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ಬೀದರ ಜಿಲ್ಲೆಯ ಸಾಂಸ್ಕೃತಿಕ ಪರಂಪರೆ

ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ
ಮುಖ್ಯಸ್ಥರು, ಕನ್ನಡ ಸಾಹಿತ್ಯ ವಿಭಾಗ,
ಕರ್ನಾಟಕ ಕಲಾ ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ

ಬೀದರ ಜಿಲ್ಲೆಯು ವಿಶಾಲ ಕರ್ನಾಟಕ ರಾಜ್ಯದ 30 ಜಿಲ್ಲೆಗಳಲ್ಲಿ ಒಂದು. ಇದು ಕರ್ನಾಟಕದ ಉತ್ತರ ದಿಕ್ಕಿನಲ್ಲಿದೆ. ಈ ಜಿಲ್ಲೆಯು ಕಲ್ಯಾಣ ಕರ್ನಾಟಕದ ಪ್ರಮುಖ ಜಿಲ್ಲೆ. ಬೀದರ ಜಿಲ್ಲೆಯು ಪೂರ್ವ ಹಾಗೂ ಉತ್ತರ ದಿಕ್ಕಿಗೆ ಆಂಧ್ರಪ್ರದೇಶ ಹಾಗೂ ಪಶ್ಚಿಮ ದಿಕ್ಕಿನಲ್ಲಿ ಮಹಾರಾಷ್ಟ್ರಗಳೊಂದಿಗೆ ತನ್ನ ಭೌಗೋಳಿಕ ಗಡಿಯನ್ನು ಹಂಚಿಕೊಂಡಿದೆ. ಈ ಜಿಲ್ಲೆಯ ವಿಭಾಗ ಕಚೇರಿಯು ಕಲಬುರ್ಗಿಯಲ್ಲಿದೆ. ಕಂದಾಯ ಇಲಾಖೆಯು ಗುಲಬರ್ಗಾ ವಿಭಾಗದಲ್ಲಿದೆ. ಬೀದರ ಜಿಲ್ಲೆಯಲ್ಲಿ 5 ತಾಲೂಕುಗಳಿವೆ. ಅವುಗಳೆಂದರೆ ಔರಾದ, ಬಸವಕಲ್ಯಾಣ, ಭಾಲ್ಕಿ, ಬೀದರ ಹಾಗೂ ಹುಮನಾಬಾದ. ಬೀದರ ಜಿಲ್ಲೆಯಲ್ಲಿ 5 ತಾಲ್ಲೂಕುಗಳಿದ್ದು 30 ಹೋಬಳಿಗಳು, 302 ಗ್ರಾಮಲೆಕ್ಕಿಗರ ವೃತ್ತಗಳು ಹಾಗೂ 175 ಗ್ರಾಮ ಪಂಚಾಯಿತಿಗಳಿವೆ. ಐದು ತಾಲ್ಲೂಕಗಳ 634 ಹಳ್ಳಿಗಳು ಈ ಜಿಲ್ಲೆಯಲ್ಲಿವೆ. ವ್ಯಾಪ್ತಿಯಲ್ಲಿ ಚಿಕ್ಕ ಜಿಲ್ಲೆಯಾದರೂ ಕರ್ನಾಟಕದ ಮುಕುಟಪ್ರಾಯವಾಗಿದೆ. ಈ ಜಿಲ್ಲೆಯ ಸಾಂಸ್ಕೃತಿಕ ಪರಿಸರದ ವ್ಯಾಪ್ತಿ ಜಿಲ್ಲೆಯ ಆಡಳಿತ ವ್ಯಾಪ್ತಿಗಿಂತಲೂ ಬಹುದೊಡ್ಡದಾಗಿದೆ. ಇದು ಶರಣರ ಸಂತರ ನೆಲೆವೀಡು. ಬಿದರಿ ಕಲೆಯ ತವರು ಮನೆ. ಜಾನಪದ ಸಾಹಿತ್ಯ, ಕಲೆಗಳ ಆಗರ. ಸಾಹಿತಿಗಳು, ಕವಿಗಳು, ಸಂಗೀತಗಾರರು, ಸಮಾಜ ಸೇವಕರು, ರಾಜಕಾರಣಿಗಳು, ಶಿಕ್ಷಣ ತಜ್ಞರು, ಅನುಭಾವಿಗಳು, ತತ್ವಪದಕಾರರು ಮುಂತಾಗಿ ಈ ಜಿಲ್ಲೆಯು ನಾಡಿಗೆ ನೀಡಿರುವ ಕೊಡುಗೆ ಅಪಾರವಾಗಿದೆ.

