a scalar non language such as *C* or *FORTRAN*.

The name *MATLAB* stands for matrix laboratory. *MATLAB* was originally written to provide easy access to matrix software developed by the *LINPACK* and *EISPACK* projects. Today, *MATLAB* uses software developed by the *LAPACK* and *ARPACK* projects, which together represent the state- of-the-art in software for matrix computation.

MATLAB has evolved over a period of years with input from many users. In industry, *MATLAB* is the tool of choice for high-productivity research, development, and analysis.

VHDL Design

VHDL is an acronym for *VHSIC* hardware description language (*VHSIC* – Very High Speed Integrated Circuits) *VHDL* is a hardware description language that can be used to model a digital system ranging from algorithmic level to the gate level.

The *VHDL* language is an integrated amalgamation of the following languages.

- Sequential Language +
- Concurrent Language +
- Net – list Language +
- Timing specifications +
- Waveform generation language – *VHDL*

The language not only defines the syntax but also defines the situation semantics for each language construct. Models written in this language can be verified using *VHDL* simulator.

- The language can be used as an exchange medium between chip vendors and CAD tool users.
- The language supports flexible design methodologies: top-down bottom –up mixed.
- The language supports hierarchy
- It supports both synchronous and asynchronous timing models.
- Various modeling techniques such as finite stat machine descriptions, algorithmic descriptions and Boolean equations can be modeled using the language.

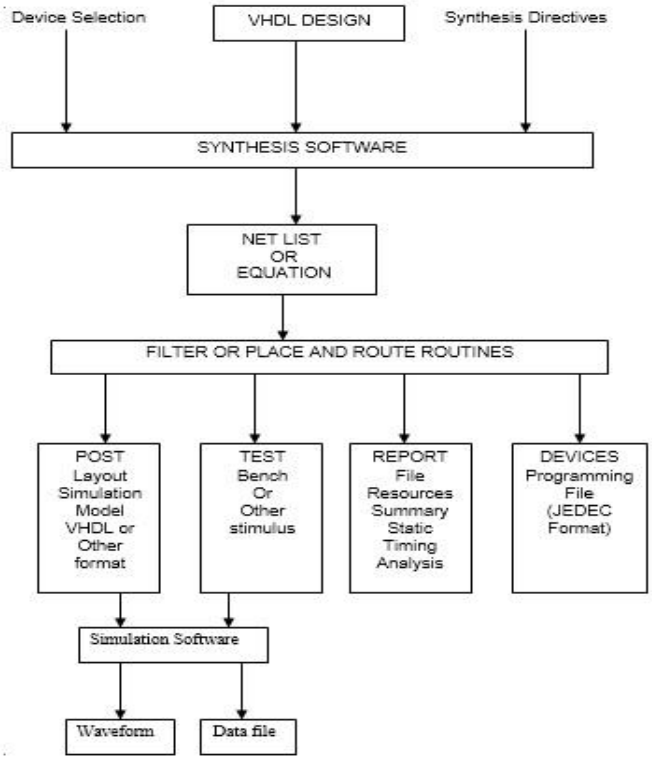
- The language supports three basic description styles. Structural data flow and behavioral.
- Large designs can be modeled using the language and there are no limitations imposed by the language on the size of a design.

VHDL Design Process

The design process in $VHDL$ consist of the following steps.

- Formulate the design
- Code the design
- Simulate the source code
- Synthesize, optimize and fit design

Flow Diagram



The flow diagram shows the inputs and outputs for each tools used in the design process.

- The inputs to the synthesis s/w and the *VHDL* design source code, synthesis directives and device selection.
- Synthesis, directives are used to influence the synthesis and fitting process.
- Device selection is required at this stage in order to perform device specific synthesis and optimization.
- The output of the synthesis and architecture specific netlist or set of equations is used as the input to the filter.
- Directives may be passed from the synthesis to the filter s/w by embedding information in the intermediate file.
- The filter or place and route performs the task of fitting or placing and routing the output of this tools.
- The device programming files is used with the device programmer and other s/w to program a *PLD*. The post layout simulation model may be a *VHDL* model that can be simulated or some other format including verilog.
- Multiple formats are typically supported by a vendor so that they can fit into the numerous environment of its customers.
- The simulation model along with a test bench or other simulation format is used as input to the simulation s/w.
- The output of simulation process s/w are often waveforms or data files.

WARP

warp is from cypress technology. *WARP* consist of galaxy which is a source coded editor and active *HDL* simulation . galaxy is used to write the program . after saving the file we select the device. There are two types of device.

CPLD: Complex programmable logic device

SPLD: Programmable logic device.

Cypress new delta 39k *CPLD* family based on a 18,6 layer metal *CMOS* logic process represents a major milestone in the programmable logic industry for the first time. Engineers can design with a family that combines the high speed, predictable timing and ease of use of a *CPLD* with devices ranging from 50,000 to 350,000 usable gates, the family features devices ten times the sine of the largest *CPLDs* previously available. Even at their tremendous densities, the Delta 39k family features pin-to-pin propagation delay of just 7.0 ns and is more than fast enough to implement a fully synthesizable 64-bit, 66Mhz PCL core.

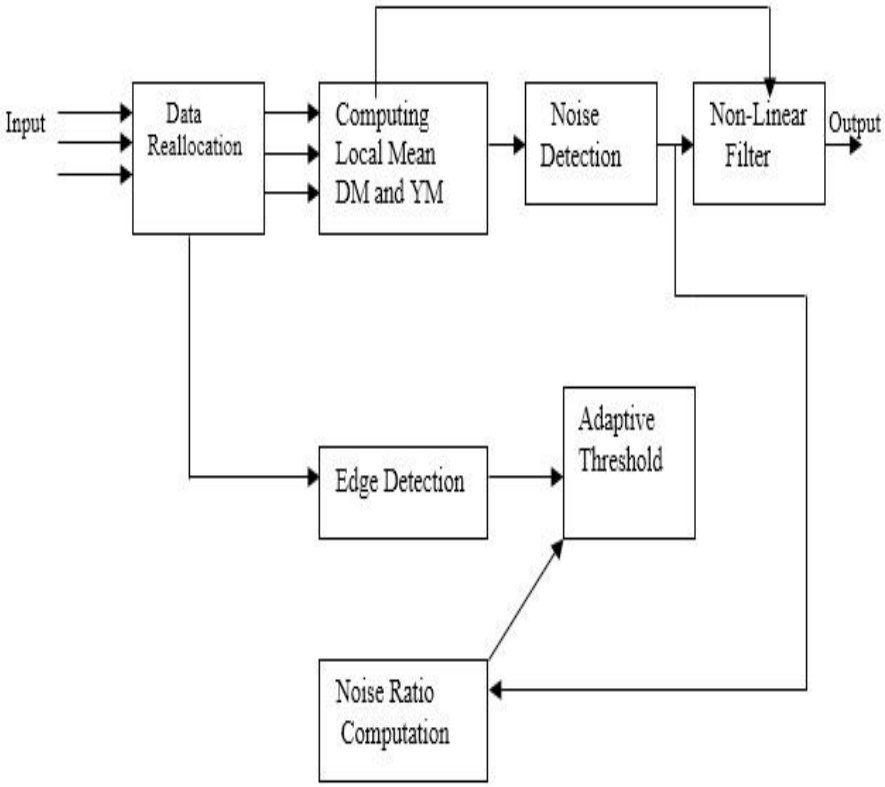
After the device has been selected the compilation is done. After the compilation is done successfully simulation is done.

Active-*HDL* Overview

Active-*HDL* is an integrated environment designed for development of *VHDL*, Verilog, *EDIF* and mixed *VHDL* Verilog-*EDIF* designs. It comprises three different design entry tools, *VHDL*'93 compiler, Verilog compiler, single simulation kernel,

several debugging tools, graphical and text simulation output viewers, and auxiliary utilities designed for easy management of resource files, designs, and libraries.

System architecture of the proposed noise-reduction processor



The system architecture of the proposed processor is shown in the data flow diagram. Three scanning lines are input to the processor in parallel. In the first step, input data are reallocated for computing some parameters. The local mean, ED, and NR are then calculated in parallel during one cycle. The threshold value is adaptively adjusted using these parameters. At the same time, the input pixel is checked to see whether or not it is noisy. Finally, the nonlinear filter is implemented for filtering a noisy pixel based on the result of ND.

Description

The proposed algorithm is split into two parts forimpulsenoise removal, i.e., noise detection (ND) and adaptive filter. Take f_{ij} as the currently processed pixel, the pixel of the previous scanning line $f^{\wedge}_{i-j+m}$ (=-1,0,1) and the pixel of the current scanning line $f^{\wedge}_{i,j-1}$ that have been filtered. Next, the mean of the done-filtered pixels around the currently processed pixel f_{ij} is computed by

$$DM_{ij} = \frac{f^{\wedge}_{i-1,j-1} + f^{\wedge}_{i-1,j} + f^{\wedge}_{i-1,j+1} + f^{\wedge}_{i,j-2}}{4}$$

whereDM_{ij} denotes the local mean of the demo pixels for the current pixel. Aside from DM_{ij} another parameter is needed to represent the mean of pixels that have not yet been processed, which can be expressed by

$$YM_{ij} = \frac{f_{i,j+1}+f_{i+1,j-1}+f_{i+1,j}+f_{i+1,j+1}}{4}$$

where $f_{i,j+1}$ and $f_{i+1,j+m}$ represents a not-yet processed pixel in the current scanning line and the following one, respectively. DM_{ij} and YM_{ij} values offer a local mean feature for the processed pixel if the processed pixel is unaffected by impulse noise, its gray value is close to DM_{ij} or YM_{ij}. Thus, ND can be expressed by

$$\text{pixel} \begin{cases} \text{if } \left| f_{ij} - \frac{(DM_{ij}+YM_{ij})}{2} \right| > Th, & f_{ij} \text{ is corrupted} \\ \text{otherwise,} & f_{ij} \text{ is a noise-free pixel} \end{cases}$$

Where Th is the noise threshold. Since the currently processed pixel may be a part of an object's edge, averaging DM_{ij} and YM_{ij} can eliminate errors. From the above equation, one can decide whether the currently processed data is a corrupted pixel. If it is, then a nonlinear filtering procedure is used to remove noise, which is given by

$$\begin{cases} f_{ij}=DM_{ij}, & \text{as } f_{ij} \text{ is a corrupted pixel} \end{cases}$$

$f_{ij}=f_{ij}$ as f_{ij} is a noise-free pixel

where noisy pixels are replaced using the average of previously filtered pixels and noise-free pixels are kept.

This filtering method possibly blurs image edges unless the noise-reduction ability near edges is reduced. In doing adoption of edge detection (ED) in threshold adaptation improves on filtering quality. For an efficient filter to work one has to first see whether a processed pixel belongs to an edge of a noisy pixel in no smooth regions. If the decision direct, either the image edge becomes blurred on the noise to be removed. Moreover, filtered errors will be proved the pixel processed next due to the recursive nature of the algorithm. To improve filtering performance, the edge parameter has to repeated accurately. However, edge computations for noisy are extremely complex since some edges have already destroyed. The results will be erratic, as the edge parameter

$$ED = \sum_{M=4}^{1} \left| \hat{f}_{i-1,j-m} - \hat{f}_{i,j-m} \right|$$

Here pixels $\hat{f}_{i-1,j-m}$ and $\hat{f}_{i,j-m}$ have been filtered. Huge edges computed, such as the vertical (45^0 or 135^0) edges, would increase the number of line-buffer by two, but performance gained is only approximately 0.5 dB. For real-time chip implementation, we not only consider filtering performance, but also computational complexity and line buffer requirements. With a performance and complexity tradeoff, only horizontal edges are thus computed in the system.

Based on the ED value, the noise threshold Th can be dynamically adjusted to reduce edge distortions. When the ED is high, the threshold is increased accordingly. Furthermore, the amount of noise is an important factor in determining the appropriate adaptive function. The filtering power should be enhanced in a high noise condition; hence, the threshold is turned lowered. The noise ratio (NR) can be approximately computed by using a noise counter (NC). The NC increases by one if a noisy pixel is found. At the end of one frame, the NC records the number of noisy pixels to determine the NR. With ED and NC parameters, the adaptive function F for the noise threshold can be given by

$Th=F(ED, NC) =k1+K2*ED-k3*NC_{t-1}$

Where k1,K2,k3 are constants. For real-time video processing, NC_{t-1} is the NC result that is estimated from the previous frame for computing the noise threshold of the current processed pixel.

To evaluate filtering performance, the median filter and the proposed algorithms were compared. In the proposed method, parameters k1,k2,k3 have to the selected for the PSNR performance varies as each parameter changes. We find that k1=30, K2=0.25, and $k3=1/2^{12}$ can achieve better filtering result in the experiments. The same parameters are used for filtering all images. From practical simulations, our processing time was closed to the peak-valley approach, but was only approximately 1/2 and 1/540 of the median filter and the long-range correlation approach, respectively. Noise-reduction ability with the proposed adaptive filter could achieve much better quality than the median filter and peak-valley methods and was close to the result of the long-range correlation approach. Thus, the filtering quality of the proposed method out performance state-of-the-art techniques with the same complexity. In general, filtering efficiency (FE) for noise removal not only considers image quality, but also computational complexity. FE can be defined by

$$FE = \frac{\text{Image Quality (PSNR)}}{\text{Computational complexity}}$$

Where the computational complexity is evaluated by the CPU processing time. FE parameters were 40, 94, 0.3, and 146 while using the median-filter peak-valley long-range correlation and the proposed algorithm in the case of NR = 50% for the "Mobile" sequence. Although long-range correlation method can achieve good filtering results its computational complexity is prohibitively high. Hence, its FE drops.

Noise pattern with uniform impulse noise is also filtered by the proposed method, were impulses are uniformly distributed between 0-255 overall images. Compared to the pattern of peak impulse noise, PSNR results degrade at approximately 0.1 dB~0.8 dB in the various cases. All filtered images are available on the World Wide Web.

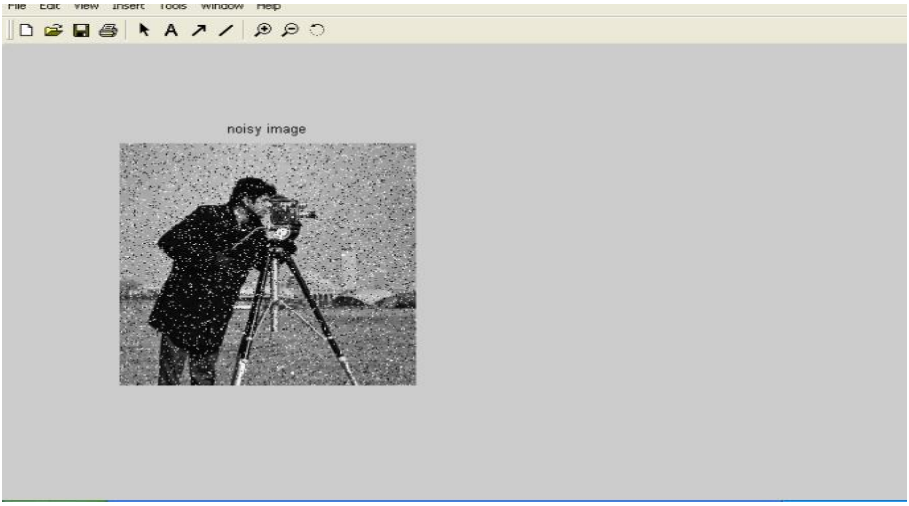
Implementation

Implementation is the final step of a system design. It means converting a new design into operation. This involves installing hardware terminals and training the operating staff. In this phase, user training is critical for minimizing resistance to change and giving the new system a chance to prove its worth. Major steps involved in the implementation of the system are:

- Installation of the new hardware, if required. Installation of the newly developed software into the hardware at the work site.
- Training to be given for the users.

- All the Users/Operators should be briefed on how to use the system.
- Operating manual to be prepared and distributed.

Filtering Application



Dominating Set

In graph theory, a **dominating set** for a graph $G = (V, E)$ is a subset S of V such that every vertex not in S is adjacent to at least one member of S. The **domination number** $\gamma(G)$ is the number of vertices in a smallest dominating set for G.

The **dominating set problem** concerns testing whether $\gamma(G) \leq K$ for a given graph G and input K; it is a classical NP-complete decision problem in computational complexity theory (Garey& Johnson 1979). Therefore it is believed that there is no efficient algorithm that finds a smallest dominating set for a given graph.

Let us consider an image of M*N **strings** with 8 connectivity where the pixels are

weighted with the (DRAW) For example let the image be

$$I=\begin{bmatrix} I_{11}I_{12} & \cdots & I_{1n} \\ \vdots & \ddots & \vdots \\ I_{m1}I_{m2} & \cdots & I_{mn} \end{bmatrix}$$

Figure 1.1

Let the pixels weigth be 0.8 obtained fom DRAW method and the weight pixel are shown as below figure

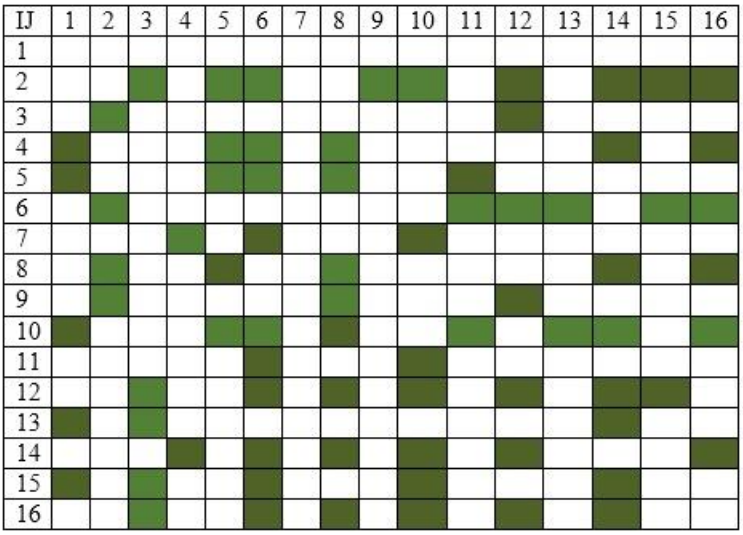


Figure 1.2

For simplicity, let us assume $16 * 16$ matrix split in to four 8*8 matrix for easy Explanation and understanding the concept of the dominating set and aslo to find easily the dominating number for the Graph. So that we take is as the following weight block of $8 * 8$ be shown as by the below Figure

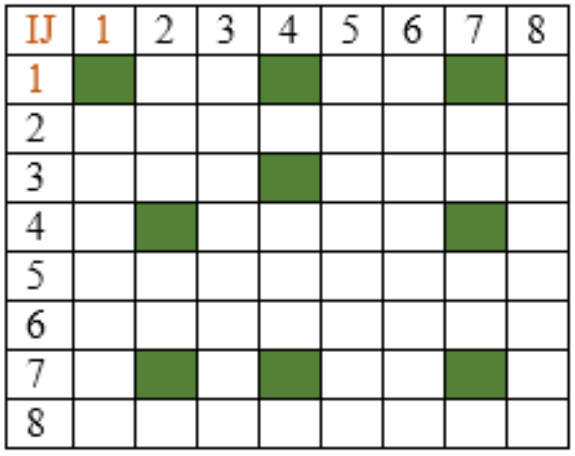


Figure 1.3

Let the shaded square represent the weighted pixels are (1,1) (1,4) (1,7) (3,4) (4,2)(4,7)(7,2)(7,4) and (7,7) take it as a node of the graph and if the two nodes are joined by a line take that line as a edge of a connected graph G.Let us assume the connected graph is plotted for $8 * 8$ matrix said above is drawn below for our reference.Let V_1, V_2 , ……..V_9 are the vertices of the connected graph and E_1, E_2, ……..E_9 be the edges of the connected graph G.

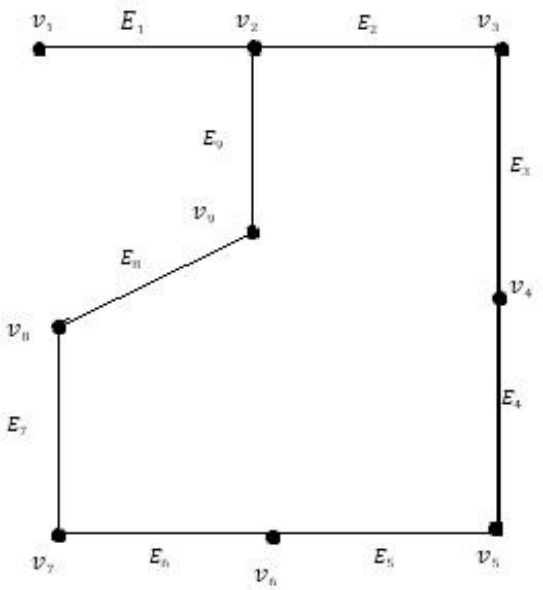


Figure 1.4

From the above graph the dominating set $S_1 = \{v_2, v_5, v_7\}$ and $S_2 = \{v_2, v_5, v_8\}$ are the two dominting sets for the above connecting graph G and the dominating number is $\gamma(G)$=3. So it is concluded that every weighted pixel from Figure 1.3 can be formed as node and vertices with dominating number 3.so this proposed mathematical solution identifies the best pixels which can be proved by flitering the multiexposure images with minimum number of pixel which enables the maximum resolution after flitering .

Dominating set applied for the image correction.

Normal pixel value of the noise image is given below

PIXEL VALUE BEFOR FILTERING

153	166	153	166	159	155	159	159	161	156	151	154	160
	148	155	156	154	149	151	150	155	157	151	149	152
	154	167	161	165	157	154	149	153	152	157	152	153
	148	154	162	155	157	154	164	144	156	155	164	154
	160	164	157	159	169	161	168	161	159	159	161	160
156	160	156	160	156	155	156	159	158	155	154	152	157
	151	156	157	154	151	153	152	154	155	151	150	153
	154	162	158	161	158	154	152	154	155	159	155	156
	152	155	160	157	157	155	160	153	158	159	162	157
	160	162	159	160	165	161	165	161	160	159	161	161
	159	159	159	159	159	162	163	163	161	162	161	163
	166	162	164	164	160	163	164	162	161	161	163	164
	161	159	160	159	163	160	166	164	162	158	157	158
	160	156	161	160	157	161	157	162	161	160	159	158
	157	161	163	159	155	164	162	161	165	158	157	162
	160	164	161	163	159	163	164	162	162	164	164	163
	163	164	162	159	164	162	159	157	161	161	162	158
	146	127	122	116	113	110	110	107	107	106	110	133
	126	95	95	82	69	70	64	66	80	113	110	86
	117	98	88	96	103	101	114	105	95	114	130	143
	140	133	140	134	140	144	142	141	136	135	137	132
	131	124	130	117	135	135	129	123	120	132	135	141
	137	148	150	140	135	110	120	141	126	117	114	119
	120	101	147	125	110	133	114	130	110	126	124	116
	133	111	119	119	100	117	132	147	118	126	117	125
	107	129	142	133	143	81	106	137	145	114	98	127
159	154	159	154	153	155	153	159	155	154	157	150	153
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	165	163	167	160	163	161	163	162	160	163	166	166
	162	162	162	162	163	163	165	162	161	157	160	159
	161	160	161	156	159	159	160	160	158	155	159	159
	157	159	161	160	161	161	158	162	162	162	161	161
	162	164	159	165	160	161	164	165	164	163	166	160
	161	161	162	162	162	164	160	161	161	164	163	160

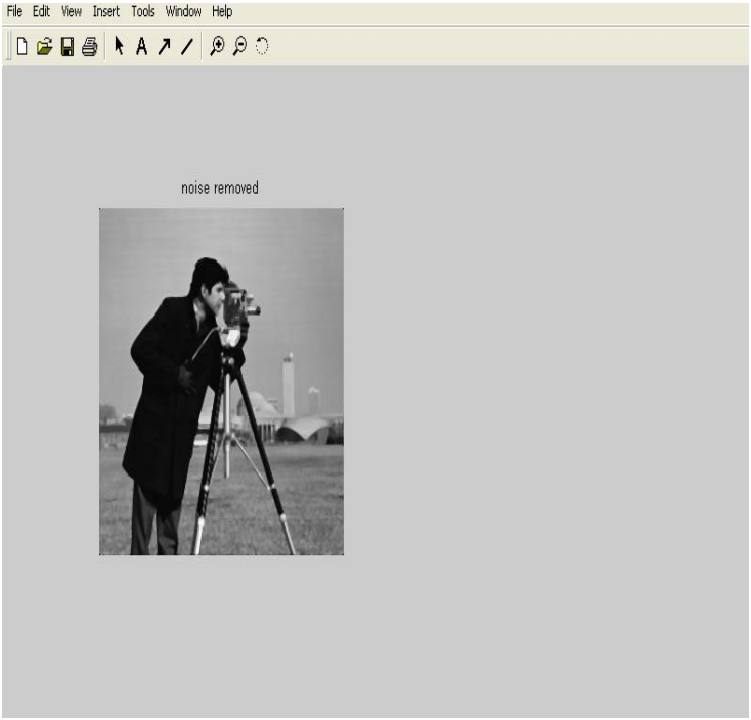
The above image represents the pixel value of noise image. That image is converted in the matrix format using dominating set methods.