ಐತಿಹಾಸಿಕವಾಗಿ ಈ ಜಿಲ್ಲೆಯು ಸಾಮ್ರಾಟ ಮೌರ್ಯ, ಶಾತವಾಹನ, ಕದಂಬ, ವಾಕಾಟಕರ, ಬಾದಾಮಿ ಚಾಲುಕ್ಯರ, ರಾಷ್ಟ್ರಕೂಟರ, ಕಲ್ಯಾಣಿ ಚಾಲುಕ್ಯ, ಸೇವಣರ, ಕಾಕತೀಯರು ತೊಗಲಖ್ ಖಿಲ್ಜಿ, ಬಹಮನಿ, ಬರೀದ ಶಾಹಿ, ಮೊಗಲರು ಹಾಗೂ ನಿಜಾಮರು ಆಳಿ ಬಾಳಿದ ಹೆಗ್ಗುರುತುಗಳನ್ನು ಹೊಂದಿದೆ.

ಐತಿಹ್ಯಗಳ ಪ್ರಕಾರ ಬೀದರ ಮಹಾಭಾರತ ಕಾಲದ ವಿದುರನಗರವಾಗಿತ್ತೆಂದು ಮತ್ತು ನಳ ಹಾಗೂ ದಮಯಂತಿಯರು ಇಲ್ಲಿಯೇ ಪರಸ್ಪರ ಭೇಟಿಯಾಗುತಿದ್ದರೆಂದು ತಿಳಿದುಬರುತ್ತದೆ. ಈ ಪ್ರದೇಶವು ರಾಜಾಭೀಮಸೇನನ ರಾಜಧಾನಿಯಾಗಿತ್ತೆಂದೂ ಹೇಳಲಾಗುತ್ತದೆ. ಡಾ.ಷಡಕ್ಷರಯ್ಯ ಅವರ ಸಂಶೋಧನೆಯಿಂದ ಶಿಲಾಯುಗದಿಂದಲೂ ಈ ಜಿಲ್ಲೆಯಲ್ಲಿ ಹರಿಯುವ ಕಾರಂಜ ಹಾಗೂ ಮಾಂಜರಾ ನದಿಗಳ ದಡದ ಮೇಲೆ ಜನವಸತಿ ಇದ್ದುದು ತಿಳಿದುಬರುತ್ತದೆ. ಪುರಾಣಗಳಲ್ಲಿ ವ್ಯಕ್ತವಾದ ಜನಪದ ಹೆಸರು ಋಷಿಕಾ ಅಥವಾ ಅಷಿಕಾ ಬೀದರ ಪ್ರದೇಶವೇ ಆಗಿರಬೇಕೆಂದು ಪಂಡಿತರ ಊಹೆ. ಈ ನೆಲವನ್ನಾಳಿದ ಕಲ್ಯಾಣ ಚಾಲುಕ್ಯ ಅರಸರು ತಮ್ಮನ್ನು ಕುಂತಳೇಶ್ವರರೆಂದು ಕರೆದುಕೊಂಡಿದ್ದರಿಂದ ಪುರಾಣಗಳಲ್ಲಿ ಉಲ್ಲೇಖಿಸಿಲ್ಪಟ್ಟ ಕುಂತಳದೇಶ ಇದೇ ಆಗಿರಬಹುದೆಂದು ತಿಳಿದುಬರುತ್ತದೆ.

ಇತ್ತೀಚೆಗೆ ಜಿಲ್ಲೆಯ ಬೀದರ ನಗರವು ಭಾರತದ 22ನೆಯ ಸ್ವಚ್ಛನಗರ ಮತ್ತು ಕರ್ನಾಟಕ ರಾಜ್ಯದ 5ನೆಯ ಸ್ವಚ್ಛನಗರವೆಂಬ ಸ್ಥಾನಪಡೆದುಕೊಂಡು ಹೆಗ್ಗಳಿಕೆಗೆ ಪಾತ್ರವಾಗಿದೆ. ಜೊತೆಗೆ ನಗರದಲ್ಲಿರುವ ವಾಯುಪಡೆ ತರಬೇತಿ ಕೇಂದ್ರವು ಆಗಸದಲ್ಲಿ ತ್ರಿವರ್ಣ ಚಿಮ್ಮುಸುತ್ತಾ ವಿವಿಧ ಕಸರತ್ತು ಪ್ರದರ್ಶಿಸುವ ಸೂರ್ಯಕಿರಣ ವಿಮಾನದಿಂದ ಪ್ರಸಿದ್ಧವಾಗಿದೆ.

ಭೌಗೋಳಿಕ ಹಿನ್ನೆಲೆ: ಬೀದರ ಜಿಲ್ಲೆಯ ಇಂದಿನ ಒಳಹರವಿನ ಒಟ್ಟು ಭೂಮಿಯು 5448 ಚದರ ಕಿಲೋಮೀಟರ. ಉತ್ತರ ಅಕ್ಷಾಂಶ 17^0-35^1 ರಿಂದ 18^0-25^1 ಮತ್ತು ಪೂರ್ವ ರೇಖಾಂಶ 26^0-42^1 ರಿಂದ 22^0-29^1 ಜಿಲ್ಲೆಯ ಕ್ಷೇತ್ರ ವ್ಯಾಪಿಸಿದ್ದು ಇದರ ಉದ್ದಳತೆ ಪೂರ್ವದಿಂದ ಪಶ್ಚಿಮಕ್ಕೆ 93.4 ಕಿ.ಮೀ. ಮತ್ತು

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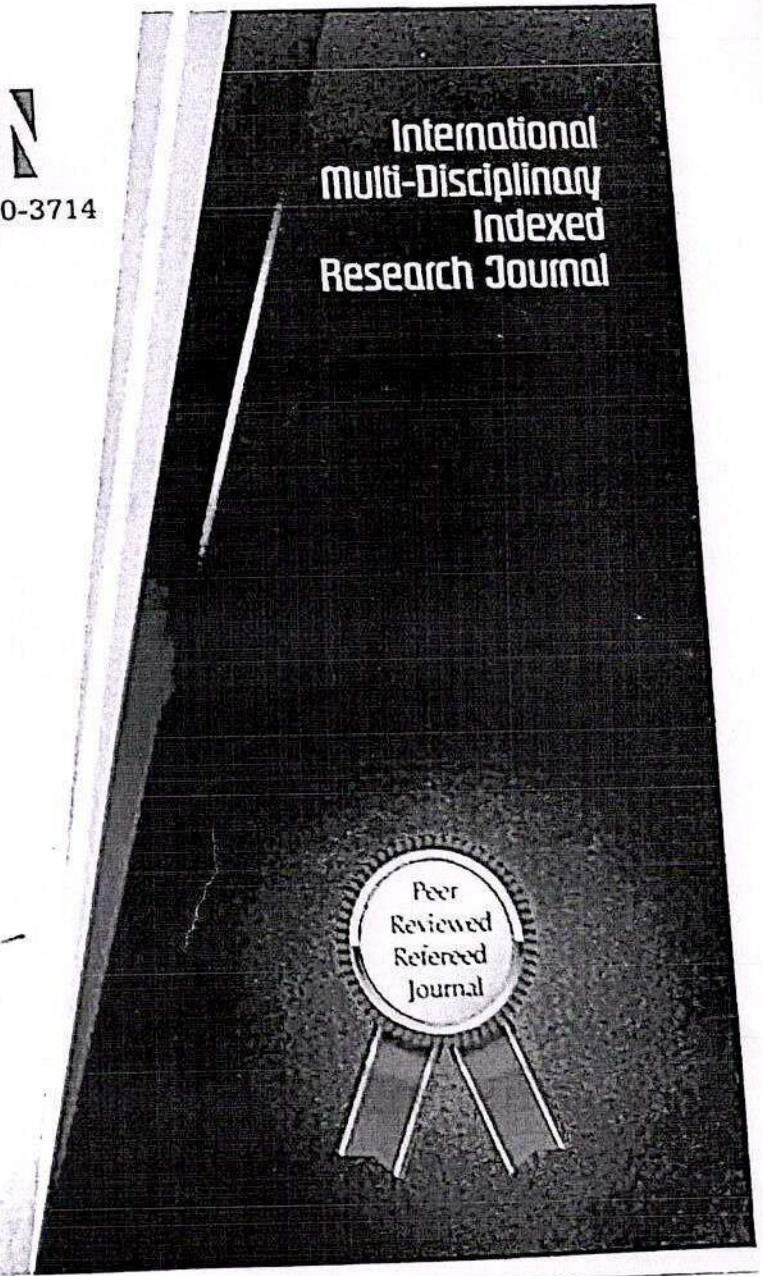
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BUSINESS AND CRISIS MANAGEMENT