The img. 1.1 represents the normal pixel value of the noiseless image.

PIXEL VALUE AFTER FILTERING

	0	156	154	154	154	153	155	155	155	154	152	152	151	153	154
154	153	153	152	153	153	151	151	151	151	154	154	157	157	154	154
154	154	155	155	156	155	155	155	156	157	156	156	155	156	158	159
159	160	160	160	160	160	161	161	161	161	159	159	159	160	159	159
159	159	159	161	162	161	161	161	162	163	163	163	162	160	160	161
162	161	161	161	163	162	161	160	159	160	160	163	162	162	158	157
157	158	158	160	156	157	157	157	159	158	158	158	158	157	157	157
159	159	159	158	161	161	161	158	158	160	161	160	161	159	160	160
162	162	162	163	163	161	161	161	161	162	162	160	159	159	161	161
160	146	127	122	118	113	109	109	107	107	106	104	104	109	109	95
85	69	68	66	66	66	66	80	89	89	89	94	94	94	101	103	104	95	95
95	116	133	133	133	133	134	134	140	140	136	135	131	131	131	131
130	124	126	126	132	127	123	123	129	135	135	137	124	124	124	122
120	120	126	123	114	114	109	108	108	119	119	119	110	114	110	124
121	120	120	111	111	106	106	106	117	119	128	126	118	125	117	120
120	129	128	106	106	106	116	116	114	114	114	116	121	0		
156	158	157	156	155	155	156	157	157	157	155	155	154	156	157	157
156	154	153	154	154	154	153	151	154	154	155	157	158	158	155	155
155	157	158	157	156	156	156	157	157	157	157	156	158	159	160	160
160	160	160	161	161	161	162	161	161	161	160	161	161	161	160	160
160	161	163	163	163	162	162	162	163	163	165	164	164	163	163	163
163	162	163	164	164	162	162	162	162	162	163	162	162	161	160	158
159	159	160	160	160	160	160	160	160	159	159	159	159	159	159	161
161	160	160	161	162	162	162	161	161	162	161	163	161	162	162	163
163	163	164	164	163	163	162	162	162	162	162	161	161	161	162	162
160	146	127	122	118	110	109	108	108	107	106	104	110	133	126	95
82	69	66	66	66	80	110	112	117	117	117	103	106	106	114	108	114
114	119	136	136	135	135	134	140	141	142	141	136	135	135	132	135
131	131	130	132	133	133	132	129	132	137	137	137	137	137	140	135
132	129	129	128	126	123	120	119	119	120	125	125	122	120	120	120
124	124	123	124	116	122	111	118	118	119	128	132	144	140	136	120
123	129	133	133	119	119	119	122	119	116	116	116	124	126	121	
155	158	157	157	155	155	156	156	157	157	157	155	155	156	157	157
157	154	154	155	155	155	154	154	154	155	155	157	157	157	156	155
155	157	158	157	157	156	156	156	157	157	157	158	159	160	160	160
160	160	161	161	162	162	161	161	161	161	161	162	161	161	161	161
160	161	163	163	163	162	162	162	163	164	165	164	164	163	164	164
163	163	163	165	165	165	163	162	163	162	163	162	161	161	160	159
160	160	160	159	159	159	160	161	160	158	158	159	159	159	161	161
161	161	161	161	162	162	162	162	162	162	162	163	162	162		

Image After Filter Application



Future Development

In this paper we use only Bit map *BMP images has been processed. But in future, Other files including joint photographic expert's group (ipeg) images can also be processed. Colour images can also be processed.

Conclusion

The implementation of Median filter is reviewed in this paper. The behavior and performance is analyzed using dominating methods. Based on the threshold value median filtering algorithm has been developed and summarized here. The optimization goal is to minimize the absolute error.

By using this filtering technique the edges of the images can be preserved, while reducing the noise to its maximum capability.

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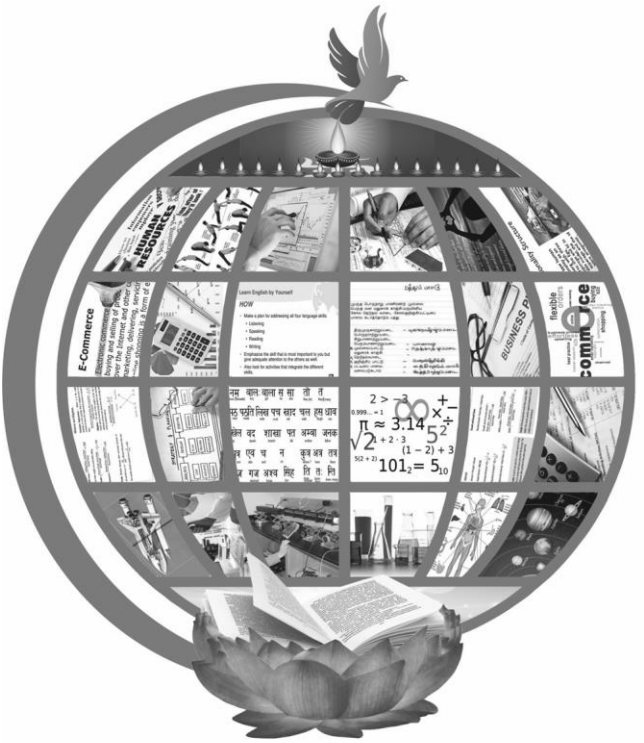

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CONTENTS

guzh; mfg;ghly;fspy; fhzyhFk; cs;Siw

jpUkjp. K. fhh;j;jpfh
jkpo;j;Jiw>
= rhujh kfsph; fy;Y}hp> jpUney;Ntyp.
Email: karthigatamil13@gmail.com

Kd;Diu

rq;ffhyg; Gyth;fs; jhk; $wf;fUjpaf; fUj;jpid> rpy cj;jpfspd; topg; Gyg;gLj;jpAs;sdh;. mt;Tj;jpfSs; xd;Nw cs;Siw vd;gjhFk;. guzUk; jhk; ,aw;wpag; ghlYs; cs;Siw vd;Dk; cj;jpiaf; ifahz;Ls;shh;. Guzh; mfg;ghly;fspy; fhzyhFk; cs;Siw Fwpj;J ,f;fl;Liuapy; fhzyhk;.

ctk cs;Siw

fUg;nghUs; cgkhdkhf epd;W ctNkag; nghUis cs;Siwahfj; jUtNj ctk cs;SiwahFk;. njhy;fhg;gpah; Vid ctkj; Njhw;wf; fhuzpfshff; $wpa tpid> gad;> nka;> cU vd;w ehd;fpd; mbg;gilapNyNa ctk cs;SiwiaAk; nghUj;jpf; fhzyhk;. Guzh; mfg;ghly;fspy; ctk cs;Siw kl;LNk ,lk; ngw;Ws;sJ vd;Nw $wyhk;.

tpid ctk cs;Siw

fUg;nghUl;fspd; tpid cgkhdkhf ,Ue;J> cs;Siwahf ctNkag; nghUisj; jUtJ tpid ctk cs;SiwahFk;. guzh; mfg;ghly;fspy; ,j;jifa ctk cs;Siw ,lk;ngw;Ws;sJ vdyhk;. tpyq;Ffs;> gwitfs;> kyh;fs; Mfpa fUg;nghUl;fspd; tpid mbg;gilapy; ,t;Ttk cs;Siw mike;Js;sJ vd;Nw $wyhk;.

tpyq;Ffspd; tpid

fUg;nghUl;fspy; jiykfSf;F mLj;j ,lj;ijAk;> IawpTapuhfpa tpyq;Ffs; ngWfpd;wd. ,t;tpyq;Ffspd; tpid> jiykf;fspd; tpidia czh;j;Jtjw;Fg; Gyth;fshy; ifahsg;gl;lJ.

vUik

- jhkiu kyiu ntWj;Jf; fOePiu Nka;e;j vUik kzw; Fd;wpy; nrd;Wwq;Fk;.
- jiytp eyid ntWj;Jf; fhjw;guj;ijaplk; $b ,d;Gw;w jiytd; mtsplj;Jk; jq;fhJ> Nrhpg;guj;ijapd; ,y;yk; nrd;W cwq;Fk; jd;ikad; vd;gjid cs;SWj;jp epd;wJ.

"fOePh; Nka;e;j fUe; jhs; vUik
gbdj; jhkiug; gdpkyh; Kiz ,
jz;L Nrh; ks;shpd;,ayp> mayhJ
Fd;W Nrh; ntz; kzy; JQ;Rk; Cu![1]
jhkiu – jiytp

fOePh; - fhjw;guj;ij
kzw;Fd;W – Nrhpg;guj;ij
vUik – jiytd;

ePh;eha;

❖ Mz; ePh; eha; tpbaw;fhyj;Nj this kPid ,iuahff; nfhs;Sk;.

(mfk;: 386)

❖ jiytd; jd; guj;jik xOf;fj;jhy; Cnuy;yhk; myh; vor; nra;J> tpbaypy; jiytpia ehb tUfpd;whd; vd;gjid>

"ngha;if ePh;eha;g; GyTehW ,Uk;Nghj;J
this ehs;,iu NjUk; Cu![2]
Mz; ePh;eha; - jiytd;
thiskPd; - jiytp

gwitfspd; tpid

gwitfspd; tpidAk;> jiykf;fspd; tpidia czh;j;Jtjw;Fg; Gyth;fshy; ifahsg;gl;lJ. ,jidg; guzUk; jk; ghly;fspy; ifahz;Ls;shh;.

gwitfs;

❖ ntz;nzy;iy mhpfpd;w coth;fspd; jz;Zik Kof;fj;jpw;F mQ;rp taypy; cs;s gythfpa gwit ,dq;fs; taw;gug;ig tpl;L mfd;W Xb taypd; kPJ jho;e;J tise;j fpisiaAila kUjkuj;jpy; nrd;W jq;Fk;. mjdhy; mk;kuj;Jg; g+f;fs; cjpUk; jd;ikapid>

❖ jiytpaplj;J md;gpd;wpg; gopg;gjw;F mQ;rpj; jiytd; mtis ehb tUtjhfj; jiytp fUJtij czh;j;Jk; Gyth;>

"ntz;nzy; mhpeh; jz;Zik nthP,
godg; gy; Gs; ,hpa> fodp
thq;F rpid kUjj; J}q;Fzh; cjpUk;"[3]
coth;fs; - jiytp
gwitfs; - jiytd;

kapy;

❖ coth; vOg;gpa Muthuj;Jf;F mQ;rpg; gwe;J nrd;w kapy;> nja;tk; ciwAk; kiyafk; nghypa te;J jq;Fk; epfo;tpid>

❖ jiytd; guj;ijaplk; nrd;W te;jij mLj;J> Chpy; vOe;j myUf;F mQ;rpNa mtd; jiytpapd; kidafk; nghypa te;jhd; vd;gij cs;SWj;jp epd;wJ vd;gjhk;.

"fodp coth; fyprpwe;J vLj;j

fwq;F ,ir nthP,g; gwe;j Njhif
mzq;Fil tiug;gfk; nghypate;J ,Wf;Fk;"[4]
coth; - Cuhh;
Muthuk; - myh;
kapy; - jiytd;
nja;tk; ciwAk; kiy – jiytpapd; kidafk;

kyh;fs;

- Mk;gy; kyh;fs; fhw;wpdhy; Nkhjg; ngw;Wj; jhkiuaplj;Jj; jhOk; epfo;tpid>
- jiytd; fhkf;fpoj;jpaplk; ghzid thapyhf Vt mtd; te;J mtisg; gzpe;J epw;wiy czh;j;jpw;W vd;gjhk;.

"cWfhy; xw;w Xy;fp> Mk;gy;
jhkiuf;F ,iwQ;Rk; jz; Jiw Cud;"[5]
Mk;gy; kyh; - ghzd;
fhw;W – jiytd;
jhkiu – fhkf;fpoj;jp

rq;F

- Mz; rq;F Muy; (xU tif kPd;) rhl;rpahfj; jd; Jizahd ngz; rq;fpNdhL GzUk;.
- myh; $Wthh; mwpAWkhW jiytd;> jdf;Fj; Jizahfpa guj;ijNahL Gdyhbaijf; Fwpj;Jf; $Wk;NghJ>

"gpzh;Nkhl;L ee;jpd; Ngo;tha; Vw;iw
fjph;Kf;F Muy; fstd; Mf>
neLePh;g; ngha;ifj; JiznahL GzUk;
kypePh; mfy;tha; ahzh; Cu![6]
Mz; rq;F – jiytd;
Muy; - myh; $Wthh;
ngz; rq;F – guj;ij

,t;thwhf tpyq;Ffs;> gwitfs; kl;Lky;yhJ kyh;fs; kw;Wk; rq;Ffspd; tpidfSk; jiykf;fspd; tpidfSf;F cs;Siwahff; ifahsg;gl;lij mwpa KbfwpJ.

gad; ctk cs;Siw

fUg;nghUl;fspd; gad; cgkhdkhf epd;W> cs;Siwahf ctNkag; nghUisj; jUjy; gad; ctk cs;SiwahFk;. guzh;> jk; mfg;ghly;fspy; ,j;jifa gad; ctk cs;SiwiaAk; ifahz;Ls;sij mwpa KbfpwJ.

khd;

- Fkpo kuj;jpd; tise;j %f;ifAila Kw;wpa fdpfs; fPNo cjph;e;J mq;Ff; Fjpj;J tpisahLk; ,s khDf;F czthdJ.

- jiytd; te;Js;shd; vd;Dk; nrhy; jiytpf;F kfpo;r;rp jUk; vd;gijf; Fwpj;jJ vd;gjhk;.

  "mj;jf; Fkpopd;nfhL %f;F tpisfdp
  Vwp kl khw;F ty;rp Mfk;"[7]
  Fkpopd; fdp – jiytd; tUif
  ,skhd; - jiytp
  czT – kfpo;r;rp

gd;wp

- gd;wp> epiwe;j Rid ePiuf; Fbj;J> Nrg;gq;fpoq;ifj; jpd;W> jpid tpisFuy; Nka;e;J> ,dpJ fz;Zwq;Fk; epfo;thdJ>

- jiytd; jhd; fUjpanty;yhk; iftug; ngw;Wj; jiytpia kze;J ,d;ge;Ja;e;J ,dpJ tho;thd; vd;w nra;jpNahL cs;SWj;jpf; $wg;gl;Ls;sJ.

  ". . . . . g& ckaph;g; gd;wp
  . . . . . .
  fpis mky; rpWjpiz tpisFuy; Nka;e;J>
  fz; ,dpJ gLf;Fk; ey;kiy ehlndhL"[8]
  gd;wp – jiytd;

  ,t;thwhf khd;> gd;wp Mfpa fUg;nghUl;fspd; gad; cgkhdkhf

epd;W cs;Siwahfj; jiykf;fspd; gaid ctNkag; nghUshfj; je;jJ vdyhk;.

nka; ctk cs;Siw

fUg;nghUl;fspd; nka; cgkhdkhf ,Ue;J> cs;Siwahf ctNkag; nghUisj; jUtJ nka; ctk cs;SiwahFk;. guzh; mfg;ghly;fspy; ,j;jF nka; ctk cs;SiwAk; ,lk; ngw;Ws;sJ.

ahid

- Gypiaf; nfhd;w ahidapd; je;jk; fOtg;gLkhW kioiag; nghope;j Nkfk; ntSj;J itfiwapy; ,aq;fpa epfo;tpid>

- Ntw;wuir ntd;w jiytdpd; fhkNeha; jzpAkhW ,d;gQ; nra;j jiytp> jiytd; gphpthy; Nkdp NtWgl;L epw;ghs; vd;w epfo;NthL cs;SWj;jpf; $wg;gl;Ls;sJ.

  "njhd;W gL Jg;nghL Kuz;kpfr; rpid,f;
  nfhd;w ahidr; nrq;NfhL fohm>
  mop Jsp nghope;j ,d; Fuy; vopyp>
  v/FW gQ;rpw;W Mfp> itfiwf;
  NfhL cah; neL tiu MLk; ehl![9]

Gyp – Ntw;wurd;
ahid – jiytd;
Nkfk; - jiytp

❖ ney; mhpAk; tpidQh;> jk; njhopyhd ney; mhpjiy tpLj;Jr; Nrw;wpy; mOe;jpd fs; epiwe;j tz;bapd; #o;r;rpiag; Nghf;Fjw;Fr; nrd;W> mjd; fhypy; rpwe;j fUk;gpid mLf;fpr; rpijj;jdh;. ,J>

"vhp mife;jd;d jhkiu ,il ,il
mhpe;J fhy; Ftpj;j nre;ney; tpidQh;
fs; nfhz;L kWFk; rhfhL msw;W cwpd;
Ma; fUk;G mLf;Fk; gha;Gdy; Cu![10]

❖ jiytd; ,y;ywk; nra;jyhfpa xOf;fj;jpidf; iftpl;L ,ope;j guj;ijapd; ,d;gj;ij Efh;jw;Fj; jiytpapd; rpwe;j eyj;jpidr; rpijj;J tUj;Jfpd;whd; vd;w cs;Siwr; nra;jpNahL xg;gpl;L Nehf;fj;jf;fJ.

,t;thwhfg; guzh; mfg;ghly;fspy; nka; ctk cs;SiwAk; ,lk; ngw;Ws;sij mwpa KbfpwJ.

KbTiu

guzhpd; mfg;ghly;fs; ew;wpiz> Few;njhif> mfehD}W Mfpatw;wpy; ,lk;ngw;Ws;sd. MapDk; FWe;njhifg; ghly;fspy; vj;jifa cs;SiwiaAk; guzh; ifahstpy;iy vd;Nw $wyhk;. ew;wpiz> mfehD}w;Wg; ghly;fspYk; ctk cs;Siwia kl;LNk ifahz;Ls;shh; vd;gij ,f;fl;Liu %ykhf mwpa KbfpwJ.

mbf;Fwpg;Gfs;

1. ew;. 260
2. mfk;. 386
3. ew;. 350
4. mfk;. 266
5. ew;. 300
6. mfk;. 246
7. ew;. 6
8. mfk;. 178
9. ew;. 247
10. mfk;. 116

ehpf;Fwth;fspd; jpUkzr; rlq;Ffs;

R. ,sturp

jkpoha;Tj; Jiw> = rhujh epNfjd; kfsph; mwptpay; fy;Y}hp> f&h; - 5.

xU rpwpa epyg;gug;gpy; xU nghJ tho;f;if topiag; gpd;gw;wpf; $l;lhf thOk; kf;fs; njhFjp rKjhak; vdg;gLk;. ,J kf;fs; xd;W$b xd;Wgl;l vz;zj;Jld; Xh; ,lj;jpy; thOk; mikg;igf; Fwpf;Fk; kdpjd; jdpj;J tho;gtd; my;yd; gy topfspy; FOTld; ,ize;J tho;fpwhd;. Mdhy; cyfj;jpYs;s midj;Jf; FOf;fspYk; mtd; cWg;gpduhf tho ,ayhJ. tiuaWf;fg;gl;l Xh; vy;iyg;gFjpapy; mtDf;F mUfpy; tho;fpd;w kf;fSld; kl;LNk cwTfis itj;Jf;nfhs;s ,aYk;. vdNt Fwpg;gpl;l vy;iyg;gFjpapy; kpFjpahd fhyk; tho;fpd;w kf;fs; nghJthd r%ff; fUj;Jf;fs;> guk;giug; gof;fq;fs; xUtNuhnlhUth; Njhoik czh;Tld; gOFjy; Nghd;w gy r%fg; gz;Gfis tsh;j;Jf; nfhs;Sjy; jtph;f;f KbahjjhfpwJ. ,t;thwhd r%f tho;f;ifAk; Fwpg;gpl;l nghJthd gFjpANk rKjhaj;ij cUthf;Ffpd;wd. mr;rKjhaj;jpy; Xh; ,dkhd ehpf;Fwth;fs; gw;wp mwpNthk;.

ehpf;Fwth; ngah;f;fhuzk;

Ch; Cuhfr; Rw;wpj; jphpAk; ehNlhb kf;fSs; 'ehpf;Fwth;' ,dj;jtUk; mlq;Fth;. ,th;fisf; FUtpf;fhud;> ehpf;nfhk;gd;> ,uhl;bad;> thf;fphp vdTk; toq;Fth;. ,k;kf;fs; jq;fisj; jk; nkhopapy; 'thf;fphp' vd;Nw Fwpg;gpLth;. ,J Fruhj;J khepyj;jpYs;s 'ghf;b' vd;w kf;fSld; njhlh;GgLj;jTk; nkhopthhpahf MuhaTk; cjTk;. 'thf;fphp' vd;w nrhy;ypw;Ff; FUtp gpbg;gtd; vd;gJ nghUs;. ehp Ntl;ilahb mjd; ,iwr;rpia cz;gjhYk; ehpapd; Njhy;> efk;> gy; Mfpatw;iw tpw;gjhYk; ,th;fs; ehpf;Fwth; vd;w ngaiug; ngw;wdh;. goq;Fb kf;fshd Fw;Wtho; Fwth;fspd;Wk; gphpj;jwpa 'ehp' vd;w milnkhop tof;fpYs;sJ.

nkhopAk; ehpf;FwtUk;

nkhop rKjhak; rhh;e;jJ. nkhop ,y;iyNay; rKjhak; ,y;iy. mNj Nghd;W rKjhak; ,y;iyNay; nkhopAk; ,y;iy. ,e;j ,uz;lwf; fye;j cwit mbg;gilahff; nfhz;Nl nkhopahdJ mJ rhh;e;Js;s rKjhaj;jpidAk;> gz;ghl;bidAk; gpujpgypf;Fk; fz;zhb vd;W Fwpg;gplg;gLfpwJ. kdpjdhy; gilf;fg;gl;L kdpjiuNa ehfhPfKilatdhf khw;WtJk; nkhopNa. kdpj ehfhPfj;NjhLk; rKjha czh;TfsplKk; gpd;dpg;gpize;J ,aq;fp tUfpwJ vd;Wk; Fwpg;gplg;gLfpwJ.

ehpf;Fwt kf;fs; ,U nkhopahsu;fs;. jkpoUld; nfhr;irj; jkpopy; ciuahbdhYk; jq;fs; $l;lj;jpdUld; NgRk;NghJ mth;fspd; nkhopapNyNa Ngrpf;nfhs;fpwhh;fs;. mth;fsJ nkhop thf;fphp vd mwpaKbe;jhYk; f&h; tl;lhuj;jpYs;sth;fs; gl;lhzp nkhop vd;Nw Fwpg;gpLfpd;wdh;.

gl;lhzp nkhop tpsf;fk;

gl;lhzp nkhopf;F vOj;J tbtk; fpilahJ vd;fpd;wdh;. Vnddpy; gl;lhzp nkhop vd;gJ gy nkhopfs; fye;jit MFk; vd;gNjhL mit ,e;jp> kuhj;jp> F[uhj;jp> cUJ> njYq;F> jkpo; Mfpa midj;J nkhopfisAk; fye;J NgRk; nkhopNa ehq;fs; NgRk; gl;lhzp nkhop vd;fpd;wdh;.

rlq;Ffs;

toptopahf tUk; gokuGfisf; fhj;jy; kdpj kdj;jpd; Moj;jpy; Nt&d;wpa nrayhFk;. rlq;Ffs; ,g;gzpf;F nghpJk; JizGhpfpd;wd. Kd;Ndhh; nra;j nray;fisf; fhuz fhhpa Muha;r;rpapy; <Lglhky; jhk; fz;lthNw gpd;gw;WtJk;> epfo;j;JtJk; rlq;fpd; Kiw. cyfpd; midj;Jg; gFjpfspYk; ehfhPfj;jpd; cr;rpapy; tho;gth;fspilapYk; ehfhpj;jpd; fPo;g;gbapy; cs;sth;fspilapYk; midj;Jf; fhyq;fspYk; rlq;Ffs; epfo;j;jg;gl;L te;Js;sd. rlq;Ffis epfo;j;jhtpl;lhy; vLj;j fhhpak; ed;F epiwNtwhJ vd;Wk; jPikfs; epfOk; vd;Wk; kf;fs; nghJthf ek;gpf;if itj;Js;shu;fs;. gpwg;G Kjy; ,wg;Gtiu kdpjdpd; tho;f;ifr; rlq;Ffshy; fl;Lz;L fplf;fpwJ. mt;tifapy; jpUkzr; rlq;Ffs; gw;wp mwpNthk;.

jpUkzk;

jpUkzk; vd;gJ Xh; MZk; ngz;Zk; fztd; kidtpahf ,iztJ MFk;. ,e;j ,izg;G r%fj;jhy; mDkjpf;fg;gl;Lk; xg;Gjy; mspf;fg;gl;Lk; mikfpwJ. Xh; MZk; ngz;Zk; fztd; kidtpahfj; jpUkzj;jpd; %yk;jhd; ,iza KbAk; vd;W r%fk; tiuaWj;J mij epiyepWj;jpapUf;fpwJ. ,e;j tifapy; jpUkzk; Xh; mbg;gil epWtdkhf mikj;J FLk;gk; Njhd;w toptFf;fpwJ. jpUkzNk FLk;gj;ijj; njhlq;fp itf;fpwJ.

ghypd epiwit va;jj; jpUkzk; kl;LNk r%fk; mDkjpf;fpd;w topKiw vd;gjhy; Mz;fSk; ngz;fSk; jpUkzj;ij ehlNtz;bAs;sJ. Mdhy; ghypd epiwT kl;LNk jpUkzj;jpw;Ff; fhuzkhf miktJ fpilahJ. ghypd epiwT vd;w caphpay; Njitia epiwNtw;wpf; nfhs;sTk;> Foe;ijg; NgW vd;w cstpay; Njitia milaTk; jpUkzk; nra;ag;gLfpwJ.

jpUkzr; rlq;Ffs;

jpUkzr; rlq;Ffs; gz;ila kf;fspd; tho;f;if Kiwapy; Vw;gl;l gytifg; gof;f tof;fq;fis mbnahw;wp vOe;jit. gz;ilj; jkpoh; mtw;iwf; fuzk; vdf; Fwpj;jdh;.