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ABSTRACT

The goal of the analysis is usually to empirically analyze the effect this- Positive Many Meanings- info makes on crisis management and on activities conducted by crisis managers. After a preliminary time of ignorance of the phenomenon of crises which are encountered by companies. The study results suggest that adequate methodology allows organizations to handle crisis and much better stay away from the consequences of its, and that quality of crisis managers, staff that is expert, informing procedure, external and internal correspondence, timely sharing as well as info accuracy in crisis, and also abilities and understanding of managers and staff members to make use of info have average to increased impact on the quality of crisis management. The report is designed to share info on the different reasons of crisis, strategies in crisis management, as well as the connection in between crisis management and business.

I. INTRODUCTION

Crisis could be identified in different ways but the most typical perception regarding the crisis is a scenario completely different from regular business environment and which has to be resolved to stay away from future unseen issues leading to losses to organization. Loss is usually in terms of revenue, market share or maybe brand image in the market. Crises for a business are able to take most forms. If they're accidental, financial, legal or perhaps otherwise, there's something that all affected businesses have in common; a crucial need for effective managerial as well as operational effect and successful interaction with both internal and external stakeholders.

Crisis Management Approach:

Crisis management strategy depends upon the crisis, which must be resolved on priority. A business device is going to face a crisis caused by outside business environment or maybe the self inflicted crisis out of inner business environment. Usually the variables, which could be controlled, changed or even modified by a business system, are actually viewed as inner environment, as well as the factors, which demands adaptation of situation by business unit, are actually considered as outside factors. Usually business choices are able to affect inner environment but at exactly the same time, outside business environment might enforce several strategic decisions on business model.

Crisis management is often as routine as the internal monetary controls which stop embezzlement. Crisis management calls for an analytical approach to explain a tradeoff between expense of staying away from the danger as well as the price danger would inflict. In crisis management, contingency plans are usually prepared not in order to stay away from crisis but to confirm natural working conditions as fast as you possibly can.

II. RELATION BETWEEN BUSINESS ENVIRONMENT AND CRISIS MANAGEMENT

Broadly, business environment is actually viewed as a mix of internal factors and outside factors, non-controllable and controllable elements. Inner environment is nothing though the materials in which organization has immediate management along with elements may be handled very easily. The inner environment consists of technology, human resource, processes and product, energy sources of finance, assets, organization system etc. Outside environment consists of monetary and fiscal policies of Policies, Political interference, and Government, State of economy and buying power of customers, prospective market as well as functionality of industry, worldwide competitive forces as well as kinds of tournaments, Political and legal framework, product life cycles as well as customer requires etc. A figure gives a generic view regarding interdependence in addition to business environment of the environments.

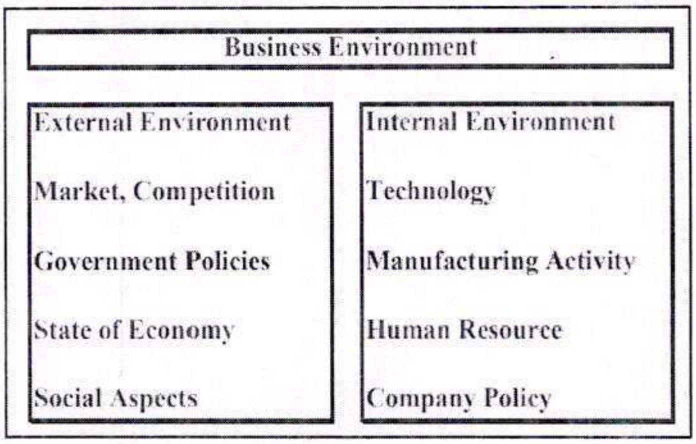
Business Environment
External Environment
Market, Competition
Government Policies
State of Economy
Social Aspects
Internal Environment
Technology
Manufacturing Activity
Human Resource
Company Policy

Figure 1 Business Environment

There are different classifications of crisis depend on the different factors of business environment. These are: -

- Crises related to External Business Environment:

A crisis caused by outside business environment is actually uncertain. The reaction is really quickly and this is able to build a serious very long lasting effect on business. It might develop a threatening situation as well as a question mark regarding the survival of business enterprise. Usually there are extremely few as well as inadequate signals about the crisis and individuals fail to understand these signal. Failure to get signals as well as reply induce serious crisis for the organization.

  - ➢ Crises related to Market
  - ➢ Crises related Government Policies
  - ➢ Crises related to state of Economy
  - ➢ Crises related to social aspects of business

- Crises related to Internal Business Environment

Below are actually numerous crises experienced by business related to change in inner environment. Bodily business environment is a mix of different energy employed by organization for generation of components.

- Crises Related to product development, Research and Development
- Crises Related to Technology
- Crises related to Manufacturing Activity
- Crises related to Human Resource
- Crises related Company Policy

III. CRISIS PLANNING PROCESS FOR BUSINESSES

Being a necessity, companies are actually viewing crisis planning with increased interest. But realizing the benefits of crisis planning differs from developing highly effective plans, especially when management might need to promote the demand for crisis planning to organizational countries which in the past looked upon the hassle as a misuse of cash and time. Trying to plan for all of the potential crises that may conceivably strike a business may be difficult, tiresome, and time-consuming. As a result, even organizations that decide to plan for crises might find the plans of theirs superficial, overly simplistic, or perhaps inadequate when crises happen and plans are set to the test. To efficiently tackle adversity then, management mustn't merely have confidence in the importance of crisis planning, they have to recognize the parts of good crisis planning and implement those parts in the businesses of theirs. Discussed here's a five step procedure that management is able to follow creating adequately detailed, thorough crisis programs. By adhering to the procedure of developing a staff, analyzing vulnerabilities, creating methods, working the plans, and assessing performance, supervisors are able to reduce their discomfort concerning crisis planning and improve the probability that the organizations of theirs will survive, or perhaps maybe even gain from, times of crisis.

Step one: Form A Crisis Team

Look outside of the financial statements of any profitable business and you'll probably see a cohesive, highly effective management staff. Just like the development of a good management staff is crucial to the monetary results of a company, the option of the people who'll make up the crisis staff is crucial not just too effectively managing crises; it might be a choice in which business survival rests. Feldman and Gerber (2002) suggest that the crisis staff be made up of the firm's good managers, including a senior accounting or maybe financial officer, a senior human resources representative, a senior manufacturing or maybe operations representative, a senior info systems or maybe engineering officer, a senior insurance or maybe risk management representative, internal as well as external public relations/media associations representatives, and internal and external legal counsel.

Step two: Analyze Vulnerabilities

For many, critically assessing all of the crises which likely may strike a business isn't just disheartening, it could be absolutely overwhelming. Majority of managers could quickly list the 3 or maybe 4 crises they probably face- fire; floods; extended power outages; hurricanes or any other natural disasters. Not many, excluding those managers in businesses with risk management departments, can comprehensively checklist and rank all likely vulnerabilities. Furthermore, the episodes on September eleven, 2001 generated a brand new set of worries previously believed very improbable as to prompt instant exclusion from account. In reality, the events of September eleven created a completely brand new meaning to the term worst case scenario and might perhaps be the main impetus to improved management interest on crisis planning.

Table 1 - Crisis Classification Framework

Category	Impact	Crisis Events
Operational	Short-term or long-term disruption of organization's daily activities	Loss of records permanently due to fire Computer system breakdown Loss of records permanently due to computer system breakdown Computer system invaded by hacker Major industrial accident Major product/service malfunction Death of key executive Breakdown of a major piece of production/service equipment
Public Image	Negative public perception	Boycott by consumers or the public Product sabotage Negative media coverage
Fraud	Loss of stakeholder confidence, reduced employee morale and productivity	Theft or disappearance of records Embezzlement by employee(s) Corruption by management Corporate espionage Theft of company property Employee violence in the workplace Asset misappropriation

Natural Disaster	Temporary or permanent disruption of daily activities, destruction of facilities or equipment, loss of life	Flood Tornado Hurricane Earthquake
Legal	Negative public perception, loss of stakeholder confidence, bankruptcy due to cost of legal representation or payment of fines and penalties	Consumer lawsuits Employee lawsuit Government investigation Product recall
Terrorism	Temporary or permanent disruption of daily activities, long-term consequences in employee morale and confidence, destruction of resources, loss of life	Bomb Kidnapping Massacre Chemical or biological attack