'ngha;Ak; tOTk; Njhd;wpa gpd;dh;
Iah; ahj;jdh; fuzk; vd;g' (njhy;-fw;gpay;)

vd;gjhy; r%fg; nghpath;fshfpa Iah; FwpaPl;L Kiwapy; rpy rlq;Ffis tpjpj;jdh; vdj; njhpfpwJ.

jpUkzKk; taJk;

mj;ij tPl;bYk;> khkd; tPl;bYk; ngz; vLf;f KiwAs;sJ. mjhtJ xUth; vUikf;flh topghl;Lf;fhuh;fshfTk;> vUikf;flh topgLgth;fs; fhspahap> gj;ufhsp Nghd;w

nja;tq;fis tzq;Ffpd;wdh;. kw;nwhUth; Ml;Lf;fplh topghl;Lf;fhuh;fshfTk;> Ml;Lf;flhit topgLgth;fs; kJiu kPdhl;rp> Jh;f;if Nghd;w nja;tq;fis tzq;Ffpd;wdh;. ,t;tpU tPl;lhUk; Mz;> ngz; ,Ue;jhy; khw;wpj; jpUkzk; nra;J nfhs;fpd;wdh;. mj;NjhL ,t;tpd kf;fs; gjpdhd;F> gjpide;J Nghd;w Fiwe;j taJila ngz;fSf;Fk; jpUkzk; nra;J itj;J tpLfpd;wdh; vd;gijAk; mwpa Kbfpd;wJ.

ngz; tPl;lhUf;F gzk; nfhLj;jy;

,t;tpd kf;fs; xU tPl;by; ngz; vLf;Fk; NghJ mg;ngz; tPl;lhUf;F Ik;gjhapuk; gzk; nfhLf;f Ntz;Lkhk;. NkYk; ngz; tPl;by; cs;sth;fSf;Fk; MilfSk; thq;fpj; ju Ntz;Lkhk;. Mf nkhj;jk; khg;gps;is tPl;lhUf;Nf nryT mjpfkhFk; vd;Wk; mwpa KbfpwJ. ngz; tPl;lhh; vJTk; rPh; thpir nra;a Ntz;Lk; vd;w fl;lhak; fpilahJ vdTk mwpaKbfpd;wJ.

jpUkz cilAk; nkl;bAk;

,t;tpd kf;fspd; jpUkz cil gl;L fpilahJ. Mdhy; mtuth; trjpf;Nfw;wthW Mapuk;> ,uz;lhapuk; vd;w tifapy; ngz;zpw;F Nriy thq;Fthh;fshk;. Ke;ija fhy fl;lj;jpy; mzpe;j miug; ghthil kw;Wk; jhtzp ,y;yhky; jw;NghJ Nriy cLj;jpNa jpUkzk; nra;fpd;wdh;.

nkl;b mzpAk; tof;fk; fpilahJ. Vnddpy; mth;fSila nja;tq;fSf;F nts;spapy; jhyp nra;J Nghl;bUg;ghh;fshk;. Mifahy; nja;tj;jpw;F mzptpj;Js;s nts;spapid ,th;fs; gad;gLj;JtJ fpilahJ vd;Nw mwpe;Jnfhs;s Kbfpd;wJ.

Njhgpapd; gzp

kw;w ,dj;jth;fspy; Iah; itj;J jpUkzk; nra;fpd;wdh;. Mdhy; ,th;fs; Njhgp vd;W $Wfpd;wdh;. mth; Kd;dpUe;J midj;Jr; nray;fisAk; ,t;thW nra;a Ntz;Lk; vd;W topelj;Jthh;. mth; fhg;G fl;Lk; epfo;r;rpapy; ,Ue;J jhyp fl;Ljy;> Fr;rp ,Oj;jy;> fhg;G mtpo;j;jy;> nghq;fy; Cl;Ljy;;> kPd; gpbj;jy;> tpsf;F ghh;j;J Muj;jp vLj;jy; Nghd;w midj;J epfo;r;rpfisAk; Kd;dpUe;J nra;J itg;gtNu Njhgp Mthh;. ,th;fsJ jpUkzk; %d;W ehl;fs; gy rlq;FfSld; eilngWfpd;wJ. kw;w ,dj;jth;fs; Iah; ,y;yhky; jpUkzk; nra;akhl;lhh;fs;. ,th;fs; Njhgp ,y;yhky; jpUkzk; nra;akhl;lhh;fs; vdTk; njhpe;Jnfhs;s Kbfpd;wJ. ngz;zpw;Fk; khg;gps;isf;Fk; NjhgpNa ifapy; fhg;Gf;fl;b jpUkzr; rlq;fpid Muk;gpj;J itg;ghh;.

jhyp

jpUkzj;jpy; nfhz;Nlhd; nja;tk; tho;j;jp jd; Njf rk;u~;zhu;j;jk; jd; re;jjp tpUj;jpapd; nghUl;L nfhz;l kidtpapd; fOj;jpy; NjtU~pfs;> GNuhfpjh; KjypNahh; fl;Lk; milahsNk jhyp MFk;.

mt;tifapy; ehpf;Fwt ,d kf;fs; fUfkzpiaAk;> nghl;L vd;gitNa jhypahf mzpe;J nfhs;fpd;wdh;. mit trjp tha;g;gpw;Fj; jFe;jthW jq;fj;jhNyh> gpj;jisahNyh mzpe;J

nfhs;fpd;wdh;. ,itNa Kw;fhyj;jpy; kuj;jhYk;> XiyahYk; Nghlg;gl;Ls;sdh; gw;wp mgpjhdrpe;jhkzpapy; 1234Mk; gf;fj;jpy; $wg;gl;Ls;sJ.

Fr;rp ,Oj;jy;

Fr;rp ,Oj;jy; epfo;r;rpahdJ jhyp fl;ba md;W khiyapy; eilngWk;. mjhtJ ePz;l Fr;rpapid (fk;G) vLj;Jf;nfhz;L mjd; ikag;gFjpapid milahsk; itj;J ge;jaj; njhifahf MapuNkh> ,uz;lhapuNkh vd;W gzk; itj;J tpLthh;fs;. ngz; tPl;lhh; gj;Jg; Ngh; vd;why; khg;gps;is tPl;lhUk; gj;Jg; Ngh; ,Uf;f Ntz;Lk;. ,jpy; ahh; Fr;rpapid KOtJk; ,Oj;J ntw;wpailfpd;whh;fNsh mth;fNs ge;jaj; njhifapid vLj;Jf; nfhs;s Ntz;Lk;. mj;njhifapid Nghl;bapy; gq;Fngw;w midtUf;Fk; gphpj;Jf; nfhLj;JtpLthh;fs;. ,e;epfo;thdJ tpisahl;Lg; Nghd;W Njhd;wpdhYk; ,JTk; jpUkzj;jpd; xU rlq;fhfNt fhzg;gLfpwJ.

fhg;G mtpo;j;jy;

ngz;zpd; ifapYk; khg;gps;isapd; ifapYk; fl;ba fhg;gpid mtpo;f;f Kbahjgb ,UtUk; itj;Jf;nfhs;s Kaw;rpg;ghh;fs;. mjhtJ Kbr;rpapid ,Wf;fkhfNth my;yJ fhg;gpy; VjhtJ jltpNah itj;Jf;nfhs;thh;fs;. ngz; ifapYs;s fhg;gpid khg;gps;isAk;> khg;gps;is ifapYs;s fhg;gpid ngz;Zk; mtpo;f;f Ntz;Lk;. ,jpy; ahh; Kjypy; mtpo;f;fpd;whh;fs; vd;W njhpe;Jnfhs;s cwtpdh;fs; Mh;tkhf ,Ue;J ngz;izAk; khg;gps;isiaAk; ,UtPl;lhh;fSk; Cf;fg;gLj;jp> cw;rhf%l;b mtpo;f;f itg;ghh;fs;. ,JTk; xU rlq;fhf fhzg;gLfpwJ.

nghq;fy; Cl;Ljy;

jpUkzkhd ,uz;lhk; ehs; khkpahh; mjhtJ khg;gps;isapd; mk;kh nghq;fy; itj;J jiyapy; itj;J J}f;fpf;nfhz;L te;J nfhLf;f Ntz;Lkhk;. mjid ,UtUk; khwp khwp Cl;Ljy; vd;w ngahpy; tpisahz;L gpd; Cl;bf; nfhs;thh;fshk;. mJTk; cwtpdh;fs; #b ,Uf;Fk;NghJ jhd; ,e;epfo;Tk; eilngWk; vd;gjid mwpa Kbfpd;wJ. ,JTk; xU rlq;fhfNt elj;Jfpwhh;fs;.

kPd;gpbj;jy;

jpUkzkhd ,uz;lhk; ehspy; xU Flj;jpy; mjhtJ ,Uthpd; ifAk; Eioaf; $ba ghj;jpuj;jpy; kQ;rs; jz;zPh; itj;jpUg;ghh;fs;. mjpy; 10 tifahd Nkhjpuj;ijAk; Nghl;bUg;ghh;fs;. mjpy; xU Nkhjpuj;ij kl;Lk; fhz;gpj;J ,ij ahh; vLf;fpd;whh;fNsh mth;fNs ntw;wpahsh;fs; vd;Wk; $Wthh;fs;. mNjhL mk;Nkhjpuj;ij 7 Kiw ,UtUk; vLf;f Ntz;Lk;. mjpy; ahh; mjpfKiw Fwpg;gpl;l Nkhjpuj;ij vLf;fpd;whh;fNsh mth;fNs ntw;wpahsu;. ,Ug;gpDk; filrp Kiwahd mjhtJ 7 Kiwahf ahh; mk;Nkhjpuj;ij vLf;fpd;whh;fNsh mth;fs; vLf;fhjth; kPJ mf;Flj;jpy; cs;s kQ;rs; ePiu Cw;wp tpLthh;fshk;. ,e;epfo;r;rpiaj; jhd; kPd; gpbj;jy; rlq;F vd;W $Wfpd;wdh;.

tpsf;F ghh;j;J Muj;jp vLj;jy;

jpUkzkhd %d;whk; ehspy; ,e;epfo;T eilngWk;. mjhtJ khtpy; tpsf;F Nghl;L Muj;jp vLg;ghh;fshk;. ngz;zpd; jha; jhd; Muj;jp vLg;ghh;. Mdhy; khg;gps;isf;Fk; ngz;Zf;Fk; Muj;jp vLg;gJ fpilahJ. khkpahh; khg;gps;isf;F kl;LNk Muj;jp vLg;ghh;. mg;nghOJ khg;gps;isiaAk; khkpahiuAk; Kl;b tpLthh;fshk;. mg;nghOJ fhak; $l Vw;glf; $Lkhk;. me;jstpw;F ,r;rlq;fhdJ eilngWkhk;. mg;nghOJ kl;LNk khkpahh; kUkfd; njhl;Lf;nfhs;Sk; epiy cs;sJ. mjd; gpwF ,JNghd;w epfo;Tfs; vJTk; elg;gJ fpilahJ. kUkfid kpFe;j khpahijAld; elj;JtJ ,th;fsJ kughff; fhzg;gLfpwJ.

epiwTiu

cyfpy; Kjypy; Njhd;wpait Mjhk;> Vths; vd;W Fwpg;gpl;bUe;jhYk; ,d;W gy Nfhb kf;fis cUthf;fp> gy nkhopfshff; fpisj;J> gy ,dq;fshf Nt&d;wp te;jNjhL gy;NtW rlq;FfisAk; cs;slf;fpNa kdpjd; tho;e;J nfhz;L te;Js;shd;. mt;tifapy; ehpf;Fwt ,d kf;fspd; jpUkzr; rlq;Ffs; %d;W ehl;fs; eilngWtJ Fwpj;Jk; ,uz;L ehl;fs; irt czTk;> %d;whk; ehs; mirt czTk; tpUe;jhf mspj;J jpUkzj;ij elj;Jfpd;wdh; vd;gij f&h; tl;lhu ehpf;Fwt ,d kf;fspd; fUj;Jf;fis ,q;F gjpT nra;ag;gl;Ls;sJ.

Jiz epd;w E}Yk;> jftyhsh;fSk;

1. eh.ghYrhkp - tho;tpaw; fsQ;rpak;. njhFjp: 8>10>11
2. rpq;fhuNtY Kjypahh; - mgpjhd rpe;jhkzp
3. jkpoz;zy; - njhy;fhg;gpak;
4. uh[h - muR fhydp> f&h; khtl;lk;
5. khhpak;khs; - muR fhydp> f&h; khtl;lk;
6. kzpthRfp - muR fhydp> f&h; khtl;lk;
7. kzpuj;jpdk; - muR fhydp> f&h; khtl;lk;

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Identity Climax and Survival of Immigrants in the Works of Bharati Mukherjee

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Abstract

Bharati Mukherjee is a contemporary novelist, short-story writer and critic. All her novels are Women- centred and deals with the changed psyche of the protagonist's behavior. Her basic concern is to delineate the problems of cross-cultural conflicts faced by women in India. Her novels honestly depict the issues of her own cultural location in West Bengal in India, her displacement from her land of origin to Canada where she was simultaneously invisible as a writer and overexposed as a racial minority and her final assimilation to USA as naturalized citizen. Her writings are largely honed by the multiple dislocation of her personal life, which itself has been described as a text in a kind of perennial immigration. Her fiction reflects the image, the status, the struggle of Indian women of all classes and creed in the modern & post-modern times. In her novels she realistically paints the contemporary American immigrant and expatriate social reality. As a diasporic writer she has given new dimensions to Indian writing in English. As such ,this paper proposes to make a study on the identity climax and survival of immigrants in the works of Bharathi Mukherjee.

Keywords*: displacement, assimilation, dislocations, expatriate, dimensions.*

Bharati Mukherjee is a transcendent author of the Indian writings in English and she has evoked the study of feminism in her writings. She is an Indian- born American writer. She is the winner of National Book Critics Circle Award. She is an Indian diaspora, settled in America as a third world feminist whose main intention is to deal with the problems and issues related with South–Asian women especially as immigrants in India. Mukherjee has earned a place by producing exceptional work in Indian diasporic literature. Her writings ruminates about her pride of her Indian patrimony as well as her praise of her American identity.

Bharati Mukherjee's first novel *The Tiger's Daughters* (1971) is a story about a young upper class Bengali Brahmin girl ,Tara Banerjee who goes to America for higher studies. Though afraid of unknown ways of America, in the beginning ,she tries to adapt herself to it by entering into matrimony with David who is an American. After that, she returns to India after a gap of seven years. As she considers America a dream land, her initial taste on India is that of shock and distaste. She dislikes everyone and everything in India because of her acculturation in America. So she is torn between two cultures – American and Indian. She spends her life in finding her real self and arrives at no specific conclusion, rather chaos reigns high. In an attempt to Americanize herself she loses her Indian identity. Thus Tara's journey in India proves as a quest for self and her immigrant psyche, which proves disconcert, slowly leads her to illusion, alienation, dolefulness and finally to tragic end.

Mukherjee's second novel *Wife* (1975) opens in Calcutta with Dimple Dasgupta's father searching her a suitable male of appropriate caste- an engineer through matrimonial proclamations. According to her, marriage will bring her freedom, love and more preferable life. She craves for freedom more than anything. In order to become more desirable she seeks to

manipulate her identity through all ways. She wants to be a wife but her expectation is perplexed with her desire for freedom.The protagonist, Dimple wants to break through the traditional prohibition of a wife. The novel tells the story of Dimple, a seemingly pliant young Bengali girl who, as any other normal girl, is full of dreams about her married life and so she enthusiastically and fretfully waits for marriage. She marries Amit Basu. She dreams a new life for herself in America where Amit is expecting to immigrate. She is expected to play the role of an ideal Indian wife, stay at home and keep the house for husband. Her disappointment is built up progressively by the circumstances. She bitterly resents being a wife in Basu's family and revolts against wifedom in various ways. She wants to miscarriage Basu's property even in her womb She hopes for self-recognition and fulfillment. But Basu behaves in a different way. He wants her to be obedient and humble. So Dimple hates Basu and his behavior. He needs her only for sex. harassment. As she feels it is sinful, she kills Amit and eventually commits suicide. Dimple is Bharati Mukherjee's Lady Macbeth. She is stone-hearted and delusional. Her problems are weaved within and across contrasting cultures and identity shifts. Her imagination becomes her enemy within. Her defects are her inability to adjust, adopt and accept her own reality. Dimple is evidence for Bharati Mukherjee's exceptional characterization skills.

Bharati Mukherjee's novel *Jasmine* (1989) is the story of a young widow who annihilates herself from her life in India and re-roots herself in search of a new life and image in America. Jasmine the title character is born in a rural Indian village called Hasanapur in Punjab. She gets married to a city man named Prakash who has a ransom outlook towards life and who craves to go to Florida to get an engineering degree. When the extremists kill him, Jasmine undertakes her trip to America alone to fulfill her husband's dream. Upon her arrival in Florida, she meets Half-Face, the Captain of the ship on which she enters the country, Half-Face sees her only as a sexual being. Raped on her arrival by him, she becomes the murderer of her rapist. Jasmine's journey into different identities starts and vows to start a new life in India and the native identity of her past. Lillian Gordon rescues her and later on Prakash's professor Devinder Vadhera provides shelter for her. Jasmine's decision to strive and affirm her place in the American society actuates her to accept the job and makes her to become the wife of Bud Ripplemayer, a small town banker. Jasmine starts her journey as an Indian girl who is surrounded by tradition. She experiences both enjoyment and distress. She fights against not only the male ruling both in India and in the States but also the contrariness between her Eastern and Western characteristics with the hope of total freedom and unity in herself. In order to survive as a woman from a Third World country under the squeeze of male – centeredWestern culture, Jasmine devotes a lot.

The novel *The Holder of the World* (1993) is basically the archetype of a white woman, Hannah Easton, who comes to India and ventures to make an understanding of her life. She is an embodiment of firmness, brazenness and imagination which reproduces her American spirit. Hannah's mother elopes with her Nipmuc lover and leaves her to lead a life of orphan. Robert and Susannah Fitch of Salem adopts her and she gets a Puritan atmosphere during her childhood. She tries to forget the past, but finally the past gets repeated in her life. She is not able to forget her mother, though she left her at a very tender age. The novel elucidates the distressed psyche of a young woman who is a victim of alienation and male dominance. She marries Gabriel Legge. She takes life not as a misery but on an exciting trial. Gabriel doesn't have enough fortitude and

sensuality to understand Hannah. So she losses her happiness and finally rebels in search of identity and pleasure. The emptiness in her life pushed her to get mingled with other males when she comes to India. The physical, mental and emotional hardships that Hannah sustains, convert herself completely into a new different personality. The main concern of this novel is about the struggle and the efforts of an immigrant woman for the sake of her personal identity.

Leave it to Me (1997) is the story of a Californian love-child born of a hippie and she is discarded in an orphanage by her biological parents. The poor child is adopted by the kind and caring Indian-American family and the girl is named as Debbie Di Martino. Though she is loved by her foster parents, she is not happy and satisfied. When her agitating reality overwhelms on her unknown inner identity, she becomes sleepless and deeply disturbed. She determines to find her true roots and her original parents. In her way she meets many men. Her journey provides her the answer. Yet the sense of rootlessness and loss resorts her and disagree her subjective identity. At the end, she sets out in search of her past, her origin and the unknown "bio-parents" who insensibly abandoned her. The story proceeds with ups and downs in a picaresque style ,bringing together variety of characters who may or may not help the protagonist in her search for her "bio-mom". Though the story mainly revolves around the girl it includes some of the important prospects of life.

Bharati Mukherjee's latest novel *Desirable Daughters* (2002) is an attempt of her hunger for her home-land which seems as her key involvement in this novel. The novel is similar to the novel *Difficult Daughters* of Manju Kapoorand *Enslaved Daughters* of Sudhir Chandra which are an attempt of search for protagonist's origin and identities. The novel *Desirable Daughters* is a story of the persons who have come to live stable in a nation which is not their own. The novel gives attention on the prediction of three sisters and their skill of handling with occurrences. The title of the novel, *Desirable Daughters* indicates a type of daughter, which parents would be proud of and for whom every parent would yearn for. The title is ironical, expressive and appropriate. As the daughters are the object of family status, through this novel ,one can understand that manners and behaviors of daughters must be desirable.The three sisters are the grand daughters of Jai krishnan Gangooli and the daughters of Motilal Bhattacharya belong to a traditional Brahmin family of Bengal and the three sisters are imagined as the Hindu Goddess Shakti, Padma, Parvathi and Tara leads a mixture of traditional and modern outlook. The first two sisters do not feel sorry for their alternatives; the former an immigrant of ethnic origin in New Jersey and the latter marries to a boy of her own choice and settles in Bombay.Tara the narrator of the novel marries Bishwapriya Chatterjee goes on arranged marriage. As her married life is not satisfying to her ,she walks out of her traditional life and a typical American divorce settlement follows. Tara works as a volunteer in a Pre-school and enjoys her love life with Andy. The fluidity of her identity certifies not only her own but also the fluidity of the immigrants. Finally Tara returns to her father's house for comfort. Thus Mukherjee explains the effort to search identity of three sisters who face both modern and traditional worlds.

Mukherjee's novel *The Tree Bride* (2004) is the sequel to the Desirable Daughters. This novel is a one-person narrative of British history in India. In The Tree Bride, the narrator Tara Chatterjeepicks up the story of an East Bengal ancestor. Tara Lata Gangooli is born in 1874 to Jai Krishnan Gangooli as his third daughter. According to legend, at the age of five Tara Lata marries a tree and eventually emerged as a nationalist freedom fighter. In piecing together her

ancestor's transformation from a quite Bengal Brahmin girl-child into an impassioned organizer of resistance against the British Raj, the contemporary narrator discovers and lays claim to, acknowledged elements in her American identity.This novel presents like the rich casuisticated and cosmopolitan. Tara Lata and her unforeseen adversity which pushes her to come back to her home land. She searches for her historical Indian roots. The novel narrates how she becomes the tree bride when her would-be dies by a snake-bite and her father marries her to the Forest God to save her. Tara, the widowed woman becomes a social worker. She welcomes the poor and the homeless and takes part in India's freedom struggle. She is sentenced to death by the British.Tara Lata longs for home and tradition finds ancestral roots and her place in pre-independent India. She discovers the shameful past when taboos like child marriage and superstition desolated the dreams and joy of young and innocent girls. The Tree Bride acts as a medium for Tara to discover her past and relating it to her present. Her personality is a combination of both Indian as well as American culture. She receives this scattered identity and comes to terms with it as a part of her progress as an individual.

Miss New India (2011) is the most recent novel of Bharati Mukherjee. It is a story about future. This novel is different from other novels since this story befalls in India. This novel is Anjali Bose'sodyssey to get a space for her in the modern India. She is protagonist of this novel and this novel is the story of transformation of Anjali Bose. She tries to detach herself from old tradition codes of society and search for a new space and new identity for herself. She repudiates the man chosen for her marriage by her father and crosses the traditional commencement of restrictions on Indian women. Anjali Bose finds herself in dilemma of choices between a luckless marriage and a promising career. Encouraged by her teacher, Peter Champion, she takes her identity in her hands and moves from her dusky backwater town to the Silican Valley of the East and the great metropolitan city of Bangalore. She is in the company of young and highly ambitious youngsters, who speak the American jargon to secure call centre jobs and earn a living.This novel can be seen as an example of internal diaspora. Anjali faces many impediments to settle down in Bangalore. She leaves to Gauripurwith resolution and hoping never to return back. In Bangalore she tries to forget her past displeasing memories and looks forward to a new life and identity. She strives to carve a suitable life for her in this New India. At the end of the novel she stops behaving like a fake American and chooses her Indianness over Americanness. The novel ends with Anjali's visit to Gauripur which gives her complete satisfaction and bliss.

Mukherjee's earlier works share with confronts between cultures that take place when her South Asian – American protagonists who live in Canada or the United States return as visitors to their home in India. Her later works share with these confronts as they take place in America. The protagonists of her later works are not from South Asia but they are the people who have arrived in America.

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Desires and Conflicts of Female Bonding in Githa Hariharan's Novel The thousand Faces of Night

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Abstract

GithaHariharan is one of the Indian English women writers winning the commonwealth writer's prize in 1993 for her first novel The Thousand Faces of Night written in 1992. The novel allows insight into the interaction of gender and identity. GithaHariharan deals with realism faced by the women in traditional society and the oppression and inescapability from the patriarchal society determining their rights as human. This paper focuses on the desires and conflicts faced by the women characters in the novel.

Keywords: *interaction, gender, identity, traditional, oppression*

Introduction

Fiction by women writers constitutes major segment of the contemporary Indian writing in English. It is infact the latest of the literary forms to be evolved and the most dominant in the 20th Century novel is the acceptable way to express ideas. GithaHariharan's novels are mostly related to women. These women characters fight very strongly and sensitively with social evils and male superiority. They may have limited experience because of their lack of exposure to the external world, but their insight and intuition are very powerful. In this regard Dr. S. PrasannaSree writes:

> *Through this medium of expressing themselves in writing, women have investigated and published those aspects of their lives as sexual beings that have not previously been acknowledged by society. Despite late 21st century, women are still very far from attaining the required level of socio-cultural, educational and economic advantages usually enjoyed by men.*
>
> *(Women as writer: 39)*

In *The Thousand Faces of Night*,GithaHariharan portrays the story of five women – Sita, Devi, Patti, Parvatiammal and Mayamma. The characters represent traditional self-sacrificing women of three different generations and searching or identity in traditional Hindu society. The novel opens with Devi, the protagonist, an educated and westernized Indian woman returning to India refusing her marriage with Dan, an American friend. Sita, her mother arranges Devi's marriage with Mahesh, a Regional Manager in a Multinational Company. Most of the time Mahesh is on business tour and Devi is not able to adjust in the traditional married life.

At every summer in her childhood days Devi visits her Patti's house and her grandmother narrates the stories of female figures of the past as Gandhari, Amba, Ambika, Ambalika, Damayanthi, Sita, etc. She tries to impose the ethical values on her granddaughter as the stories are solutions to the day- to- day life problems. She discusses her maid servant Gauri's domestic problem. She gives warm refugee in her house to the distant relatives who are deserted

by their Philandering husbands. She generously helps the destitute. Her grandmother's house itself is crowded with superhuman warriors, men and women destined to lead heroic lives and there is no need to look at a mysterious, unknown world outside.

Mahesh is always busy in tour. On Sunday evenings he plays cards with a group of youngman and he doesn't wish Devi to play cards as all the others are men. She has the urge to learn Sanskrit language because she can understand the slogans of her father-in-law in a better way. He denies her learning Sanskrit and securing a job. He gives importance to his autocratic nature and not to cope with his wife ideas. Devi gets irritated as Mahesh does not give importance to her desires. She spends most of the time with her father-in-law Baba and Mayamma the maid servant.

After marriage she hears stories from her father-in-law and the real stories of Sita, Uma, Gauri and Mayamma, but she is unwilling to take up the Indian values into her life. Baba's stories explain that women should be devoted to her husband and by serving them they can reach heaven. He says,

> *Father, brothers, husbands and brother-in-laws should honour brides, if they desire welfare. Where women are honoured, there the gods delight, where they are not honoured, there all acts become fruitless. (TFN 65)*

She likes Baba, who is very attentive to her. Devi expresses her interest towards music and he speaks about the composers of the past. He is her only companion. Devi is very much destructed when her father-in-law decides to go to New York to see his daughter. She expresses her desire to accompany him in her loneliness. Baba imbibes that a woman should want her husband's company and then travel to New Jersey. The long afternoon stretches before her like an endless road. She is disappointed when she hears the news of her father-in-law's death.

Mahesh has a very palatial house in Bangalore and enough riches. He satisfies her with all earthly needs. Mahesh wishes to have a baby and gets an appointment from a gynecologist. Mahesh neglects her as she is not able to bear a child despite the prolonged efforts. She asks Mahesh to adopt a child but he abandons it. She feels for her barrenness and Mayamma advises her to be more religious. She tries it but frustrated. Simon de Beauvoir says that a man

> *……. views the bed as the proper terrain for asserting his aggressive superiority. He is eager to take and not to receive, not to exchange but to rob. He seeks to possess the woman to an extent over and above what she gives him; he demands that her consent be a defeat and that the words she murmurs be avowals he tears from her – demands that she confess her pleasure and recognize her subjection.*
>
> *(The Second Sex 725)*

Devi's mother also writes a letter of the importance of children.

> *When I held you helpless in my protecting arms, when you first smiled at my face bent over yours, when you lisped that previous wordAmma, what vistas of joy opened up before me. (TFN 86).*

Devi becomes restless due to her inability to conceive. She feels childlessness as a rebellion to her married life with Mahesh. She liberates herself and she finds her own identity before motherhood.

Devi has an interest in music and that interest attracts her towards Gopal her neighbour's brother. She thinks of taking quick revenge,

> *I write elaborate scenarios in my mind for the last act – humiliating Mahesh, saying all the things we have left unsaid. I do something bloody, final, a mark of protest worthy of the heroines I grew up with. (TFN 95).*

She elopes with Gopal condemning her husband to a lonely life without wife or child and trampling on the martial vows.

Devi experiences the male world within a short time. She finds there is no difference between Mahesh and Gopal. Devi is not able to get satisfaction in any relationship. She is confused and she wants to be free and liberated in her life. Devi finally returns back to her mother as

> *She rehearsed in her mind the words, the unflinching look she had to meet Sita with to offer her love. To stay and fight, to make sense of it all, she would have to start from the very beginning. (TFN 139)*

Devi's mother Sita plays the role of ideal womanhood. She is a good Veena player but it remains unused and dishonoured after her marriage as nobody recognizes it at her in-law's family. Clinging to the womanhood comes to her naturally.

> *Sita went into labour within a twitch on her dark face; she remained impassive, a model patient, during a childbirth the doctor claimed was the easiest she had ever seen. The minute the baby was laid in her arms, free of the umbilical cord, Sita refuse to let any of the nurses touch her. She had new Veena to play on, and this time she was not going to give it up so easily (TFN 104)*

She overcomes many problems in her life and involves herself in gardening. She decides to live in Madras after her husband's death in a foreign land. She is mentally strong to face her life boldly. Sita independently decides to send her daughter to US for her higher studies and she is able to take back her daughter into the Indian culture with these quantities. Sita receives the telegram message from Devi's husband Mahesh that Devi has gone off from the house and she patiently waits with her Veena for Devi's return to home.

Mayamma, the old family retainer in Mahesh's house narrates her own story. She is married to a drunken as a girl. She is insulted by her mother-in-law for her inability to conceive a child. She has to cook for nearly thirty members in the family and after that she spends her time in prayer. She gives birth to a son Raja and she is a dutiful mother. But her son grows up and sells her mother's bangles. He even beats her and she tolerates everything. Her husband leaves her after her son's birth. When her son and mother-in-law die she finds refuge in the house of Parvatiamma, a rich relative.

Parvatiamma, Mahesh's mother spends her time in Bhajans and forgets her duty as a wife and mother. She leaves the house in search of independent salvation. Mahesh dislikes her and she loses her name as she has rejected the role of a householder.

Conclusion

GithaHariharan's*Thousand Faces of Night* reflects the female characters wishes and frustrations, desires and agony and they break the social bond defined by the patriarchal norms and go away in search of self identity and liberty. She is presenting three generation women in their bonding fed up with their expectations and all pervasive male hypocrisy to get own choice and self. Hariharan in this novel shows with exceptional fictional skills the female characters revolt against marriage and motherhood and their desperate search for identity not entirely against tradition but within family binding.

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Digital India Empowered the Society

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Abstract

Digital India was launched on 2 July 2015 by Prime Minister Narendra Modi. The initiative includes plans to connect rural areas with high-speed internet networks. Digital India consists of three core components. ***Digital India*** *is a campaign launched by the Government of India to ensure that Government services are made available to citizens electronically by improving online infrastructure and by increasing internet connectivity or by making the country digitally empowered in the field of technology.*

Key words: *Digital India, Pillars, Telecommunication, Post , Electronics and Information & techonolgy.*

Introduction

Digital India is a campaign launched by the Government of India to ensure that Government services are made available to citizens electronically by improving online infrastructure and by increasing internet connectivity or by making the country digitally empowered in the field of technology. It was launched on 2 July 2015 by Prime Minister NarendraModi. The initiative includes plans to connect rural areas with high-speed internet networks. Digital India consists of three core components. These include:

- The creation of digital infrastructure
- Delivery of services
- Digitally

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

Objectives

- **To** know about the digital India empowered the society.
- **To** know about the pillars of digital India.
- **To** analyse about the mile stones
- To know about the approach and methodology

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

E-governance initiatives in India took a broader dimension in the mid 1990s for wider sectoral applications with emphasis on citizen-centric services. The major ICT initiatives of the Government included, inter alia, some major projects such as railway computerization, land

record computerization, etc. which focused mainly on the development of information systems. Later on, many states started ambitious individual e-governance projects aimed at providing electronic services to citizens.

Though these e-governance projects were citizen-centric, they could make less than the desired impact due to their limited features. The isolated and less interactive systems revealed major gaps that were thwarting the successful adoption of e-governance along the entire spectrum of governance. They clearly pointed towards the need for a more comprehensive planning and implementation for the infrastructure required to be put in place, interoperability issues to be addressed, etc. to establish a more connected government.

The national level e-Governance programme called National e-Governance Plan was initiaited in 2006. There were 31 Mission Mode Projects under National e-Governance Plan covering a wide range of domains, viz. agriculture, land records, health, education, passports, police, courts, municipalities, commercial taxes, treasuries etc. 24 Mission Mode Projects have been implemented and started delivering either full or partial range of envisaged services

Considering the shortcomings in National e-Governance Plan that included lack of integration amongst Government applications and databases, low degree of government process reengineering, scope for leveraging emerging technologies like mobile, cloud…etc, Government of India has approved the e-Kranti programme recently with the vision of "Transforming e-Governance for Transforming Governance".

All new and on-going eGovernance projects as well as the existing projects, which are being revamped, should now follow the key principles of e-Kranti namely 'Transformation and not Translation', 'Integrated Services and not Individual Services', 'Government Process Reengineering (GPR) to be mandatory in every MMP', 'ICT Infrastructure on Demand', 'Cloud by Default', 'Mobile First', 'Fast Tracking Approvals', 'Mandating Standards and Protocols', 'Language Localization', 'National GIS (Geo-Spatial Information System)', 'Security and Electronic Data Preservation'.

The portfolio of Mission Mode Projects has increased from 31 to 44 MMPs. Many new social sector projects namely Women and Child Development, Social Benefits, Financial Inclusion, Urban Governance, eBhasha…etc have been added as new MMPs under e-Kranti.

Approach and Methodology for Digital India Programme

1. Ministries / Departments / States would fully leverage the Common and Support ICT Infrastructure established by GoI. DeitY would also evolve/ lay down standards and policy guidelines, provide technical and handholding support, undertake capacity building, R&D, etc.
2. The existing/ ongoing e-Governance initiatives would be suitably revamped to align them with the principles of Digital India. Scope enhancement, Process Reengineering, use of integrated & interoperable systems and deployment of emerging technologies like cloud & mobile would be undertaken to enhance the delivery of Government services to citizens.
3. States would be given flexibility to identify for inclusion additional state-specific projects, which are relevant for their socio-economic needs.

4. e-Governance would be promoted through a centralised initiative to the extent necessary, to ensure citizen centric service orientation, interoperability of various e-Governance applications and optimal utilisation of ICT infrastructure/ resources, while adopting a decentralised implementation model.
5. Successes would be identified and their replication promoted proactively with the required productization and customisation wherever needed.
6. Public Private Partnerships would be preferred wherever feasible to implement e-Governance projects with adequate management and strategic control.
7. Adoption of Unique ID would be promoted to facilitate identification, authentication and delivery of benefits.
8. Restructuring of NIC would be undertaken to strengthen the IT support to all government departments at Centre and State levels.
9. The positions of Chief Information Officers (CIO) would be created in at least 10 key Ministries so that various e-Governance projects could be designed, developed and implemented faster. CIO positions will be at Additional Secretary/Joint Secretary level with over-riding powers on IT in the respective Ministry.

Programme Management Structure for Digital India Programme

The Programme management structure for the Digital India prorgamme as endorsed by the Union Cabinet is as follow:

1. For effective management of the Digital India programme, the programme management structure would consists of a Monitoring Committee on Digital India headed by the Prime Minister, a Digital India Advisory Group chaired by the Minister of Communications and IT and an Apex Committee chaired by the Cabinet Secretary. The structure has the needed secretarial/ monitoring/ technical support and appropriate decentralization of power and responsibility to ensure effective execution of the various projects/ components by the implementing departments/ teams.
2. Key components of the Programme Management structure:

a. **Cabinet Committee on Economic Affairs** (CCEA) for programme level policy decisions.

b. A **Monitoring Committee on Digital India under the Chairpersonship of Prime Minister** which will be constituted with representation drawn from relevant Ministries/ Departments to provide leadership, prescribe deliverables and milestones, and monitor periodically the implementation of the Digital India Programme.

c. A **Digital India Advisory Group headed by the Minister of Communications and IT** to solicit views of external stakeholders and to provide inputs to the Monitoring Committee on Digital India, advise the Government on policy issues and strategic interventions necessary for accelerating the implementation of the Digital India Programme across Central and State Government Ministries/Departments. The composition of the Advisory Group would include representation from the Planning

Commission and 8 to 9 representatives from States/UTs and other Line Ministries/Departments on a rotational basis.

d. An **Apex Committee** headed by the Cabinet Secretary would be overseeing the programme and providing policy and strategic directions for its implementation and resolving inter-ministerial issues. In addition it would harmonize and integrate diverse initiatives and aspects related to integration of services, end to end process re-engineering and service levels of MMPs and other initiatives under the Digital India Programme, wherever required.

e. **Expenditure Finance Committee (EFC)/Committee on Non Plan Expenditure** (CNE) to financially appraise/ approve projects as per existing delegation of financial powers. The EFC/ CNE headed by Secretary Expenditure would also be recommending to the CCEA the manner in which MMPs/ eGovernance initiatives are to be implemented, as well as the financial terms of participation for States. A representative of the Planning Commission would also be included in both the EFC and CNE.

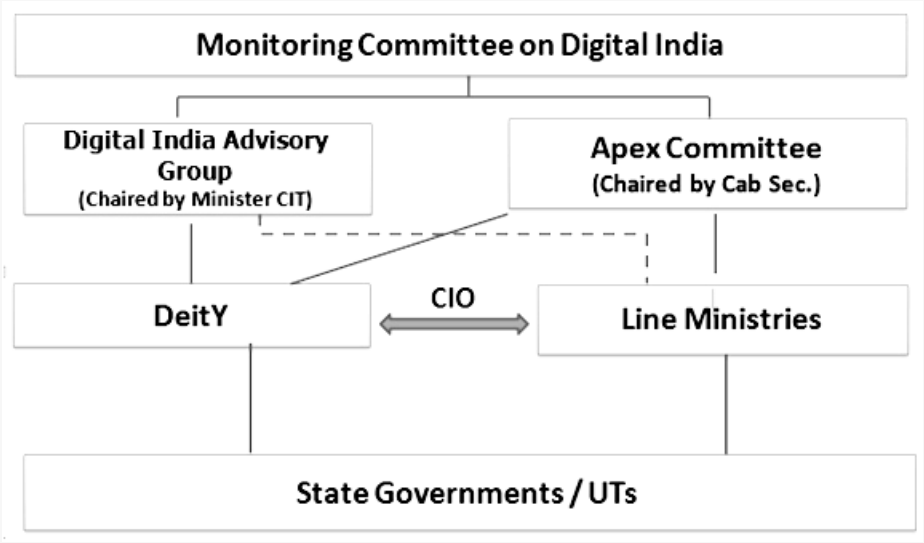
f. A **Council of Mission Leaders on Digital India** headed by Secretary, DeitY would be established as a platform to share the best practices in various existing and new eGov initiatives under Digital India and also to sensitize various government departments about ICT projects of DeitY. While the inter-departmental, integration and interoperable issues of integrated projects / eGovernance initiatives would be resolved by the Apex Committee on Digital India headed by Cabinet Secretary, the technical issues of integrated projects would be resolved by the Council of Mission Leaders.

g. Further, considering the scope of the Digital India Programme and the need to look at issues such as overall technology architecture, framework, standards, security policy, funding strategy, service delivery mechanism, sharing of common infrastructure etc. at a programme level, it is proposed that the technical appraisal of all Digital India projects be done by DeitY, prior to a project being placed before the EFC/ CNE. This appraisal would cover issues relating to inclusion of adoption of Standards, utilization of Cloud and mobile platforms, consideration of security aspects, etc. The Secretary, DeitY or his representative may also be included as a standing special invitee to all EFC/CNE meetings, which are appraising/approving MMPs. It may be mentioned that the DeitY has already set up a Programme Management Unit, namely National eGovernance Division (NeGD) to provide support to departments in conceptualizing, developing, appraising, implementing and monitoring respective MMPs / eGovernance Initiatives.

h. Institutional mechanism of Digital India at State level would be headed by **State Committee on Digital India** by the Chief Minister.**State/UT Apex Committees on Digital India** headed by Chief Secretaries would be constituted at State/UT level to allocate required resources, set priority amongst projects and resolve inter-departmental issues at State level.

3. For effective monitoring of Digital India, usage of Project Management Information System would be mandatory in each new and existing Mission Mode Projects to capture the real or near real time details about the progress of the project. This tool should be proficient enough to capture the parameters for each stage of project namely, conceptualization and development, implementation and post implementation. The parameters could be decided in consultation with various line Ministries / Departments and DeitY.
4. Since the "e-Kranti: National eGovernance Plan 2.0" is already integrated with Digital India Programme, the existing programme management structure established for National eGovernance Plan at both national and state level has also been decided to be integrated appropriately with the programme management structure being envisaged for Digital India Programme at national and State/UT level.

Institutional Mechanism at National Level



Current Status

The Apex Committee on the Digital India programme headed by the Cabinet Secretary and the Digital India Advisory Group chaired by the Minister of Communications and Information Techology has been constituted.

The first meeting of the Apex Committee on the Digital India programme was held on 26.11.2014. The second meeting of the Apex Committee on the Digital India programme was held on 09.02.2015. The actions on decisons made by the Apex Committee are being worked out.

How Digital India will be realized: Pillars of Digital India

Digital India is an umbrella programme that covers multiple Government Ministries and Departments. It weaves together a large number of ideas and thoughts into a single, comprehensive vision so that each of them can be implemented as part of a larger goal. Each individual element stands on its own, but is also part of the larger picture. Digital India is to be implemented by the entire Government with overall coordination being done by the Department of Electronics and Information Technology (DeitY). Digital India aims to provide the much needed thrust to the nine pillars of growth areas, namely Broadband Highways, Universal Access to Mobile Connectivity, Public Internet Access Programme, e-Governance: Reforming Government through Technology, e-Kranti - Electronic Delivery of Services, Information for All, Electronics Manufacturing, IT for Jobs and Early Harvest Programmes. Each of these areas is a complex programme in itself and cuts across multiple Ministries and Departments.

The Government of India hopes to achieve growth on multiple fronts with the Digital India Programme. Specifically, the government aims to target nine 'Pillars of the Digital India' that they identify as being: [10]

1. Broadband Highways
2. Universal Access to Mobile Connectivity
3. e-Governance – Reforming Government through Technology
4. eKranti - Electronic delivery of services
5. Information for All
6. Electronics Manufacturing
7. Digital or IT for Jobs
8. Early Harvest Programmes
9. Public Internet Access Programme

Implementation Approach

All the initiatives, including establishing and expanding core ICT infrastructure, delivery of services ...etc under the Digital India programme have definitive completion time targets. Majority of the initiatives are planned to be realized within the next three years. The initiatives planned for early completion ("Early Harvest Programmes") and citizen communication initiatives ("Information for All") have already started going live and are being completed.

The Digital India programme aims at pulling together many existing schemes. These schemes will be restructured, revamped and re-focused and will be implemented in a synchronized manner. Many elements are only process improvements with minimal cost implications. The common branding of programmes as Digital India highlights their transformative impact. While implementing this programme, there would be wider consultations across government, industry, civil society, and citizens to discuss various issues to arrive at innovative solutions for achieving the desired outcomes of Digital India. DeitY has already launched a digital platform named as "myGov" to facilitate collaborative and participative

governance. Moreover, several consultations and workshops have been organized to discuss the implementation approach of the vision areas of Digital India.

Conclusion

Digital India as a movement has brought some great innovations. The day when very proud Indian citizen will have digital service access is not very far .They are embracing digital initiatives everyday to connect with government .The government came to office we attacked poverty by using power of networks &mobile phones to launch a new era of empowerment .It is aimed at empowering the poor and the privileged .Revival of MTNL and BSNL is a big step in the right direction. The program has exceeded all expectations and impact .The technology as a means to empower and as a tool that bridges that distance between hope and opportunity

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Physio Chemical analysis of various Soil samples

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Abstract

Soil is defined as the upper loose layer of the earth, suitable for plant growth. Soil is also defined as "The upper most layer of the solid crust of the earth". Natural soils are comprised of soil particles of varying sizes. Three broad and fundamental groups of soil textural classes are recognized as Sands, Loams and Clays. Soil acidity is caused by ionisable hydrogen ions or protons. Soil alkalinity may be due to high base saturation particularly with sodium and due to the presence of free carbonates of calcium. The soil samples are collected from Sri Sarada College for Women, Tirunelveli. The Physio Chemical Characteristics such as texture, Calcium Carbonate, Electical conductivity, pH and NPK are analysed. It is concluded that sandy and clay soil (i.e Sample II & III) are suitable for cultivation and gardening. The pH of the soil samples ranges between 8 to 8.6 . From the pH value, it is concluded that all the soil samples are alkaline in nature. All the soil samples have low nitrogen, phosphorous, pottasium content except samples II and III. By using suitable fertilizers these samples can be used for cultivation.

Keywords: *Soil, Loams, Clay, Soil acidity, Nitrogenous fertilizers, phosphatic fertilizers*

Introduction

In early days, Soil was defined as the upper loose layer of the earth suitable for plant growth. Soil is also defined as "the upper most layer of the solid crust of the earth. A surface layer on soils, ranging in thickness from a few millimeters to perhaps as much as 3cm, that is much more compact, hard and brittle when dry than the material immediately beneath it. It consists of rocks that have been reduced to small fragments and have been more or less changes chemically together with the remains of plants and animals that live on it and use it".

Soil Texture

Soil texture refers to the relative percentage of sand, silt and clay in soil. Natural soils are comprised of soil particles of varying sizes. Texture is an important soil characteristic because it will partly determine water intake rates, water storage in the soil, the case of tillage operation aeration status etc and combined by influence soil fertility.

Soil Textural Classes

Textural names are given to soils based upon the relative proportion of each of the three soil separates sand, silt and clay. Three broad and fundamental groups of soil textural classes are recognized.

- Sands
- Loams
- Clays

1. **Sands:** Sand is a naturally occurring granular material composed of finely divided rock and mineral particles. It is defined by size, being finer than gravel and coarser than silt. Sand can also refer to a textural class of soil or soil type; i.e. a soil containing more than 85% sand-sized particles by mass.
2. **Loams:** Loamy soils containing may sub divisions does not exhibit the dominant physical properties any of these 3 soil separates sand, silt and clay.
3. **Clay:** A clay soil must carry at least 35% of the clay separates and in most cases not less than 40%

Textural Class Names Development by U.S.D.D.

Common Name	Texture	Basic Soil Textural Class Name
Sandy Soils	Coarse	Sandy, Loamy Sands
	Moderately Coarse	Sandy Loam fine sandy loam
	Medium	Very fine sandy loam, loam, silt loam, silt
Loamy Soils	Moderately fine	Clay loam, sandy clay loam, Silty clay Loam
Clayer soils	Fine	Sandy clay, silt clay, clay

Textural Groups on the basis of Percentages of Sand Silt and Clay Separates

S.No	Textural Group	Sand %	Silt %	Clay %
1	Sand	80-100	0-20	0-20
2	Sandy loam	50-80	0-50	0-20
3	Loam	30-50	30-50	0-20
4	Silt loam	0-50	50-100	0-20
5	Sandy clay loam	50-80	0-30	20-30
6	Silt clay loam	0-30	50-80	20-30
7	Clay loam	20-50	20-50	20-30
8	Sandy loam	50-70	0-20	20-30
9	Silt clay	0-20	50-70	30-530-500
10	Clay	0-50	0-50	30-100

Soil Reaction (pH)

Soil reaction is measured by pH of a suspension of soil in water. The concept of P_H may be explained with reference to pure water, which is amphoteric, and which hydrogen and hydroxyl ions are in equilibrium with undissociated water molecules.

$$H_2O + H_2O \rightleftharpoons H_3O^+ + OH^-$$

In pure water pH + pOH = 14 and pH = pOH = 7

The pH scale of water is thus spread Over O to 14, therefore acid solution has pH < 7, alkaline solution pH > 7, and a solution having pH =7.0 is neutral.

Soil Acidity

Soil acidity is caused by ionisable hydrogen ions or protons. Exchangeable hydrogen ions which along with their cations are present in soil to neutralize the negative charge arising from isomorphism substitutions is one of the sources. They are displaceable by any cation which is added in fairly highly concentration. At pH 5.0 and above the exchangeable hydrogen ions are the main sources of hydrogen ions. When the pH of the soil system as in soil acids goes below 5.0 the hydrogen ions replace some aluminium from the lattice of the clay minerals to which they are finally attached. The aluminium ions subsequently hydrolyse with the liberation of H+ ions the system is made more basic.

Soil Alkalinity

Soil reaction is alkaline when the pH of a soil more than 7. Soil alkalinity may be due to high base saturation particularly with sodium and to the presence of free carbonates of calcium.

The relative effect of exchangeable sodium in raising pH is more that of the exchangeable calcium and magnesium, because sodium hydroxide is a stronger base. It is generally observed that the higher the ESP (exchangeable sodium percentage), the higher is the soil pH.

Nitrogen use efficiency

It is mainly determined by various kinds of losses in the field, viz. volatilization in the form of ammonia, gentrification, leaching and runoff. The nitrogenous fertilizers are mostly in amide and ammoniacal forms. Application of nitrogen fertilizers in split doses or as top dressing therefore, increases the efficiency of nitrogen use.

Nitrogenous fertilizers

Nitrogenous fertilizers may be either a nitrate, ammonium or amide fertilizer. The general characteristics and use of some of the common nitrogenous fertilizers are discussed below. Nitrogen deficiency is particularly noticeable in the soils of India.

Biological Nitrogen fixation

Nitrogen is one of the three major plant nutrient elements and is taken up by plants from the mineralization of soil organic matter, manures or fertilizers. Nitrogen is an inert gas and requires a large quantity of energy for its conversion into oxides of nitrogen or ammonia. This conversion is known as nitrogen fixation, which may be chemical and/or biological.

Biological nitrogen fixation, already discussed under bacteria and soil algae, is the natural process of fixation of nitrogen of the atmosphere through the activity of soil microorganism.

Phosphatic Fertilizer

Commercial phosphatic fertilizers are phosphate compounds. Monocalcium phosphate is soluble in water dicalcium phosphate in weak acid whereas tricalcium phosphate is almost insoluble. The phosphate left in the residue after both the extraction is insoluble phosphate. Classification based on the solubility of phosphate phosphate phosphatic fertilizer are classifield as follows (i) phosphatic fertilizer containing water soluble phosphate' single superphosphate double superphosphate and superphosphate(ii) phosphatic fertilizers containing almost insoluble phosphate.

Phosphorus use efficiency

In case of phosphorus fertilization, fixation of phosphate is the main problem. Water soluble phosphatic fertilizers soon after application to the soil react preferably with iron and aluminium to form sparingly soluble products, called the initial phosphate reaction products.

Muriate of Potash

It is manufactured from potassium bearing minerals. The fertilizer grade is sometimes reddish due to impurities. Being highly soluble in water, potassium is directly utilized by plants in ionic form and may be adsorbed on the exchange complex of soil.

Sulphate of potash

Langbeinite is a potassium magnesium sulfate mineral with the chemical formula $K_2Mg_2(SO_4)_3$. Langbeinite crystallizes in the isometric-tetartoidal system as transparent colorless or white with pale tints of yellow to green and violet crystalline masses. It has a vitreous luster. Potash fertilizers may either remain in soil solution or in exchangeable form on the clay surface or in non changeable from held by illitic clay minerals. The last one is often called fixation, as it is not readily available to plants.

Organic manures, green manures grown with biological nitrogen fixing inoculants as well as organic wastes(not containing as organic wastes (not containing any toxic material) may be applied to the field prior to cropping. This step increases the contents of N,P,K and other micronutrients of the soil thereby increasing the fertilizer use efficiency in general.

Scope

Like air and water soil plays an important role in nature. Most of us will agree that the soil is the major natural resource available to mankind. Yet it is and has been abused by us to the point of self destruction. In the soil there are nutrients and trace elements both of which plants require for growth. Soil moves continuously in a natural cycle aided by oxygen, water, minerals and decomposing animal and plant matter. These elements create life in the soil, which is on going if not disturbed. We speak of healthy soil if it works well and nutrients continue to be available to the plant.

Scope of this work is to determine the amount of NPK present in the soil, the pH of the soil, the texture content, calcium carbonate and the electrical conductivity of soil samples.

Materials and Methods

- **Determination of Soil Texture :** The Soil Texture is determined by International Pipette method.
- **Determination of Electrical Conductivity:** The Electrical Conductivity of the Samples is determined by using a conductivity meter.
- **Determination of Calcium Caronate (Free Lime) in Soil:** The amount of Calcium Carbonate present in the sample is determined by using Acid neutralization method.
- **Determination of pH:** pH of the samples are determined by using a pH meter.
- **Determination of Nitrogen – (Alkaline permanganate Method):** The amount of Nitrogen present in the sample is determined by using Alkaline Permanganate method.
- **Determination of Phosphorous in Soil:** The amount of Phosphorus present in the sample is determined by using Olsen's method.

Result & Discussion

Table I: Determination of Texture and EC

S.No	Types of Soil	Texture	Electrical Conductivity(mho)
1	Soil sample I	Sand	0.18
2	Soil sample II	Sandy Clay	0.75
3	Soil sample III	Sandy Clay	0.22
4	Soil sample IV	Sand	0.24
5	Soil sampleV	Sandy Silt	0.18
6	Soil sample VI	Sandy Silt	0.21

Table II: Determination of Calcium Carbonate & pH

S.No	Types of Soil	Calcium Carbonate	pH
1	Soil sample I	Medium	8.2
2	Soil sample II	Medium	8.0
3	Soil sample III	High	8.4
4	Soil sample IV	No	8.3
5	Soil sampleV	No	8.4
6	Soil sample VI	No	8.6

Table III: Determination of NPKpk

S.No	Types of Soil	N	P	K
1	Soil sample I	22	10	48
2	Soil sample II	53	19	170
3	Soil sample III	39	3	115
4	Soil sample IV	24	1	90
5	Soil sample V	76	1	60
6	Soil sample VI	24	1	48

Conclusion

The soil samples are collected from Sri Sarada College for Women, Tirunelveli. The Physio Chemical Characteristics such as texture, Calcium Carbonate, Electrical conductivity, pH and NPK are analysed. From the observed values it is concluded that the texture of the soil samples varies from sand, Sandy clay, Sandy silt type. It is concluded that sandy clay soil (i.e Sample II & III) are suitable for cultivation and gardening. The calcium carbonate content of samples I and II are medium, sample III is high. Sample IV, V and VI contains low calcium carbonate value.

The electrical conductivity values for the soil samples are ranging from 0.1 to 0.8. The pH of the soil samples ranging between 8 to 8.6. From the pH value, it is concluded that all the soil samples are alkaline in nature. Which can be increased by adding gypsum, organic matter etc.,. If the pH value of soil is neutral, we can cultivate the crops.

All the soil samples have low nitrogen, phosphorous, potassium content except samples II and III. By using suitable fertilizer there two samples are already used for cultivation. The samples IV, V and VI have very low phosphorous content which can be enriched by adding phosphatic fertilizer. Then these three samples can be used for cultivation.

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A Survey on Image Mining Technique: Theory and Applications

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Abstract

Image mining is a vital technique which is used to pit the knowledge directly from images. Image segmentation is the key phase in image mining. Image mining is simply an expansion of data mining in the field of image processing. It deals with the hidden knowledge extraction, image data association and additional patterns which are not clearly accumulated in the images. It is an interdisciplinary field that incorporates the techniques like computer vision, image processing, data mining, machine learning, data base and artificial intelligence. The most important function of the mining is to generate all related patterns without prior information of the patterns. Rule mining has been implementing to huge image data bases. Mining has been done in accordance with the integrated collections of images and its related data. Several researches have been carried on this image mining. This paper presents a survey on various image mining techniques that were proposed earlier in literature.

Keywords: *Data Mining, Image Mining, Knowledge Discovery, Rule Mining, Datasets, Machine Learning.*

Introduction

Advances in image acquisition and storage technology have led to tremendous growth in significantly large and detailed image databases. The World Wide Web is regarded as the largest global image repository. An extremely large number of image data such as satellite images, medical images, and digital photographs are generated every day. These images, if analyzed, can reveal useful information to the human users. Unfortunately, there is a lack of effective tools for searching and finding useful patterns from these images. Image mining systems that can automatically extract semantically meaningful information (knowledge) from image data are increasingly in demand. The fundamental challenge in image mining is to determine how low-level, pixel representation contained in a raw image or image sequence can be efficiently and effectively processed to identify high-level spatial objects and relationships. In other words, image mining deals with the extraction of implicit knowledge, image data relationship, or other patterns not explicitly stored in the image databases. It is an interdisciplinary endeavor that essentially draws upon expertise in computer vision, image processing, image retrieval, data mining, machine learning, database, and artificial intelligence. While some of the individual fields in themselves may be quite matured, image mining, to date, is just a growing research focus and is still at an experimental stage.

The main obstacle to rapid progress in image mining research is the lack of understanding of the research issues involved in image mining. Many researchers have the wrong impression that image mining is just a simple extension of data mining applications; while others view image mining as another name for pattern recognition. In this paper, we attempt to identify the unique research issues in image mining. This will be followed by a review of what are currently happening in the field of image mining, particularly, image mining frameworks, state-of-the-art techniques and systems. The rest of the paper is organized as follows. Section 2 will discuss research issues that are unique to image mining. Section 3 discusses the future enhancement of image mining research direction. Section 4 gives an overview of the major image

mining approaches and techniques used in image mining by methodologies in image processing. Finally, section 5 concludes with the conclusion of the survey of many techniques in image mining.

The system considers a particular sample of images as an input, whose image features are extracted to correspond to succinctly the image content. Besides the significance of this mining task, it is indispensable to think about invariance problem to certain geometric transformations and robustness concerning noise and other distortions in designing a feature extraction operator. After representing the image content, the model description of a given image - the correct semantic image interpretation - is obtained. Mining results are obtained after matching the model description with its complementary symbolic description. The symbolic description might be just a feature or a set of features, a verbal description or phrase in order to identify a particular semantic (Fernandez et al. 2007).

This paper presents a survey in the next section on various image mining techniques that were proposed earlier. Also, this paper provides a marginal overview for future research and improvements.

Literature Review

Several researches have been carried on this image mining. This section of the paper presents a survey on various image mining techniques that were planned earlier.

Vaibhavi, Shukla1and Jay Vala [1] projected that today's reality is computerized world and we have use advanced information, for example, video, sound, images and so forth in different fields for different purposes. [2016] In present situation, images assume key part in each part of business, for example, various fields like business, medical, satellite etc. Broke down images uncover helpful data to the human clients. Image mining makes do with the extraction of information, image information relationship, or different examples which is not put away in the images. The enthusiasm of image mining additions as the need of image data is creating in everyday life. Forests fires are a tremendous problem. To fight against these disasters, the appropriate analysis of forest flames is a crucial concern. The development in the amount of woods flares of woodland flame in the latest couple of years has obliged governments to take protections. These Forests flames are a noteworthy issue. On the off chance that the flame contenders know spreading flame and where the flame will be in once in a while it would be simple for them to take precautionary measures against the flame. In this way, for that a noteworthy prerequisite for examination and analysis of the fire of flame exists. The analysis of forest fire behavior is done using thermal images of forest fire.

Kun-Che Lu and Don-Lin Yang [2] (2013). proposed a general framework based on the decision tree for mining and processing image data. Pixel-wised image features were extracted and transformed into a database-like table which allows various data mining algorithms to make explorations on it. Image mining is just at its infancy. Most existing data mining techniques have been designed for mining categorical or numerical data and are not well suited for image mining. On the other hand, various image processing techniques such as image segmentation, image enhancement, image restoration, or image compression focus on manipulation, not on analyzing image data. Thus, although many image processing techniques

have been developed, few of them can be adopted to mine image data. In order to mine useful information from a set of *raw* and *label* images, we propose a methodology to transform them into a database-like table and allow any data mining algorithms.

Dr. Mona Nasr and Amr Atif Abd El-Mageed[3] proposed the image Mining Techniques For Optimizing The Treatment Methods Of Lung Cancer(2016). image mining techniques for diagnosis of lung cancer at initial stage by analyzing the medical chest images, which assist radiologists for their chest images interpretation of lung cancer. This research analyzes various image processing and classification techniques and their efficiency used for predicting lung cancer. Lung cancer often spreads toward the center of the chest because the natural flow of lymph out of the lungs is toward the centre of the chest. Image mining is an extension of data mining technique. Image mining is a vital technique which is used to mine knowledge straightforwardly from image. Image mining is rapidly gaining attention among researchers in the field of data mining, information retrieval, and multimedia databases because of its potential in discovering useful image patterns that may push the various research fields to new frontiers. There is a major stage for applying image mining techniques in the form of medical chest images for diagnosis of lung cancer in its early stages, these stages include Data Preprocessing, Segmentation, Feature Extraction and Classification.

Similar Image Retrieval [4] using Multi-Feature Extraction and Content Based Image Retrieval Technique was projected by S. Kousalya, Dr.Antony Selvadoss Thananmani (2013). It is defined in the hue-saturation-value (HSV) color space and produces a 256-bit color histogram is a four-bit integer value, and then encoded by canny's Edge detection. Similarity measure is also very essential part of CBIR to find the closeness of the query image with the database images. The typical Content-Based Image Retrieval system performs two major tasks. The first one is feature extraction (FE), where a set of features, called feature vector, is generated to accurately represent the content of each image in the database. The second task is similarity measurement (SM), where a distance between the query image and each image in the database using their feature vectors is used to retrieve the "closest" images.

Novel Fuzzy Association Rule Image Mining Algorithm [5] for Medical Decision Support System was explained by P. Rajendran and M. Madheswaran (2014). The preprocessing technique applied on the images eliminates the inconsistent data from the CT scan brain images. Then feature extraction process is applied to extract the features from the brain images. A Novel Fuzzy Association Rule Mining (NFARM) applied on the image transaction database which contains the features that are extracted from the CT scan brain images. A new test image has been tested with the mined (NFARM) rules. The proposed NFARM gives the diagnosis keywords to physicians for making a better diagnosis system. The experimental results of the proposed method give better performance compared to the traditional Fuzzy Apriori algorithm and popularly used Association rule mining algorithm.

Prabhakar L,Ranteke [6] discussed the people are interested in using digital images. There is a great need for developing an efficient technique for finding the images. In order to find an image, image has to be represented with certain features. Color, texture and size are three important visual features of an image. We will implement an efficient image retrieval technique which uses dynamic dominant color, texture and size features of an image. As a first step, an

image is uniformly divided into 8 coarse partitions. The centroid of each partition is selected as its dominant color after the above coarse partition. By using Gray Level Co-occurrence Matrix (GLCM), texture of an image is obtained. Color and texture features are normalized. A robust feature set for image retrieval is provided by using the combination of the color and texture features of an image in conjunction with the shape features. In retrieving the similar images, weighted Euclidean distance of color, texture and shape features is used.

From the survey of the available literature, following open issues are identified that need further investigations.

i) Time complexity of algorithm.

ii) Redundancy of features.

iii) Application of optimizing technique for image mining.

iv) Full system realization.

v) Multispectral imagery modified by simulated environmental conditions.

Future Enhancements

Image mining is an extension of data mining technique. Most of the image processing algorithms include image mining. Therefore, image mining is always an emerging field and it has attracted a lot of researchers to investigate its applications in recent years.

- The future research work may include the implementation of the Bayesian networks for relevance feedbacks and more extensive tests with other examples of image forensic work.
- It is also envisaged that subjective testing will be performed with input from forensic experts.
- Some possible future studies that may be conducted in the area of image mining include the experimentations on other image elements such as textures, shape, and so forth.
- It will also be interesting to investigate hidden relationships among images. For example, intensive and extensive exploratory pattern analysis involved in the existing systems in database can be very useful.

Methodology

The existing methodologies consists of following general steps

Step1: Pre-processing The image data is highly non-trivial. reprocessing phase is applied to remove noise from the image. And it also consists of image segmentation. By applying noise removal filter, thinning, cleaning noise can be removed. Preprocessing phase also include object identification. Preprocessing determines the effectiveness of image mining application.

Step2: Feature Extraction. Features, characteristics of the objects of interest, if selected

carefully, are representative of the maximum relevant information that the image has to offer for a complete characterization of the lesion

Step 3: Feature selection. Feature selection helps to reduce the feature space that improves the prediction accuracy.

Step 4: Classification. Classification process involves two phases: training and testing phase.

Conclusion

This paper presents a survey on various image mining techniques that was proposed earlier by researchers for the better development in the field of content based image retrieval. The purpose of the mining is to produce all considerable patterns without prior knowledge of the patterns. Important information can be hidden in images, conversely, few research talk about data mining on them. Image segmentation is the primary phase in image mining. In other words, image mining is simply an expansion of data mining in the field of image processing. Image mining handles with the hidden knowledge extraction, image data association and additional patterns which are not clearly accumulated in the images. Also, this paper provides a marginal overview for future research and improvements. Certain possible future investigations that are discussed may be done in the area of image mining which included the experimentations on other image elements such as textures, shape, etc. Future investigations that are discussed may be implemented in the area of image mining. This overview of image mining focuses on image mining implementations, usability and challenges. It also delivers conceptual overview of methodology.

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Feature Extraction in Thermal Video Using Principal Component Analysis

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Abstract

Face detection is often a first step in quantitative analysis of face images. It is an important research area for visible images and recently also for thermography. Due to technological developments thermal cameras may be embedded into wearable devices to provide security and face recognition. Biometrics use physical characteristics or personal traits to identify a person. Physical feature is suitable for identity purpose and generally obtained from living human body .In thermal video, color mapping and thermal mapping is done for improving the result of feature extraction. The image preprocessing part involves binarization of the acquired thermal face image, extraction of components in the face region, finding the cancroids of the face region and feature extraction. The extracted features could be used for identification and security.

Keywords*: classification, eigenvalue , occlusions, plethysmography, thermography,*

Introduction

From the perspective of computer vision, face detection describes the ability of a computer to determine the identities of different individuals using certain computer software. It is also a form of biometrics, which automatically recognizes a person based on the distinguishing features.. Transform coding relies on the premise that pixels in an image exhibit a certain level of correlation with their neighboring pixels. A transformation is, therefore, defined to map this spatial (correlated) data into transformed. Recognition is done by projecting a new image in the eigenface subspace, after which the person is classified by comparing its position in eigenface space with the position of known individuals The human visual system has limited spatio-temporal sensitivity, but many signals that fall below this capacity can be informative[1]. Face detection offers a non-intrusive way of identifying a person as the camera can capture one's face from certain distances away. Face recognition is very imperative in medical imaging field. A person's face is extracted using thermal imaging system to subsequently measure one's body temperature. The most dominant application of face detection is in the surveillance system, commonly used by the authority to locate criminals and terrorists. Previously, numerous face recognition researches were conducted in visual spectrum. The captured images are highly dependent on the lighting conditions from the external environment. This visua l imaging system poses one major problem when the outdoor environment is dark. As a result, detecting faces using the conventional digital colour images is very difficult and can lead to performance degradation. The face detection algorithm operates based on the head curve geometry, in which the face is extracted after five points are located on the head boundary, followed by drawing a curve around the neck region. Most of these techniques require the use of sophisticated devices, which can be expensive and difficult to set up in a home environment. Facial image recognition Eigenface method is based on the reduction of face-dimensional space using Principal Component Analysis (PCA) for facial

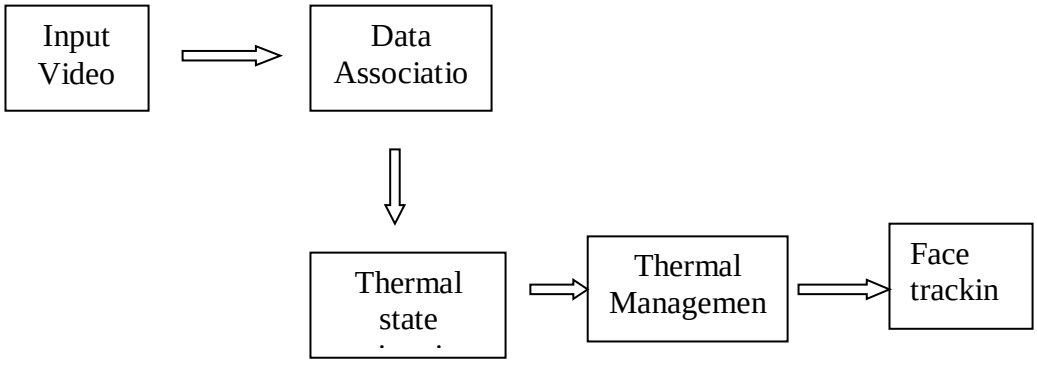
features. The main purpose of the use of PCA on face recognition using eigenfaces was formed (face space) by finding the eigenvector corresponding to the largest eigenvalue of the face image [2]. Thermal imaging based face detection has various types of applications, which include temperature monitoring at the airport and surveillance system in the dark. Breathing causes noticeable changes in temperature at the nasal area, which appear as periodic changes in the face thermogram. The major arteries of the body produce time-varying heat patterns which yield information about the cardiac cycle [3].

Literature Survey

Thermal images encountered in real applications are structured data that present lots of repeated patterns, in particular edges, smooth regions, and textures cardiac pulse leads the subtle color change of a skin, a pulsatile signal which can be described as photoplethysmographic (PPG) signal can be measured through recording facial video using a digital camera.[4]. This is probably why methods incorporating sparse and adaptive patch priors have exhibited very good performances. An extremely fast face detector will have broad practical applications.. In applications where rapid frame-rates are not necessary, our system will allow for significant additional postprocessing and analysis. [5]. Thermal camera was used to gather video of a subject performing regular nasal breathing, nasal hyperventilation and an additional trial simulating one type of sleep apnea. Simultaneously, a respiratory inductance plethysmography (RIP) band gathered respiratory data. [6]. Fortunately, these difficulties can be overcome: given , the function to minimize with respect to and is convex. Two aspects of edge detection are analyzed, namely accuracy of localization and sensitivity to noise. The detection of corners and trihedral vertices is analyzed for gradient schemes and zero-crossing schemes [7]. The variable splitting method can be used to overcome the non quadratic form of the data-fidelity term.We propose a feature selection criterion that is optimal by construction because it is based on how the tracker works, and a feature monitoring method that can detect occlusions, disocclusions, and features that do not correspond to points in the world [8].

Proposed System

Block Diagram



Visual Thermaling

At each frame, object hypotheses is detected using a pre-trained detector and used as an input of our system. Based on the proposed data association, the provided detections are associated with existing thermals and existence probabilities of thermals are updated. Then, thermal states are estimated with the associated detections using particle filtering. Existing thermals with the low existence probabilities are terminated. Terminated thermals are associated with other thermals or detections to link them. A new thermal is initialized using observations which are not associated with any thermals. Discriminative appearance, shape and motion models of describing thermaled objects are learned by updated thermaling results. We present Thermal affinity and observation models used in visual thermaling and thermal management is presented.

Image Decomposition

Decomposing an image f into its structural part (objects or geometric features at various scales represented by their boundaries, and mean intensities) and its texture it contains f = u + v model where the u part is called the Cartoon component and consists of relatively smooth or flat plateau for the object surrounded by abrupt intensity walls whereas the small-amplitude oscillatory v part is called texture.

$$\min \Phi_k(\mathbf{x}) = f(\mathbf{x}) + \mu_k \sum_{i \in I} c_i(\mathbf{x})^2$$

ALM algorithm is used to separable structures $L_A(u, v, w, \lambda, \eta)$ where v and w are completely separable from each other and their minimization can be implemented in parallel with fixed *u*, the minimization for **w** reduces to the minimization with each $\mathbf{w}_i$, and the minimization for *v* is component wisely separable.

Image Restoration

It is based on a variable splitting to obtain an equivalent constrained optimization formulation, the ADM with Gaussian back substitution can be regarded as a prediction-correction type method whose predictor is generated by the ADM procedure and the correction is completed by a Gaussian back substitution procedure. When the variable x appears in two sets of constraints, it is possible to substitute the new variables x1 in the first constraints and x2 in the second, and then join the two variables with a new "linking" constraint which requires that x1=x2.

Image Feature Extraction and Classification

The main function of this step is to determine whether human faces appear in a given image, and where these faces are located at. The expected outputs of this step are patches containing each face in the input image. In order to make further face recognition system more robust and easy to design, face alignment are per-formed to justify the scales and orientations of these patches. Besides serving as the pre-processing for face recognition, face detection could be used for Region Of Interest(ROI) detection, retargeting, video and image classification, etc. When a query comes in, the same dimension reduction procedure is performed on it and enter its

features into the trained classifier. The output of the classifier will be the optimal class (sometimes with the classification accuracy) label or a rejection note (return to manual classification). Support Vector Machine (SVM) construct pose estimators which gives fast estimation of head pose. The Symmetrical property of the face images are used to classify the half possible views with the trained set. Principal component analysis (PCA) is a dimensionality reduction technique which is used for compression and face recognition problems. It is also known as eigenspace projection or karhunen-loeve transformation. PCA calculates the eigen vectors of the covariance matrix, and projects the original data onto a lower dimensional feature space, which is defined by eigen vectors with large eigen values.

Result and Discussion

The first step of every pattern recognition system is Feature extraction. The dimension reduction of extracted features is to decrease the time and error of recognition and is done by means of PCA algorithm. After preprocessing all images are got in to a single matrix. Each column in the matrix represents a single image. Get the covariance matrix by using this holistic image matrix. Finally get the feature vectors for the original images. The SVM was trained by using these feature vectors. Some videos may contain regions of temporal signals that do not need amplification, or that, when amplified, are perceptually unappealing. Static scenes contain subtle changes that are invisible to the naked human eye. From the input image,some features are extracted and stored in the database.color mapping and thermal mapping is done for background subtraction from the frame.The overall efficiency is measured by PSNR and Skewness. The result shows that overall accuracy of the face detection is more than 83%

A.)Original image and Classified Image

Mapping Schema: A.)Color Mapping B.)Thermal mapping

Conclusion:

The proposed method in thispaper takes a thermal video from an infrared camera and obtains features of an image by using advanced signal processing techniques. The results of the experiments show that this method can be used for vital sign monitoring with over 83 percent accuracy. This method could be used efficiently for identification and security system. In future the framework can be implemented in smartphones. The paper also speculates that the vital sign measurement system can be implemented only using thermal imaging with the introduction of higher resolution and frame rate cameras.

S.NO	Sample Image	PSNR	Skewness
1	Image 1	29	4
2	Image 2	35	5
3	Image 3	31	6
4	Image 4	28	4
5	Image 5	30	5

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Demonitisation And Economic Growth

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Abstract

Demonetization technically is a liquidity shock; a sudden stop in terms of currency availability. The announcement was made by the Prime Minister of India Narendra Modi in an unscheduled live televised address on 8 November 2016. The government claimed that the demonetisation was an effort to stop counterfeiting of the current banknotes allegedly used for funding terrorism, as well as a crack down on black money in the country. The move was also described as an effort to reduce corruption, the use of drugs, and smuggling. Demonetization is a generations' memorable experience and is going to be one of the economic events of our time. Its impact is felt by every Indian citizen. Demonetization affects the economy through the liquidity side. Its effect will be a telling one because nearly 86% of currency value in circulation was withdrawn without replacing bulk of it.

Keywords: *Demonetization, Economy, Impact, Economic growth*

Introduction

The demonetization of Rs.500 and Rs.1,000 banknotes was a policy enacted by the Government of India on 8 November 2016, ceasing the usage of all Rs.500 and Rs.1,000 banknotes of the Mahatma Gandhi Series as legal tender in India from 9 November 2016.

The announcement was made by the Prime Minister of India Narendra Modi in an unscheduled live televised address at 20:00 Indian Standard Time (IST) on 8 November. In the announcement, Modi declared that use of all Rs.500 and Rs.1,000 banknotes of the Mahatma Gandhi Series would be invalid past midnight, and announced the issuance of new Rs.500 and Rs.2,000 banknotes of the Mahatma Gandhi New Series in exchange for the old banknotes. The banknotes of Rs.100, Rs.50, Rs.20, Rs.10 and Rs.5 of the Mahatma Gandhi Series and Rs.2 and Rs.1 remained legal tender and were unaffected by the policy.

The government claimed that the demonetisation was an effort to stop counterfeiting of the current banknotes allegedly used for funding terrorism, as well as a crack down on black money in the country. The move was also described as an effort to reduce corruption, the use of drugs, and smuggling.

Demonetization as a cleaning exercise may produce several good things in the economy. At the same time, it creates unavoidable income and welfare losses to the poor sections of the society who gets income based on their daily work and those who doesn't have the digital transaction culture. Overall economic activities will be dampened in the short term. But the immeasurable benefits of having more

transparency and reduced volume of black money activities can be pointed as long term benefits.

Views on Demonetization

Initially, the move received support from several bankers as well as from some international commentators. It was heavily criticised by members of the opposition parties, leading to debates in both houses of parliament and triggering organised protests against the government in several places across India.

In the days following the demonetization, banks and ATMs across the country faced severe cash shortages with severe detrimental effects on a number of small businesses, agriculture, and transportation. People seeking to exchange their notes had to stand in lengthy queues, and several deaths were linked to the inconveniences caused due to the rush to exchange cash. Also, following the announcement, the BSE SENSEX and NIFTY 50 stock indices crashed for the next two days.

As the cash shortages grew in the weeks following the move, the demonetization was heavily criticised by prominent economists, such as Kaushik Basu, Paul Krugman, Amartya Sen and Steve Forbes.

Impact of Demonetization

1. Demonetization is not a big disaster like global banking sector crisis of 2007; but at the same time, it will act as a liquidity shock that disturbs economic activities.
2. **Liquidity crunch (short term effect):** liquidity shock means people are not able to get sufficient volume of popular denomination especially Rs 500. This currency unit is the favourable denomination in daily life. It constituted to nearly 49% of the previous currency supply in terms of value. Higher the time required to resupply Rs 500 notes, higher will be the duration of the liquidity crunch. Current reports indicate that all security printing press can print only 2000 million units of RS 500 notes by the end of this year. Nearly 16000 million Rs 500 notes were in circulation as on end March 2016. Some portion of this was filled by the new Rs 2000 notes. Towards end of March approximately 10000 million units will be printed and replaced. All these indicate that currency crunch will be in our economy for the next four months.
3. **Welfare loss for the currency using population:** Most active segments of the population who constitute the 'base of the pyramid' uses currency to meet their transactions. The daily wage earners, other labourers, small traders etc. who reside out of the formal economy uses cash frequently. These sections will lose income in the absence of liquid cash. Cash stringency will compel firms to reduce labour cost and thus reduces income to the poor working class.

There will be a trickle up effect of the liquidity chaos to the higher income people with time.

4. **Consumption will be hit:** When liquidity shortage strikes, it is consumption that is going to be adversely affected first.

5. Consumption ↓→ Production ↓→ Employment ↓→ Growth ↓→ Tax revenue ↓

6. **Loss of Growth momentum-** India risks its position of being the fastest growing largest economy: reduced consumption, income, investment etc. may reduce India's GDP growth as the liquidity impact itself may last three -four months.

7. **Impact on bank deposits and interest rate:** Deposit in the short term may rise, but in the long term, its effect will come down. The savings with the banks are actually liquid cash people stored. It is difficult to assume that such ready cash once stored in their hands will be put into savings for a long term. They saved this money into banks just to convert the old notes into new notes. These are not voluntary savings aimed to get interest. It will be converted into active liquidity by the savers when full-fledged new currency supply takes place. This means that new savings with banks is only transitory or short-term deposit. It may be encashed by the savers at the appropriate time. It is not necessary that demonetization will produce big savings in the banking system in the medium term. Most of the savings are obtained by biggie public sector banks like the SBI. They may reduce interest rate in the short/medium term. But they can't follow it in the long term.

8. **Impact on black money:** Only a small portion of black money is actually stored in the form of cash. Usually, black income is kept in the form of physical assets like gold, land, buildings etc. Hence the amount of black money countered by demonetization depends upon the amount of black money held in the form of cash and it will be smaller than expected. But more than anything else, demonetization has a big propaganda effect. People are now much convinced about the need to fight black income. Such a nationwide awareness and urge will encourage government to come out with even strong measures.

9. **Impact on counterfeit currency:** The real impact will be on counterfeit/fake currency as its circulation will be checked after this exercise.

10. **Tax:** Having closed the voluntary disclosure window for undisclosed money, it has been reported that government will keep a close watch on deposits over Rs 2 lakh in cash. This would mean increased tax net, higher tax collection and

a better tax to GDP ratio. Philips Capital in a report says that the extent of parallel economy, which was 23.2% of GDP, is now around 25-30% of GDP. As the money gets accounted and more taxes are collected, government might be tempted to reduce tax rates going forward.

11. **Interest rates:** One of the biggest impacts of demonetisation would be high value transactions, especially land and gold. This would result in lower inflation, tempting the central bank to reduce interest rates. But the bigger impact on interest rates will be the liquidity with which banks will be flushed. CLSA's points out that banks would benefit with higher CASA (Current Account Savings Account) growth as a part of the $ 190 billion cash pile gets deposited with them. Higher deposit growth and continuing weak credit growth would create opportunities for lending rate cuts and investment activities to pick-up.

12. **Liquidity:** Movement of goods and money will be hit in the short. A Bank of America Merrill Lynch note says that wholesale channel forms over 40% of the sales for the Indian consumer firms. This channel works mainly on cash transactions and will likely witness liquidity constraints in the near term. This could disrupt the supply chain and impact growth in the December quarter. The report further adds that consumer firms typically provide tight credit terms (<7 days) to the distributors, who in turn provide credit to the wholesalers/ outlets on their own accounts. Due to overall tightening of the cash-liquidity in the supply chain, consumer firms may be forced to offer easier credit terms to the distributors in the near term. As a result we expect an increase in their receivables in the December quarter.

13. **GST:** Demonetisation comes at an important as the country heads to a new tax regime with the implementation of GST. Demonetisation would increase the tax net and along with GST result in reduction of black money generation. Along with GST, demonetisation will lead to a higher tax/GDP ratio, says CLSA.

14. **Financial assets:** As money lying idle comes in the main economy it would move to higher yielding and liquid assets. Money is likely to move to financial assets from gold, precious metals, real estate and plain cash. Equities might reflect the panic in the economy in the short term, but the move is will be beneficial in the long run say most of the broker's report and expert comments

Impact of Demonetization on Economic Growth

Modi's demonetization initiative caused a sudden breakdown in India's commercial ecosystem. Trade across all facets of the economy was disrupted, and cash-

centric sectors like agriculture, fishing, and the voluminous informal market were virtually shutdown, with many businesses and livelihoods going under completely

Ambit Capital, a respected Mumbai-based equity research firm, has officially estimated that the demonetisation-driven cash crunch will result in GDP growth crashing to 0.5% in the second half of financial year 2016-17. This means the GDP growth for six months, from October 2016 to March 2017, could decelerate to 0.5%, down from 6.4% in the previous six months.

Further, Ambit Capital estimates that during the October to December quarter that we are currently in, the GDP growth may contract, thus showing negative growth. However, Ambit is hopeful that a strong formalisation of the informal economy will ensue through 2017 until 2019 and this disruption could also crimp GDP growth in 2017-18 to 5.8 % from their earlier estimate of 7.3%.

That's perhaps the case for the prosecution. The disruption to the economy will be such that there will be, not just no growth in this last quarter of the year but actually a shrinking of the economy.

"The demonetisation-driven cash crunch that is playing out in India will paralyse economic activity in the short term. We expect a strong 'formalisation effect' to play out as nearly half of the non-tax paying businesses in the informal sector (40% share in GDP) will become unviable and cede market share to their organised sector counterparts. We expect this dynamic to crimp GDP growth in India in FY18 as well and hence we have cut our FY18 GDP growth estimate to 5.8 per cent YoY (from 7.3 per cent)," Ambit economists Ritika Mankar Mukherjee, Sumit Shekhar and Prashant Mittal said in a note.

The microeconomic effects are beneficial. There have long been concerns about terror financing through forged notes. There is substantial tax revenue going uncollected.

Economies are complex things with many moving parts. The inflow of money into bank accounts will reduce interest rates and that has a stimulatory effect upon economic growth. And reducing the budget deficit as some of that black money gets taxed, which will reduce inflation.

India has amongst the highest level of currencies in circulation at 12.1% of GDP. Cash on hand is an estimated at around 3.2% of household assets, higher than investment in equities, or roughly around $ 220 billion. Of this cash, 87% is in the form of Rs 500 and Rs 1,000 notes or roughly Rs 14 lakh crore ($190 billion).

A significant portion of the household cash on hand is generated by economic transactions that are not reported to tax authorities or generated through corruption,

says the report. Scrapping the higher denomination money would either result in these being brought into the system or the money just disappearing.

If the money disappears, as some hoarders would not like to be seen with their cash pile, the economy will not benefit. On the other hand if the money finds its way in the economy it could have a meaningful impact.

Conclusion

Although India's demonetization initiative was seemingly severely mismanaged, it does not mean that the entire endeavour was a complete failure. There are some positive indicators. The cash-centric black market for the most part ceased to function with the nullification of the bulk of its currency. Cashless transaction systems have been encouraged across the board. The demonetization process has also repaired India's counterfeiting problem for the near to mid-term. It was previously estimated that 250 out of every million Indian bank notes were fakes. This recent culling of the bulk of the country's currency instantly rendered counterfeits as valuable as the paper they're printed on. It has also been reported that the new 500 and 2,000 rupee notes are less vulnerable to counterfeiting, having advanced security features. Demonetization drive will wipe out a measure of corruption and tax evasion in India's real estate market.

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A Study on consumer buying behavior on Smart Phones in Tirunelveli District

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Abstract

Consumer behaviour is defined as an act of using or consuming goods or services. Modern Indian buyers along with the product features also want to know how and why the product will benefit them., buying behaviour involves a complicated series of stimulus and response.Today is the era of communication as innovative and novel means of communication came into existence.

Key Words: *Consumer, buying behaviour, innovative buyer, products, etc.*

Introduction

Consumer behaviour is the study of human responses to products or services and the marketing of products/services. Consumer behaviour is defined as an act of using or consuming goods or services. Modern Indian buyers along with the product features also want to know how and why the product will benefit them. They look not only for what a product can do but also what it means to them. Thus, buying behaviour involves a complicated series of stimulus and response.

Statement of the Problem

It is said that necessity is the mother of invention. In the often-day, there were a lot of unsophisticated way and means of communication like birds, messenger, postal mail, etc. Today is the era of communication as innovative and novel means of communication came into existence. Hence a research on **"Consumer Buying Behaviour on Smart Phones in Tirunelveli District"** has been made.

Objectives

1. To examine and understand the consumer buying behaviour of smart phone in Tirunelveli.
2. To identify the factors that influence them to select the smart phone.
3. To know the consumers favorite brand of smart phones in Tirunelveli District.
4. To know the findings and offer suggestions.

Research Design

The researcher has selected Convenience sampling technique and the total number of sample was 150.

Collection of Data

The primary data have been collected directly from smart phone customers through Questionnaire. Secondary data have been collected from standard books, articles, magazines, encyclopedia and internet.

- **Primary Data:** The study mainly based upon the primary data. Questionnaire method is used to collect the data from the respondents. Sample size of 150 respondents have been appended in the research report.
- **Secondary Data:** To substantiate and to support the primary data required particular have been gathered by referring the reputed journals, magazines, standard newspaper and book. Some of the information has been gathered from authorized web source.

Review of Literature

- **Neal et al (2004)[1]** post-purchase decision involves experience of the consumer about their purchase. Although the importance of this stage is not highlighted by many authors argues that this is perhaps one of the most important stages in the consumer decision making process as it directly affects the consumers' purchases of the same product or service from the same supplier in the future.
- **Krishn(2010)[2]** consumers are individuals and households that buy the firms product for personal consumption. It often used to describe two different kinds of consuming entities: the personal consumers and the organizational consumers. The activities these consumers undertake when obtaining,consuming, and disposing of products and a service is known as consumer behaviour.

Analysis of Data

Table 1: Socio Economic Profile of the Respondents

Socio Economic Variables		No. of respondents	percentage
Gender	Male	75	50.0
	Female	75	50.0
Educational Qualification	UG	48	32.0
	PG	33	22.0
	Professional	69	46.0
Living Area	Rural	95	76
	Urban	30	24
Type Of The Family	Joint	36	24.0
	Nuclear	114	76.0

According to the above table it is clear that 50% of the respondents are male and 50% of the respondents are female. 46% of the respondents belong to professional degree. 76% of

the respondents are living in rural area and 24% of the respondents are living in urban area. Only 24% of the respondents are living in joint family and 76% of the respondents are living in Nuclear family.

Problems faced on buying behaviour

In order to know the problems faced in buying behavior the researcher used T-test. The results are shown in the following table.

Table 2: Problems Faced in Buying Behaviour

Sl.No	Problems	T value	DF	Sig. (2-tailed)	Mean difference
1.	Personal Level	9.745	61	.000	1.210*
2.	Social Level	-2.807	57	.007	-.448**
3.	Environmental Level	-3.562	45	.001	-.674**
4.	General Level	.552	53	.583	.093**
5.	Motivational Level	.540	50	.546	.078**

*-Significant; **- Insignificant

The above table shows the factors which are the problems faced in buying behaviour. The decision rule used to find out the significant factor is t value > 0 and sigma<.05. Accordingly only one factor i.e. personal Level was proved to be significant factor. Hence all the others are proved insignificant. It is proved that the consumers face more problems in their buying behaviour.

Factors influencing consumer buying behaviour

In order to know the factors influencing consumer buying behaviour Rank Test was used. The results shown in the table below.

Table 3: Factors Influencing Consumer Buying Behaviour

Sl.No	Factors	Average (Mean Value)	Rank
1.	Price	3.17	III
2.	Brand	3.30	II
3.	Social Status	3.02	VI
4.	Quality	3.79	I
5.	Technology	3.06	V
6.	Memory Capacity	3.10	IV

According to the above table it is clear that the Quality got the first rank with the mean score of 3.79. The Brand got the second rank with the mean score of 3.30. Social status got the sixth rank with the mean score of 3.02.

Findings

- 50% of the respondents are male. And 50% of the respondents are female.
- 46% of the respondents belong to professional degree.
- 76% of the respondents are living in rural area and 24% of the respondents are living in urban area.
- Only 24% of the respondents are living in joint family and 76% of the respondents are living in Nuclear family.
- Majority of the consumers have personal problems in buying a smart phone.
- The quality of the phone and the brand image are the major factors determining the buying behaviour.

Conclusion

By analyzing existing literature and based on our field survey, it may be concluded that the consumer buying behaviour is an important phenomena. The change in the attitudes will change the buying behaviour which results in the change in the production and changes in the culture level. It is the high time the business people should take necessary steps for the capturing the taste and preferences of the consumers.

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A Study on Higher Education System in India

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"We want that education by which character is formed, strength of mind is increased, the intellect is expanded, and by which one can stand on one's own feet"

- Swami Vivekananda

Abstract

The changes in higher education scenario in India are utterly fast, are prodigious and continue to be inexorable. Private participation in professional education (especially management education, which is the mostsought after option) has brought changes in the perception of the society in general and students in particular,from such education being a welfare activity to a business activity.. Higher education institutions, therefore, play an extremely significant role in providing knowledge and skills through teaching and research programmes.

Key words: *Education, Humanities, Cultural Growth.*

Introduction

Education is extremely important for the progress of a homeland. It is entirely unimaginable and totally mind-boggling in the modern-day world to think of a society or a nation without education. It is the education which contributes immensely to the growth and development in every sphere of life. Higher education is considered to be the key factor in supporting and accelerating the process of national development. Higher education institutions, therefore, play an extremely significant role in providing knowledge and skills through teaching and research programmes. Keeping in view the importance of higher education for individual and nation, the subject has become an important issue of investigation and research for the scholars.

In the twenty first century, more than ever before in human history, the richness or poverty of nations depends on the level and quality of their higher education.The knowledge, skills, and resourcefulness of people are becoming critical to the world economy. It is worth mentioning that human capital even in the United States is now considered to be at least three times more important than physical capital.

The Mission Force on Higher Education and Society was summoned by the World Bank and UNESCO in 2000 to bring together experts from 13 countries for the purpose of reconnoitring the future of higher education in the developing world.Higher education provides excellence in both science and social science subjects. Advancement in science subjects is necessary for material progress whereas higher education in subjects of human and social sciences, humanities and arts, language and literature is essential for cultural growth and development of interpersonal relationship among people.

Higher Education System In India

Higher education in India covers all post-secondary education beyond class twelve in different subject areas including all professional streams such as Engineering And

Technology, Medical, Agriculture etc. It comprises three levels of qualifications-Bachelor's or undergraduate degree programmes, Master's or post graduate degree Programmes and the pre-doctoral and doctoral programmes such as M.Phil. and Ph.D. Normally a bachelor's programme in India requires three years of education after twelve years of school education. The bachelor's degree in professional field of study in agriculture, dentistry, engineering, pharmacy, technology and veterinary medicine generally takes four years, while for architecture and medicine, a bachelor's degree takes five and five and a half years respectively. There are other bachelor's degrees in education, journalism and librarianship that are treated as second degrees. A bachelor's degree in law can either be taken as an integrated degree programme lasting five years or a three-year programme as a second degree. The master's degree is normally of two-year duration. It could be based on project without a thesis or on research with a thesis.The origin of modern higher education system in India can be outlined to the middle of 19th century. Wood dispatch of 1854 formed the basis for establishment of modern education in the country. Keeping in view the recommendations the first three linking universities, on the model of university of London, were established at the Presidencies of Bombay, Madras and Calcutta in 1857.7 It may be mentioned here that before the establishment of these three universities, the colleges of India were autonomous in character. There were 27 colleges affiliated to the first three universities in 1857-58. The number of universities rose to 20 and the colleges to 500 with 0.1 million students at the time of independence.

Objectives of the Study

The main objectives of the study are as under :

1. To study the expansion of institutions of higher education.
2. To identify the main problems being faced in higher education system in India.
3. To elucidate the history of higher education.

Methodology

Historical Method has been used to collect realistic information about the growth and development of higher education.Descriptive/Empirical method has been used to collect primary data from university students about their views and perceptions on various issues with reference to growth and development of higher education.For this purpose, questionnaire-cum-interview schedule was constructed and standardized for student respondents to collect their views and perceptions on various issues pertaining to growth and development of higher education.A sample of 55 students was selected from various universities by giving due weightage to the gender, designation and stream.

Review

Agrawal (2002) discussed the implications of trade in education for India under GATS. He opined that the objective of GATS under WTO was to tune the educational systems of various countries in accordance with the requirements of the global market. Therefore the trade in education especially in higher education is being seriously considered to be brought under WTO policy regime. He visualised that the globalisation of higher

education would put the Indian academic institutions in fierce competition with foreign education providers. But the Indian institutions were not in a position to compete with them. Therefore he stressed the need for restructuring higher education in India and expanding the choices for polytechnic, technical, health related and management courses.

Analysis of the study

Hypothesis Framed

- There will be no difference between Importance and availability, of infrastructure facilities as support services that play an important role in shaping the brand image of the institute between undergraduate and post graduate students.

VARIABLE	MALE N = 30		FEMALE N=25		t value
	MEAN	SD	MEAN	SD	
Importance	2.11	1.77	2.07	1.68	0.88 NS
Availability	1.95	1.21	1.92	1.16	0.23NS

According to the above table there is no significant difference found to exist between under graduate and post graduate students as they attach similar important to the infrastructure and other support services. Hence the hypothesis is accepted.

- Role of Regulatory Bodies for Maintaining Quality of Education

VARIABLE	MALE N = 30		FEMALE N=25	
	no	%	no	%
Excellent	15	50	12	48
Satisfactory	10	33.33	8	32
Not satisfactory	3	10	3	12
Poor	2	6.67	2	8

As far as the role of regulatory bodies is concerned very few respondents rate it as excellent. The majority of the respondents consider their role to be only satisfactory. It is interesting to that those who rate the role as excellent are all majority of male respondents.

Present Scenario

The majority of institutions proposing bachelor degree courses are in English medium .There are various college universities and private institutions that offer BBA /Bcom/BCA etc. The colleges follow are yearly examination system and offer basic knowledge in specific areas. After completing a Bachelors degree the student can qualify for admission to master's degree programme in more specialized areas. Post graduate studies

comprise of Master's degrees such as MA/Mcom/Msc/MBA /MD etc. These courses are offered by universities ,colleges affiliated to universities /AICTE and private universities. Recent trends are towards growth in professional colleges both in the area of medical ,engineering and management.The present day scenario however extends the strings of Indian higher education to the private sector thereby ensuring competition ,access, and education for a price.

Findings

Overtime the perception of higher education as a commercial service is gaining acceptance worldwide .Over the last 50 years, the Government of India has provided full policy support and substantial public funds to create one of the world's largest systems of higher education. These institutions, with the exception of some notable ones, have however, not been able to maintain the high standards of education or keep pace with developments

in the fields especially in knowledge and technology.According to the result in t test table there is no significant difference found to exist between undergraduate and post graduate students as they attach similar important to the infrastructure and other support services. Hence the hypothesis is accepted. The more noticeable trend in the growth of higher educational institutions in the nation is that the share of private unaided educational institutions is increasing constantly. Presently, more than sixty percent of the general education colleges and about ninety percent of the professional colleges in the state are in the private sector.

Suggestions

- The expansion of higher education should be carried out only in a planned manner keeping in view the needs of social setup and professional requirements of the society at State, National and International levels.
- The standards of higher education should be so raised that it attract the Students of other countries also.
- In order to improve education in the private colleges the state should meet at least the salary component of teachers in privately managed colleges where large number of students study.
- In order to produce better students the examination system needs to be Overhauled. As per recommendations of the UGC, the semester system Joined with choice based credit system should be implemented throughout the state.

Conclusion

The 11th Plan proposed number of measures for inclusive education.The syllabuses for most of the courses in the universities are out dated and not according to the need of changing times. The practical training instructed in the professional institutes of higher learning is not up to the mark. It is because of this reason that despite getting highest degrees, most of our students remain unemployable.An overwhelming majority of the respondents of this study also feels that the government and government aided institutions of higher learning in the country lack adequate facilities for proving quality education in the state.

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A Study on Women Employees of Super Market in Thoothukudi District

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Abstract

This study examines the women employees of super market. It aims to assess the problems of women employees in super market. The data collected from 50 respondents covering urban areas in Thoothukudi district. Percentage analysis and rank test is used for arriving conclusion. The finding of the study is women employees faced in the super market is receiving the goods very delay.

Keywords: *Annual Increment and Bonus, Super market and Women employees*

Introduction

Historically, women had no real power in the outside world, no place in decision-making. Woman is an integral segment of society they make almost half of the total population of our country. One can hardly ignore the multi dimensional role of women in every society. Today, ecology speaks for the earth, for the other in human/environmental relationships and ecofeminism by speaking for the original others seeks to understand the interconnected roots of all domination and ways to resist and change. It has been seen in general that women work with greater dedication and more meticulously that a man, where in majority of the women suffer from malnutrition, illiteracy, poor health, inadequate housing, unemployment, insecurity and denial of the legal rights. The reason for this situation is that majority of women are still not aware of their legal rights. So they are unable to demand their due right. By participating in environmental stand-offs against those who are assuming the right to control the natural world, they are helping to create an awareness of domination at all levels. From this perspective, consensus decision making and non-hierarchical organization become accepted facts of life.

Statement of the Problem

Female labour has been an important segment of the workforce in India. With the changing socio-economic scenario, women's productive roles have assumed new dimensions. The observance of the International Women's Year in the last quarter of the 20th century was a historic landmark in the calendar of women's progress. Women's participation has always been necessary for the success of social and economic development. The main objective of the policies of the Government of India with regard to female labour has been to remove the handicaps under which they work, to strengthen their bargaining capacity, to improve their wages and working conditions, to augment their skills and to open up better employment facilities for them. Women tend to focus on doing a good job first, then working on relationship-building, whereas men are more likely to seek out relationship-building opportunities, such as attending client meetings, earlier on. As a manager, reach out to the female employee. Their working hours do not below the level of eight however it may go up to ten hours a day.

Objectives of the Study

1. To find out the reasons for choosing the job in supermarket;
2. To analyze the problems faced by the employees of supermarket.

Methodology

The study is based upon the primary and secondary data. The primary data were collected through a well structured interview schedule. The secondary data relating to women employees of supermarket was obtained from text books, journals and websites. The primary data were collected from about 50 respondents who reside in the study area by applying simple random sampling technique. The empirical study is based on a sample of 50 respondents, who are working in six different supermarkets namely Vanavil, Mangai, Sumangali, Bharathi, Rani and Millers in Thoothukudi district. The collected data have analysed by using appropriate statistical tools like percentage analysis and rank test for arriving conclusions.

Collection of Data

Both primary and secondary data were collected. Primary data was collected through interview schedules and secondary data was collected through published articles, journals, magazines, books, newspapers and websites. A structured schedule consisting questions pertaining to all the variables included in the study was used to collect the required data through direct personal interview. The final questionnaire was put to use among randomly selected women employees in supermarket. At the end of the data collection period, a total of 50 respondents are provided the data.

Results and Interpretation

The demographic characteristics of the sample are analysed and found that among the total respondents of 50. The sample was dominated by middle aged (21 – 25 years). As far as educational qualification is concerned, more than 18 percent of the respondents are having the educational qualification at college level. In addition, 22 percent of the respondents drawing their monthly income exceeds Rs. 2000 – Rs. 3000. More than 34 percent of the respondents are not committed with their family i.e. unmarried and most of the respondents have five members in their family which may necessitate them to go for the job.

Table 1: Demographic Profile of the Respondents

S. No	Items	No. of Respondents	Percentage
1	**Age:**		
	Below 20	12	24
	21 – 25	19	38
	26 – 30	10	20
	Above 30	9	18
2	**Monthly Income:**		
	Below Rs. 2000	8	16
	Rs. 2000 – Rs. 3000	22	44
	Rs. 3001 – Rs. 4000	13	26

	Above Rs. 4000	7	14
3	**Education:**		
	Illiterate	13	26
	School Level	18	36
	College Level	19	38
4	**Marital Status:**		
	Married	16	32
	Unmarried	34	68
5	**Family Members:**		
	Below Three	8	16
	Four	14	28
	Five	19	38
	Above Five	9	18

Selection of this Job

The women employees opt this job in a shake of family situation accounting for 44 percent followed by technical knowledge (26%). It is also observed that about 22 percent of the employees do this as a time pass/entertainment and remaining 8 percent of the employees are experience through job work. This may be true in case of part time employees being the students.

Table 2: Selection of this Job

Chosen this Job	No of Respondents	Percentage
Family Situation	22	44
Time pass / Entertainment	11	22
Experience	4	8
Technical knowledge	13	26
Total	**50**	**100**

Bonus and Annual Increment

Table 3 shows that about 74 percent of women employees has availed bonus and 84 percent of them get annual increment. But 26 percent and 16 percent of the women employees didn't get bonus and annual increment respectively.

Table 3: Bonus and Annual Increment

Facility / Availability	Yes	No
Bonus	37 (74)	13 (26)
Annual Increment	42 (84)	8 (16)
Total	**79**	**21**

Allowances

Table 4 reveals that out of 50 respondents, 32 percent of the respondents are provided with Provident Fund contribution but in case of ESI it is 24 percent. Again 38 percent of the respondents have weekly off. As far as the leave with pay is concerned about 6 percent of the respondents are benefited.

Table 4: Allowances

Contributions & Benefits	No of Respondents	Percentage
P.F	16	32
ESI	12	24
Weekly Holiday	19	38
Leave with pay	3	6
Total	**50**	**100**

Problems of Women Employees

The main problem of women employees faced in the supermarket is receiving the goods very delay. Because they revealed the customers that the particular items will be available in the next day or a couple of days, failing which found themselves guilty. So this got the first rank and competition among sales persons it's got second rank. Another problem faced by the women employee in supermarket is the owners ask to do their own work (personal) work. This kind of work wouldn't make them comfortable. So it got the third rank. Women employees faced in the supermarket is theft. So it is got fourth rank. The statement using them for all the works at a time ignoring their stress is another problem which stood fifth rank and irrespective by consumers and getting scolding it's got sixth rank and seventh rank respectively.

Table 5: Problems of Women Employees

Problems	1	2	3	4	5	6	7	Total	Rank
Irrespective by consumers	15	16	13	18	18	14	9	103	VI
Getting scolding	12	14	21	13	15	14	12	101	VII
Theft	18	28	15	20	21	20	12	134	IV
Use us for all works	19	20	20	14	22	10	19	124	V
Use us for personal works	23	18	15	28	18	20	14	136	III
Competition among sales persons	28	32	15	20	26	14	18	153	II
Delay in regarding delivery of goods	24	32	15	26	20	32	20	169	I

Suggestions

- The women employees turn out to be much focused to their assignments and complete it in the best possible manner, so they should not be given pressure by using them for all works including personal work.
- As the working women are somehow financially independent now, so get the chance to mould their life in a way they like it to be. Thus the confidence and self respect of

women are also enhancing in exposure to more and more job opportunities and more significant positions and responsibilities.

Conclusion

Women are an underprivileged segment in the society. But this is gradually vanished over a period of time. However they need compulsory education, upgrading of skills among employed women, national labor legislation supporting part-time employment, gender neutral selection of employees for training, alleviation of wage discrimination in the private sector, elimination of gender stereotyping of domestic work, expanded accessibility to health facilities, for integrating women in development. Economic development of the family can be achieved by the contribution of women. The employers make use of this work force which deserves for various fabulous reasons. They should be family treated in terms of salary, recognition, promotion etc. So that the larger proportion of available human resources could be integrated into the development process.

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Demonetization – An Overview

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Abstract

Demonetization is the process of withdrawal of a particular form of currency from circulation. Demonetization becomes necessary whenever there is a change in the National currency. The old unit of currency must be retrieved and replaced with a new currency unit. It involves either introducing new notes or coins of the same Sometimes, a country completely replaces the old currency with new currency. The first was on 12th January 1946 (Saturday) ,second on 16th January 1978 (Monday) and the third was on 8th November 2016 (Tuesday). This paper explain about the effect of demonetization.

Key words: *demonetization, effect, Currency,*

Introduction

The demonetization of the 500 rupees note and the 1,000 rupees note—the two highest currency denominations available in India—will likely hit the economy hard in the short term. The surprise move is expected to grind the consumption activity in the Indian economy to a virtual halt. The service sectors, which dominate economic activity and involve a sizable chunk of cash transactions, will likely be hit the hardest.

On 8th November when the whole world was waiting for the outcome of United States presidential elections, Hon'ble Prime Minister Shri Narendra Modi came out with his master stroke on corruption, counterfeit currency, terrorism and black money by announcing de-monetization and ceasing of Rs 500 and Rs. 1000 notes as a part of legal tender in India.

The move has been taken to curb the menace of black money and fake notes by reducing the amount of cash available in the system. It is also interesting to note that this was not the first time the Government of India has gone for the demonetization of high-value currency. It was first implemented in 1946 when the Reserve Bank of India demonetized the then circulated Rs 1,000 and Rs 10,000 notes. The government then introduced higher denomination banknotes in Rs 1000, Rs 5000 and Rs 10000 in a fresh avatar eight years later in 1954 before the Morarji Desai government demonetized these notes in 1978. On November 8 evening, Prime Minister Modi, in his televised address to the nation, made Rs 500 and Rs 1000 notes invalid, saying that it was aimed at curbing the "disease" of corruption and black money which have taken deep root. People holding notes of Rs 500 and Rs 1,000 can deposit the same in their bank and post office accounts from November 10 till December 30. All notes in lower denomination of Rs 100, Rs 50, Rs 20, Rs 10, Rs 5, Rs 2 and Re 1 and all coins continued to be valid, and new notes of Rs 2,000 and Rs 500 were introduced. There was no change in any other form of currency exchange be it cheque, DD, payment via credit or debit cards etc

Definition

Demonetization is the act of stripping a currency unit of its status as legal tender. It occurs whenever there is a change of national currency, the current form or forms of money is pulled from circulation and retired, often to be replaced with new notes or coins.

Demonetization is the process that involves a change of national currency, where old currency is replaced with new currency.

Reasons

1. To tackle black money in the economy.
2. To lower the cash circulation in the country which "is directly related to corruption in our country, " according to PM Modi.
3. To eliminate fake currency and dodgy funds which have been used by terror groups to fund terrorism in India.
4. To combat inflation
5. To combat corruption and crime (counterfeiting, tax evasion)
6. To discourage a cash-dependent economy
7. To facilitate trade

Methods

Demonetization is that people are devising various unique methods for transforming their black money in to white one.

- Depositing money in the accounts of their poor relatives and friends.
- Enticing the people with some percentage of money for exchange.
- Asking their employees to stand in the long queues in front of Banks and ATMs for getting money exchanged.
- Hiring labors for some Rupees ranging from Rs 500/- to 700/- for becoming the part of long queues in front of banks/ ATMs.
- Converting black money in to gold.
- Paying a few months salaries in advance.
- Paying back loans forcibly.
- Using their influence / links with bank employees and so on.

Advantages of Demonetization

1. Eradicate the use of fake currency.
2. Tackle with corruption due to currency upholds.
3. Withdrawal of old currency and bring unaccounted money back into the banking system by a considerable increase in bank deposits. With this the idle money becomes productive.
4. Encourage digital payment modes to reach the target of a cashless society.
5. Reduction of illegal activities.
6. Reduced tax avoidance by encouraging higher tax payments.

With a perfect implementation, demonetization policy can provide a great boost to any country's economy.

Disadvantages of Demonetization

1. Inconvenience to the public.
2. Huge economic cost to the nation.
3. Disruption of business activities.
4. Decrease in sales, particularly cash based sales.
5. Lab our / Wage payment issues.
6. Additional printing and distribution cost of new currency.
7. Problem situation for small-scale business operations that deal in cash.

Impact of Demonetization

- On GDP (Gross Domestic Product) - Immediate impact – negative, medium to long term impact – net positive
- On Inflation: Immediate impact- downward pressure on prices, , medium to long term impact-neutral
- Liquidity- Immediate- Positive, long term –neutral
- Currency in circulation- Immediate-negative, long term – neutral
- Fiscal defecit- Immediate- neutral, long term – Positive
- Current account deficit - Immediate- Positive, long term – negative,
- Digital Payment : - Immediate- Positive, long term - Positive,
  (Source Business Standard, November 14,2016)

Demonetization affect business in India

Madhya Pradesh, soya bean and maize trade slow down, Bengaluru mandi and Belgav Iel in Karnataka are likely to shut down. Cotton and groundnut markets are closed in Gujarat in Kerala cardamom markets are shut. The garment industry in Tiruppur stares at a mounting crisis.

Reducing the use of cash in the economy and attacking black money the government emphasizing the need for doing away with cash transactions and adapt a digital transaction ,

Digital cash: with the demonetization drive leading to long ques at banks and ATMS to exchange the old notes and for withdrawal of cash ,A large number of urban population are taking to digital transactions for their daily expenses but inconvenience and difficulties faced by poor citizens some may not even be able to survive this crisis.

Reducing the use of cash in the economy and attacking black money the government emphasizing the need for doing away with cash transactions and adapt a digital transaction especially after the demonetization and cash crunch experiences by people. Despite the introduction of Jan Dhan account many who have no bank accounts simply because they have few or no amount to left to deposit in bank after their house hold expenditure. Many educated customers hesitate to use online transactions because of fraudulent transactions resulting in the loss of their hard earned money. i.e fear of exploitation in the form of service charges and other

hidden charges. Most of the people in India where majority still earn their wages in cash and saves in cash. Where a large number of villages have no bank.

Conclusion

The government should plan effectively and implement the plan so as not to penalize the honest tax payers(Salaried class citizens, Pensioners etc) should punish only the corrupted individuals /companies/organizations.

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Impact of Goods and Services Tax in India – An Overview

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Abstract

This paper is an analysis of what the impact of GST (Goods and Services Tax) will be on Indian Tax Scenario. Here stated with a brief description of the historical scenario of Indian taxation and its tax structure. Then the need arose for the change in tax structure from traditional to GST model. GST has be detailed discuss in this paper as the background, silent features and the impact of GST in the present tax scenario in India. GST is the only indirect tax that directly affects all sectors and sections of our economy. Ignorance of law is no excuse but is liable to panel provisions, hence w-hy not start learning GST and avoid the cost of ignorance. Therefore, we all need to learn it whether willingly or as compulsion. The goods and services tax (GST) is aimed at creating a single, unified market that will benefit both corporate and the economy. The changed indirect tax system GST-Goods and service tax is planned to execute in India. Several countries implemented this tax system followed by France, the first country introduced GST. Goods and service tax is a new story of VAT which gives a widespread setoff for input tax credit and subsuming many indirect taxes from state and national level. India is a centralized democratic and therefore the GST will be implemented parallel by the central and state governments as CGST and SGST respectively. The objective will be to maintain a commonality between the basic structure and design of the CGST, SGST and SGST between states .In this article, I have started with the introduction, in general of GST and have tried to highlight the objectives, features, benefits, rate of GST, etc.

Key Words: *Goods and Services Tax, Value Added Tax, Input Tax Credit, Central Goods and Services Tax, State Goods and Services Tax ,Special Additional Duty, Constitution Amendment Bill*

Introduction

The word tax is derived from the Latin word '*taxare'* meaning to estimate. A tax is not a voluntary payment or donation, but an enforced contribution, exacted pursuant to legislative authority" and is any contribution imposed by government whether under the name of toll,

tribute, impost, duty, custom, excise, subsidy, aid, supply, or other name." Introduction of the Value Added Tax (VAT) at the Central and the State level has been considered to be a major step – an important step forward – in the globe of indirect tax reforms in India. If the VAT is a major improvement over the pre-existing Central excise duty at the national level and the sales tax system at the State level, then the Goods and Services Tax (GST) will indeed be an additional important perfection – the next logical step – towards a widespread indirect tax reforms in the country. Almost 150 countries have introduced GST in some form. While countries such as Singapore and New Zealand tax virtually everything at a single rate, Indonesia has five positive rates, a zero rate and over 30 categories of exemptions. In China, GST applies only to goods and the provision of repairs, replacement and processing services. GST rates of some countries are given below. Country Australia France Canada Germany Japan Singapore Sweden New Zealand Rate of GST 10% 19.6% 5% 19% 5% 7% 25% 15% World over in almost 150 countries there is

GST or VAT, which means tax on goods and services. Under the GST scheme, no distinction is made between goods and services for levying of tax. In other words, goods and services attract the same rate of tax. GST is a multi-tier tax where ultimate burden of tax fall on the consumer of goods/ services. It is called as value added tax because at every stage, tax is being paid on the value addition. Under the GST scheme, a person who was liable to pay tax on his output, whether for provision of service or sale of goods, is entitled to get input tax credit (ITC) on the tax paid on its inputs.GST is one indirect tax for the whole nation, which will make India one unified common market. GST is a single tax on the supply of goods and services, right from the manufacturer to the consumer. Credits of input taxes paid at each stage will be available in the subsequent stage of value addition, which makes GST essentially a tax only on value addition at each stage. The final consumer will thus bear only the GST charged by the last dealer in the supply chain, with set-off benefits at all the previous stages.

Chronology on GST – Past, Present and the Future

Date	Event
1974	Report of L K Jha committee suggested moving to Value Added Tax (VAT) regime
1986	Introduction of Modified Value Added Tax (MODVAT)
1991	Chelliah Committee recommends VAT/Goods and Service Tax (GST)
1 July 1994	Service tax is introduced in India
1999	'Empowered Committee' comprising of representatives of 29 States is formed for the purpose introduction of State VAT
2000	Implementation of uniform State sales tax rates (1%, 4%, 8%, 12%)
2002	Introduction of input credit against services of same category
1 April 2003	Harayana was the first State to introduce VAT. Subsequently, other States introduced VAT (20 States in 2005, 5 States in 2006, Tamil Nadu in 2007 and lastly, Uttar Pradesh in 2008).
1 September2004	Central level taxes integrated by introduction of 'CENVAT'
January 2005	White Paper, a policy document indicating basic policies of 'State VAT'was released by the 'Empowered Committee'
1 April 2005	Value Added Tax introduced in 20 States
February 2006	Finance Minister Mr. P. Chidambaram comments in the Budget Speech that there is a large consensus that the country must move towards a national level GST that must be shared between the Center and States. He proposes 1 April 2010 as the date for introducing GST.
1 April 2006	VAT implemented in 5 more States
1 January 2007	VAT implemented in Tamil Nadu
April 2007	Central Sales Tax phase out initiated (4% , 2%)
May 2007	Empowered Committee (EC) of State Finance Ministers in consultation with Central Government, constituted a Joint Working Group (JWG), consisting of officers of Central and State Governments to examine various models and options for GST and to give their assessment of the same to the EC.
November 2007	Joint Working Group (JWG) presented its report on the GST to the

	EC. The EC accepted the report on GST submitted by the JWG
1 January 2008	VAT implemented in Uttar Pradesh
April 2008	Empowered Committee finalises the overall strategy for GST introduction in India
November 2009	'First Discussion Paper' on GST is released by EC
December 2009	Task Force submits its report on GST to 13th Finance Commission
January 2009	Department of Revenue releases its comments on 'First Discussion Paper' on GST
February 2011	IT strategy (by Mr Nandan Nilekani) for GST released
March 2011	115th Constitution Amendment Bill introduced in Parliament.However, this 115th CAB was lapsed (in May 2014) with change of Government at Center
1 April 2011	Point of Taxation Rules, 2011 introduced
1 July 2012	Negative List of Services Regime introduced - Place of Provision of Services Rules, 2012 introduced
July 2014	Union Finance Minister states in the Budget Speech 2014 that "I do hope we are able to find a solution in the course of this year and approve the legislative scheme which enables the introduction of GST"
19 December2014	The 122nd Constitutional Amendment Bill (hereafter referred as CAB) was introduced in Lok Sabha
6 May 2015	The 122nd CAB passed in Lok Sabha
6 May 2015	122nd CAB introduced in Rajya Sabha. 122nd CAB was referred to Select Committee of Rajya Sabha
22 July 2015	Rajya Sabha Select Committee tabled its report
October 2015	The Government has placed in the public domain four reports on key business processes i.e. registration, payment, refunds and returns in GST regime.
14th June 2016	Draft GST law made available
March 2017	nal draft of the Central Goods and Service Tax Bill (CGST) and Integrated Goods & Service Tax Bill (IGST) & GST Compensation Bill.

GST in India

Structure: India is proposing to implement 'Dual GST'. In 'Dual GST' regime, all the transactions of goods and services made for a consideration would attract two levies i.e. CGST (Central GST) and SGST (State GST).

Taxes that will be subsumed in GST: GST would be levied on all the transactions of goods and services made for a consideration. This new levy would replace almost all of the indirect taxes. In particular, it would replace the following indirect taxes:

At Central level

- Central Excise Duty (including Additional Duties of Excise)
- Service Tax
- CVD (levied on imports in lieu of Excise duty)
- SACD (levied on imports in lieu of VAT)
- Central Sales Tax
- Excise Duty levied on Medicinal and Toiletries preparations,
- Surcharges and cesses

At State level

- VAT/Sales tax
- Entertainment tax (unless it is levied by the local bodies)
- Luxury Tax
- Taxes on lottery, betting and gambling
- Entry tax not in lieu of Octroi
- Cesses and Surcharges

However, certain items / sectors would be outside the GST regime. Products such as alcohol, petroleum products would remain outside GST regime. Further, Land and properties may remain outside since they are neither goods nor services. Looking at the international practices on GST, it would be advisable that the products outside GST regime should be minimum as allowing parallel levies will only add to cascading effect than any good to industry/economy.

Administration: CGST and IGST will be administered by 'Central Government' and SGST will administered by the respective State Governments.

Law relating to GST: In GST regime, there will be one CGST law and 31 SGST law for each of the States including two Union Territories and one IGST law governing inter-State supplies of goods and services.

Mechanism of input tax credit in GST: Input tax credit of CGST would be available for payment of CGST and input tax credit of SGST would be available for payment of SGST. However, cross utilization of tax credit between the Central GST and the State GST would be allowed in the case of inter-State supply of goods and services under the IGST model.

Interstate transactions in GST: All the inter-State transactions of goods and services would attract IGST (which would be CGST plus SGST). The inter-State seller will pay IGST on value addition after adjusting available credit of IGST, CGST, and SGST on his purchases. The Exporting State will transfer to the Centre the credit of SGST used in

payment of IGST. The Importing dealer will claim credit of IGST while discharging his output tax liability in his own State. The Centre will transfer to the importing State the credit of IGST used in payment of SGST.

Inter-State supply of goods for consideration to attract additional tax: Draft GST law provides that an additional tax up to 1% will be levied by Centre on inter-State supply of **goods** (and not on services) made for consideration. Thus, effectively inter-State branch

transfers will not attract this 1% additional Tax. This additional tax will be assigned to States from where the supply of goods originates. This additional tax will be applicable for a period of two years and could be extended further by GST Council. The credit of this additional levy will not be available as thus it will be a cost in the supply chain.

Composition scheme: There would be option available to tax payers having turnover less than Rs. 50 lacs can *opt* for Composition scheme wherein they need to discharge tax at a floor rate of 1%.

Exports and SEZ: Exports would be zero rated, as currently they are. In case of SEZ, if the supply of goods or services is for consumption in processing zone then it would be zero rated by refund mechanism.

Imports: Even under GST regime, Customs duty would be levied on import of goods in India. Currently, import of 'goods' suffers CVD (in lieu of Excise duty) and SACD (in lieu of VAT). On import of taxable services, Service tax is attracted. In GST regime, both CGST and SGST would be levied on import of goods and services.

Special Area Schemes: The exemptions available under Special Industrial Area Schemes would continue up to legitimate expiry time both for the Centre and the States. Later, after the introduction of GST, the tax exemptions, remissions etc. related to industrial incentives would be converted, if at all needed, into cash refund schemes.

Rate of GST

Rate of GST is one of the most important and contentious issues. Before we understand what could be the rate of proposed GST, lets understand the current rates of indirect taxes on goods and services.

The different rates of taxes on goods and services is tabulated below:

Particulars	Goods	Services
Excise duty	12.50%/ 6% / 2%	-
VAT	12.50% / 13.50% / 14%	-
CST	2%(against Form C)	-
Local Body Tax	0.10 % to 8%	-
Service Tax	14%	-

From the press release dated 4 December 2015, the Revenue Neutral Rate (RNR) as proposed by the Chief Economic Advisor Shri. Arvind Subramanian indicated the following GST rate structure:

Particulars	Concessional	Standard	Luxury goods
GST rate	12%	17%-18%	40%

Further, it appears that the Government may review the existing exemptions so that the list of goods exempt from CGST is aligned to the SGST list and most of items currently exempt from VAT may be exempt from both components of GST.

It is worth noting that the proposed cumulative rate of GST is much higher than the Revenue Neutral Rate suggested by the Thirteenth Finance Commission (TFC). TFC had suggested a rate of 5% CGST and 7% SGST.

Objectives of GST

One of the main objectives of GST would be to eliminate the cascading impact of taxes on production and distribution cost of goods and services. The exclusion of cascading effects i.e. tax on tax will significantly improve the competitiveness of original goods and services which leads to beneficial impact to the GDP growth. It is felt that the GST would serve a superior reason to achieve the objective of streamlining indirect tax regime in India which can remove cascading effects in supply chain till the level of final consumers only when all such above mentioned indirect taxes are completely included in GST. It is understood that alcohol, tobacco and petroleum products will not be enclosed by GST as alcohol and tobacco are considered as Sin Goods, and governments do not like to allow free trade on these property.

Features of GST Model

Salient features of the proposed model are as follows:

i. The GST shall have two components: one levied by the Centre (referred to as Central GST), and the other levied by the States (referred to as State GST). Rates for Central GST and State GST would be approved appropriately, reflecting revenue considerations and acceptability.
ii. The Central GST and the State GST would be applicable to all transactions of goods and services made for a consideration except the exempted goods and services.
iii. The Central GST and State GST are to be paid to the accounts of the Centre and the States individually.
iv. Since the Central GST and State GST are to be treated individually, taxes paid against the Central GST shall be allowed to be taken as input tax credit (ITC) for the Central GST and could be utilized only against the payment of Central GST.
v. Cross utilization of ITC between the Central GST and the State GST would not be permitted except in the case of inter-State supply of goods and services.

vi. Ideally, the problem related to credit accumulation on account of refund of GST should be avoided by both the Centre and the States except in the cases such as exports, purchase of capital goods, input tax at higher rate than output tax etc.
vii. To the extent feasible, uniform procedure for collection of both Central GST and State GST would be prescribed\ in the respective legislation for Central GST and State GST.
viii. The States are also of the view that Composition/Compounding Scheme for the
ix. purpose of GST should have an upper ceiling on gross annual turnover and a floor tax rate with
x. respect to gross annual turnover.
xi. The taxpayer would need to submit periodical returns, in common format as far as possible, to both the Central GST authority and to the concerned State GST authorities.
xii. Each taxpayer would be allotted a PAN-linked taxpayer identification number with a total of 14/15 digits. This would bring the GST PAN-linked system in line with the prevailing PAN-based system for Income tax, facilitating data exchange and taxpayer compliance.

Benefits of GST

❖ **For business and industry**

1. Easy compliance: A robust and comprehensive IT system would be the foundation of the GST regime in India. Therefore, all tax payer services such as registrations, returns, payments, etc. would be available to the taxpayers online, which would make compliance easy and transparent.
2. Uniformity of tax rates and structures: GST will ensure that indirect tax rates and structures are common across the country, thereby increasing certainty and ease of doing business. In other words, GST would make doing business in the country tax neutral, irrespective of the choice of place of doing business.
3. Removal of cascading: A system of seamless tax-credits throughout the value-chain, and across boundaries of States, would ensure that there is minimal cascading of taxes. This would reduce hidden costs of doing business.
4. Improved competitiveness: Reduction in transaction costs of doing business would eventually lead to an improved competitiveness for the trade and industry.
5. Gain to manufacturers and exporters: The subsuming of major Central and State taxes in GST, complete and comprehensive set-off of input goods and services and phasing out of Central Sales Tax (CST) would reduce the cost of locally manufactured goods and services.

This will increase the competitiveness of Indian goods and services in the international market and give boost to Indian exports. The uniformity in tax rates and procedures across the country will also go a long way in reducing the compliance cost.

❖ **For Central and State Governments**

1. Simple and easy to administer: Multiple indirect taxes at the Central and State levels are being replaced by GST. Backed with a robust end-to-end IT system, GST would be simpler and easier to administer than all other indirect taxes of the Centre and State levied so far.
2. Better controls on leakage: GST will result in better tax compliance due to a robust IT infrastructure. Due to the seamless transfer of input tax credit from one stage to another in the chain of value addition, there is an inbuilt mechanism in the design of GST that would incentivize tax compliance by traders.
3. Higher revenue efficiency: GST is expected to decrease the cost of collection of tax revenues of the Government, and will therefore, lead to higher revenue efficiency.

❖ **For the consumer**

1. Single and transparent tax proportionate to the value of goods and services: Due to multiple indirect taxes being levied by the Centre and State, with incomplete or no input tax credits available at progressive stages of value addition, the cost of most goods and services in the country today are laden with many hidden taxes. Under GST, there would be only one tax from the manufacturer to the consumer, leading to transparency of taxes paid to the final consumer.
2. Relief in overall tax burden: Because of efficiency gains and prevention of leakages, the overall tax burden on most commodities will come down, which will benefit consumers.

Impact of Goods and Service Tax

I. **Food Industry:** The application of GST to food items will have a significant impact on those who are living under subsistence level. But at the same time, a complete exemption for food items would drastically shrink the tax base. Food includes rains and cereals, meat, fish and poultry, milk and dairy products, fruits and vegetables, candy and confectionary, snacks, prepared meals for home consumption, restaurant meals and beverages. Even if the food is within the scope of GST, such sales would largely remain exempt due to small business registration threshold. Given the exemption of food from CENVAT and 4% VAT on food item, the GST under a single rate would lead to a doubling of tax burden on food**.**

II. **Housing and Construction Industr**y: In India, construction and Housing sector need to be included in the GST tax base because construction sector is a significant contributor to the national economy.

III. **FMCG Sector:** Despite of the economic slowdown, India's Fast Moving Consumer Goods (FMCG) has grown consistently during the past three – four years reaching to $25 billion at retail sales in 2008. Implementation of proposed GST and opening of Foreign Direct Investment (F.D.I.) are expected to fuel the growth and raise industry's size to $95 Billion by 201835.

IV. **Rail Sector:** There have been suggestions for including the rail sector under the GST umbrella to bring about significant tax gains and widen the tax net so as to keep overall GST rate low. This will have the added benefit of ensuring that all inter – state

transportation of goods can be tracked through the proposed Information technology (IT) network.

V. **Financial Services:** In most of the countries GST is not charged on the financial services. Example, In New Zealand most of the services covered except financial services as GST. Under the service tax, India has followed the approach of bringing virtually all financial services within the ambit of tax where consideration for them is in the form of an explicit fee. GST also include financial services on the above grounds only.

VI. **Information Technology enabled services:** To be in sync with the best International practices, domestic supply of software should also attract G.S.T. on the basis of mode of transaction. Hence if the software is transferred through electronic form, it should be considered as Intellectual Property and regarded as a service. And if the software is transmitted on media or any other tangible property, then it should be treated as goods and subject to G.S.T. 35 According to a FICCI – Technopak Report. Implementation of GST will also help in uniform, simplified and single point Taxation and thereby reduced prices.

VII. **Impact on Small Enterprises:** There will be three categories of Small Enterprises in the GST regime. Those below threshold need not register for the GST . Those between the threshold and composition turnovers will have the option to pay a turnover based tax or opt to join the GST regime. Those above threshold limit will need to be within framework of GST Possible downward changes in the threshold in some States consequent to the introduction of GST may result in obligation being created for some dealers. In this case considerable assistance is desired. In respect of Central GST, the position is slightly more complex. Small scale units manufacturing specified goods are allowed exemptions of excise up to Rs. 1.5 Crores. These units may be required to register for payment of GST, may see this as an additional cost.

Need for GST

- Avoid Double Taxation
- Ease of Doing Business
- Avoid Cascading Effect
- Simplified & Unified Tax System
- Simple Collection System

Conclusion

GST is the most logical steps towards the comprehensive indirect tax reform in our country since independence. GST is leviable on all supply of goods and provision of services as well combination thereof. All sectors of economy whether the industry, business including Govt. departments and service sector shall have to bear impact of GST. All sections of economy viz., big, medium, small scale units, intermediaries, importers, exporters, traders, professionals and consumers shall be directly affected by GST. One of the biggest taxation reforms in India -- the

Goods and Service Tax (GST) -- is all set to integrate State economies and boost overall growth. GST will create a single, unified Indian market to make the economy stronger. Experts say that GST is likely to improve tax collections and Boost India's economic development by breaking tax barriers between States and integrating India through a uniform tax rate. Under GST, the taxation burden will be divided equitably between manufacturing and services, through a lower tax rate by increasing the tax base and minimizing exemptions.

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Micro and Rural Women Entrepreneurship: - Opportunities and Challenges

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Abstract

Women entrepreneurship is a recent phenomenon in India which came into prominence in late 1970s. Now we see that more and more women are venturing as entrepreneurs in all kinds of business and economic activities. Though at the initial stage, women entrepreneurship developed only at urban areas, in recent times, it has extended its wings to rural and semi-urban areas too. In the seventies, women concentrated much on traditional activities only. But due to the spread of education and favourable government policies towards development of women entrepreneurship, women now, have changed their attitudes and diverted towards non-traditional activities too. They show favourable response to changing situations and get adjusted to them and have improved their position.

Keywords: *Micro, Rural, Women, Entrepreneurship, Opportunities, Challenges etc.*

Introduction

Entrepreneurship refers to the act of setting up a new business or reviving an existing business so as to take advantages from new opportunities. Thus, entrepreneurs shape the economy by creating new wealth and new jobs and by inventing new products and services. Women entrepreneurs may be defined as a women or a group of women who initiate, organize and run a business enterprise. Women owned business are highly increasing.

"You can tell condition of a nation by looking at the status of its women." - Jawaharlal Nehru

Men & women both are two wheels of society and contribution of both is very essential for building healthy nation. There are around seven lakh villages in India and more than 70% of our population lives in villages. In rural sector 56% of the male and 33% of the female were in the labour force. About 66% of the female population in the rural sector is idle & unutilized. Even after 56 years of the independence women in India are struggling for entrepreneurial freedom.

They have to face various socio-economic problems. But now the Scenario is changing fast with modernization, urbanization and development of education and business. Thus the opportunities of employment for women have increased drastically.

Women Entrepreneurship in India

Table shows women's entrepreneurship in various states out of total no. of units registered in India. Maximum units have registered in Tamilnadu (9618), followed by Uttar Pradesh state (7980), whereas minimum were in Madhya Pradesh state (2967). Similarly, maximum % of women entrepreneurship was in Uttar Pradesh (39.84%), followed by Gujarat state (39.72%) and average no. of women entrepreneurs were 19,971 and average % of women entrepreneurship out of total entrepreneurship was 32.82 % in India. The study further shows that

the women entrepreneurship position in selected states of India is above 30 per cent on an average, but in Bihar it is only 15.04 per cent. On basis of above data we can conclude that more the % of women's entrepreneurship leads more economic development of the state.

S.No	States	Number of Units Registered	Number of Women Entrepreneurs	Percentage
1	Tamil Nadu	9618	2930	30.36
2	Uttar Pradesh	7980	3180	39.84
3	Kerala	5487	2135	38.91
4	Punjab	4791	1618	33.77
5	Maharashtra	4339	1394	32.12
6	Gujarat	3872	1538	39.72
7	Karnataka	3822	1026	26.84
8	Madhya Pradesh	2967	0842	28.38
9	Bihar	7344	1123	15.04
10	Other States	14576	4185	28.71
11	**Total**	**64,796**	**19,971**	**32.82**

Source: Secondary data

Responsible Variables for Successful Women Entrepreneurship

1	Own Credit Idea	**5**	Greater Freedom and Support
2	Economic Independence	**6**	Support by Men in Society
3	Confidence	**7**	Persistence and Quality
4	Status in Society	**8**	Achievement of Excellence.

Opportunities for Rural Women Entrepreneurs

1. **Training of Rural Youth for Self Employment (TRYSEM) :** TRYSEM gives training to the youth / young unemployed men & women for Self-employment. The trainees get a stipend of Rs. 150 per month during training period. In this programme 40 % of total seats are reserved for women. About 20 lakh women have been trained form its inception till now. It is supporting scheme for women entrepreneurship.
2. **Development of Women & Children in Rural Areas (DWCRA):** DWCRA is the Rural Development Department's scheme to support women's income generation activities through a group of 15 to 20 women each. The Government of India has launched this women & children development programme in 1982. The main objective of this programme is to strengthen the economy of rural women by giving them loan and economic assistance to develop their skills, efficiency and abilities to meet their liabilities effectively.
3. **NORAD Programme:** NORAD (Norwegian Agency for International Development) was established in 1982-83 to help the educated & uneducated women financially in non-traditional areas of business like electronics, computer programming,

manufacturing of watches, printing, readymade garments. Near about one lakh women were benefited by NORAD Programme. In 2006 – 07 (up to 31st Dec. 2006), it has an expenditure of Rs. 672.80 lakhs and the beneficiary women are 14615.

4. **STEP: Support to Training and Employment Programme:** STEP was started in 1987 with the objective to provide training to rural women for increasing their production capacity and income generation. In this programme, they give training in the areas of traditional business like: agriculture, milk, fisheries, handlooms, khadi development.

5. **Rashtriya Mahila Kosh (RMK):** RMK established to meet the needs of poor women by giving them the loans. RMK is also organizing training, apprenticeship and orientation programmes for trainers under the Indian Mahila Block Societies (IMPS). The objectives of RMK are that credit becomes a widely known and used facility for enhancement of the daily income of poor women. The experience of RMK is that the women would have been able to double or triple their daily income with the credit support of Rs. 2500 to Rs. 5000

6. **Indira Mahila Yojna (IMY):** IMY was launched in August, 1995. Its main objective is to give a forward thrust to education, awareness, income generation capacity and empowerment to women. The platform for the forward thrust is to be done through self – help groups at the grassroots level.

7. **SEWA – Self Employed Women's Association:** SEWA based in Ahmadabad is a brain child of Ela Bhatt. SEWA guides women in rural areas in the use of their own resources to the maximum both physical and financial. SEWA has helped many women from the rural areas of Gujarat and Rajasthan in marketing their land embroidered Tie & Dye materials both in India and abroad. A commendable job of SEWA is where the rural women entrepreneurs are sent to countries like Australia, Europe and United States for promoting their products.

8. **Self – Help Groups (SHG):** SHG's plays a vital role in rural development for rural women. Each member of the group contributes money & kept in bank in the name of the Group. Group can obtain loan from the bank. The rules & regulation are developed by the group of members. The SHGs are linked with the banks for the external credit inflow. Self Help Group associate with micro credit is the element for the development of any country.

Challenges Faced by Rural Women Entrepreneurs

The main challenges faced by rural women in business are educational & work background. They have to balance their time between work & family. Some of the challenges faced by rural entrepreneurs are as follows:-

1. **Growth of Male culture:** The greatest deterrent to rural women entrepreneurs is that they are women. India is a kind of patriarchal male dominant society. Male members think it is a big risk financing the ventures run by women.

2. **Illiteracy:** The literacy rate of women in India is found at low level compared to male population. The rural women are ignorant of new technology or unskilled. They are often unable to do research & gain the necessary training. According to the economist, women are treated as second-class citizens which keep them in a "pervasive cycle of poverty". The uneducated ruralwomen do not have the knowledge of measurement and basic accounting.

3. **Low Ability to Bear Risk:** Women in India lives protected life. She is taught todepend on male members from birth. She is not allowed to take any type of risk even if she is willing to take and has ability to bear. Economically they are not self-dependent.

4. **Lack of Infrastructure and Rampant Corruption:** These are also the other problems for the rural women entrepreneurs. They have to depend on office staffs and intermediaries to get the things done, especially the marketing and sales side of business. Here is the more probability for business fallacies like the intermediaries take major part of the surplus or profit.

5. **Lack of Finance:** The financial institutions discourage women entrepreneurs on the belief that they can at any time leave their business. Therefore, they are forced to rely on their own savings, loan from their relatives and family friends.

Scope of Micro-Enterprise Development

Scope of micro-enterprise depends on number of factors from landholdings, subsidiary occupations, agro climatic conditions, political and socio-personal characteristics and family member of the rural women. It also differs from place to place. Generally, micro-enterprise development is classified into three major heads like,

1.1. Agriculture and allied agriculture activities, like cultivating to organic vegetables, food grains, seasonal fruits, flowers, oil seeds and seed production besides mushroom growing and bee-keeping. Some more areas can be like dehydration of fruits and vegetables, bottling or canning of pickles, chutneys, jams, squashes, dairy and other products that are ready or semi ready to eat.

1.2. Livestock management activities, like dairy farming, poultry farm, domestic animals feed production and production of dung cake using by animal waste can be an important area in which women can utilize both of their technical skills and raw materials from the farm and livestock to earn substantial income and small scale agro-processing units.

1.3. Household based operations, like knitting, stitching, weaving, embroidery, bakery flour milling, petty shops, food preparation and preservation etc.

Role of Micro-Entrepreneurship in Rural Area

Empowering women especially in rural area is a great challenge and micro enterprises in rural area can help to meet these all challenges. The role of micro-entrepreneurship is not only enhance national productivity, generate employment but also help to develop economic independence, personal and social capabilities among rural women like

- Economic

- empowerment
- Improves standard of living
- Self-confidence
- Increases social interaction
- Engagement in political activities
- Increases participation in different meetings and seminars
- Enhance awareness
- Sense of achievement
- Improves the leadership qualities
- Improves decision making capacity in family and community
- Expertness in problem solving matters related to women and community
- Participation in seminars and conferences

Finally we can say with confidence that economic empowerment of rural women through micro entrepreneurship led to the empowerment of women in so many things such as socio-economics opportunity, property rights, political participation and representation, social equality, personal right, market development, family development, community development, societal development, state development and at last development of the nation.

Impediments of Women's Entrepreneurship

1. Access to Finance
2. Access to Market
3. Access to Training
4. Access to Networks
5. Access to Policymakers
6. Access to Technology
7. Competition Challenges
8. Educational Challenges
9. Managerial Challenges
10. Lack of Mobility
11. Traditional Approach of the society
12. Social Challenges

Suggestions to Overcome on Impediments of Women entrepreneurship

1. Better Educational Facilities should provide to women entrepreneurs.
2. Training Facilities about Management skills should be extend by Govt. to women entrepreneurs.
3. Easy Credit facilities on minimum on r/i should provide by Govt. to women entrepreneurs.
4. Consulting Unit for women entrepreneurs should set up by Govt.
5. Guidance cell should set up by Govt. for women entrepreneurs.
6. Society should change its attitude from traditional to modern to give inspiration for women entrepreneurs.
7. Management Institutes for women about Management Skills Development for women entrepreneurship should set up Government.

8. Men should give support to women for women entrepreneurship.

Conclusion

From the above analysis researchers come to conclude that there are various challenges for women's entrepreneurship in rural India like lack of credit, training, network, marketing skills, lack of support from society, traditional approach of society etc. But at same there are various opportunities for women's entrepreneurship like Development of Women & Children in Rural Areas (DWCRA), Training of Rural Youth for Self Employment (TRYSEM), STEP – Support to Training and Employment Programme, Rashtriya Mahila Kosh (RMK) and SHGs etc.

Women's entrepreneurship leads economic development. In India development of women's entrepreneurship is in developing nature, therefore economic development of India is less than developed nations. To develop women's entrepreneurship in rural India, Govt. of India should prepare efficient policy and implement it.

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A Study on utilization of Library Services \by Students

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Abstract

The role of the Academic Library promotes students to engage in learning and it is a hard to imagine without a library in a college . The findings reveal that most of the students visited the library to study course books , see reference materials, ,reading magazine and journals . The majority of the students indicated that the library provides effective services and also satisfied with the physical facilities.

Keywords: *Academic libraries, satisfaction, services.*

Introduction

The College library has a prominent role to play in supporting higher education to fulfill the objectives of its institution. Students in higher education are to be provided with the facilities necessary for mastering the subject matter, techniques, skills, habits of thoughts and methods of work in their chosen field. Learning in Classroom alone will not provide all kinds of the opportunities needed for attaining these complex educational objectives. It is here that libraries are to help students. The college library is a collection of sources, services and the building in which it is housed. It provides access to various resources in order to support teaching, learning and research activities. According to Krolak "libraries assist in finding ,using and interpreting appropriate information that opens up opportunities for life long learning, creative imagination, individual research critical thinking and ultimately, empowerment in an increasingly complex world". This equitable access to information is essential to enable educated and informed citizens to participate in a democratic global community. Library services are needed to enable an individual to develop full potentials and extend the horizons of perception, interests and skills.

Objectives of the study

The main objective of this study is to examine whether the students are knowing library resources and services provided by the library.

1. To examine how much familiar with the resources and services.
2. To know the purposes for visiting to the college library
3. To identify frequency of visiting to the college library
4. To suggest measures for improvement of the use of the Library Resources and Services.

Methodology

In this study ,the questionnaire method was used to collect the data from the students. The random sampling technique was used by distributing an equal number of questionnaire copies among the subjects of the study. Out of a sample of 100 students, 92 responded to the

survey . The response rate was 92%. The sample of students belong to Sri Sarada College for Women, Tirunelveli.

Analysis of the study

The data collected through questionnaire has been analysed and presented in the form of tables.Random sampling technique was applied to be chosen for the population of collection of data with an objecti of taking samples from student users.

Table 1: Frequency of visit to the library

S.No	Visit to the library	Number	Per centage
1	Daily	42	45.6
2	Weekly	23	25
3	Fortnightly	25	27.2
4	Not specific	2	2.2
	Total	92	

Table. 1 shows the frequency of the respondents visit to the library.42 (45.6%) of the visitors who visited the library daily,2 (2.2%) not specific,23 (25%) visited once in weekly,25 (27.2%) visited the library fortnightly.

Table 2: Time Spent in the Library

S.No	Time Spent	Number	Per centage
1	About ½ hr	47	51.1
2	About 1 hr	17	18.5
3	Needbased	20	21.7
4	10 minutes	8	8.7
	Total	92	

Table 2 shows the respondents spent time in the library. 17 (18.5%) students spent time for an hour,47 (51.1%) time spent in ½ hr,20 (21.7%) students Spent the time in need based, 8 (8.7%) students spent time only 10 minutes.

Table 3: Purpose of Visit to the Library

S. No	Purpose Of Visit to the library	Number	Per centage
1	Book Lending	35	38.1
2	Reading Newspaper	45	48.9
3	Reading Journals	6	6.5
4	Xerox	6	6.5
	Total	92	

Table 3 shows that the respondents visit the library for various purposes and few respondents coming to the library are 35 (38.1%) for book lending, 45 (48.9%) students come to the library for newspaper reading,6 (6.5%) students for reading journals,6 (6.5%) for taking Photocopies.

Table 4: Materials referred in the library

S.No	Materials referred	Number	Percentage
1	Course Books	30	32.6
2	Newspaper	20	21.7
3	Magazine	12	13.1
4	Reference books	13	14.1
5	Internet	17	18.5
	Total	92	

Table 4 shows that the respondents for refer the course books are 30 (32.6%),20 (21.7%) referred the Newspaper,12 (13.1%) referred the magazine, 13 (14.1%) for reference books,17(18.5%) students to use internet.

Findings & Conclusion

Guides and notes prepared by teachers are the only repository of information for many students. If use of these are prohibited ,learners will cultivate the habit of seeking necessary information from print and electronic sources.

The students must be aware of the resources available in the institutional libraries and different kinds of resources available in the library.

Conclusion

The students are satisfied regarding the library service. The college could provide extra syste,more time for use in the library. This will help the students to get necessary information. The study concludes stating a positive response towards the usage of Library at Sarada college , Tirunelveli.

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