Step three: Create Strategies

Equipped with a prioritized list of prospective crises, the crisis staff is able to set to focus on developing extensive techniques to stay away from or even mitigate crisis events. Just like any strategic initiative, the job of the crisis staff isn't to develop as well as orchestrate minutely detailed plans; the focus of its instead is establishing big objectives as well as expectations for crisis survival coupled with adequately detailed directives to be applied at purposeful amounts. For instance, it's likely counterproductive for a crisis staff to produce comprehensive disaster recovery plans of the event of a significant computer system outage. Rather, the crisis staff must concentrate on goals and goals for recovery like determining the maximum acceptable loss of information, mandating a frequency for system backups, detailing expectations about the time frame for system recovery, prioritizing the mission critical methods for restart, and giving path about the usage of outside catastrophe healing installations. The devices operations team then would derive as well as implement the comprehensive catastrophe healing methods to complete the crisis team's objectives and goals.

Step four: Work The Plans

In concept, the preparation entailed in developing a highly effective crisis staff, creating extensive crisis planning methods, applying the techniques in detail that is adequate at purposeful amounts, and instruction and creating staff members to function efficiently and effectively in crisis situations must make certain that any crisis might be mitigated or perhaps stayed away from. In truth, not many blueprints account for those possible variation or maybe complexity for a certain situation. Only seldom does a scheme as completely fit the situation for which it was meant that no modifications are essential and execution is actually flawless. Rather, businesses coping with crises often are confronted with the want to deviate from the plans of theirs to be able to cope with unforeseeable complexities in the crisis situation.

Step five: Assess Performance

Sometimes, including the best laid plans fail despite all attempts to the contrary. Whether or not the execution of a crisis strategy was a dismal failure or maybe a fantastic accomplishment, lessons could be learned from examining real overall performance from the expectations of the program. If overall performance fell quite short, it's essential to question why and find out the way to treat the shortcomings in the future. If overall performance exceeded all expectations, perhaps turning a possible disaster into an advantageous scenario, analyzing the good results is able to offer essential insights that could be transferred to other scenarios. Innovations created during crisis scenarios might actually be put on to regular operating conditions to produce a long term strategic advantage. No matter the end result, analysis of past performance typically offers considerable lessons for the future.

IV. CONCLUSION

Crisis is actually an overt display of dissatisfaction with resources, personalities, values, opinions, ideas, and the rules of a company. It's an uncommon atmosphere which hinders the attainment of specific desirable or maybe objectives that are attainable . Thus, it's an enigmatic and cancerous issue. Running a business groups it's a common or rampant very element. The common and persistent element of crisis situations through the years has impacted every facet as well as ramifications of groups as well as the society. Hence crisis appears to be a "double advantage sword" if this happens, it hurts both the organization as well as the workers of its on one side and also the government as well as environment on the additional side. Running a business organizations, the regular resurgence of crisis is possibly because the strategies or maybe the resolutions of theirs aren't encompassing or perhaps that the issues have taken on complex and new dimensions in need of suitable investigation as well as answers. Thus, it's vital that businesses have well informed personnel who could take part in the crisis management plan. Last but not least, every business must have a comprehensive crisis management system to ensure continuous and effective performance.

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ಸಂಸ್ಕೃತಿ ಹಾಗೂ ತಾಯ್ತನದ ಗ್ರಹಿಕೆಗಳು

ಸುನಿತಾ ಕೂಡ್ಲಿಕರ
ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕರು
ಕರ್ನಾಟಕ ಕಾಲೇಜು ಸ್ನಾತಕೋತ್ತರ ಕನ್ನಡ ಅಧ್ಯಯನ ಮತ್ತು ಸಂಶೋಧನ ಕೇಂದ್ರ ಬೀದರ

ನಮ್ಮ ಸಮಾಜ ರಚನೆಗೊಂಡಿರುವುದು ನಮ್ಮಲ್ಲಿನ ಸಾಮಾಜಿಕ ಸಂಬಂಧಗಳಿಂದ ಇಲ್ಲಿ ತಂದೆ–ತಾಯಿ, ಅಕ್ಕ–ತಂಗಿ, ಅಣ್ಣ–ತಮ್ಮ, ಅಜ್ಜ–ಅಜ್ಜಿ, ಸೋದರಮಾವ ಸೋದರತ್ತೆ ಹೀಗೆ ಹಲವಾರು ಕೌಟುಂಬಿಕ ಸಂಬಂಧಗಳಿಂದ ಮಾನವನು ಬಂಧಿಸಲ್ಪಟ್ಟಿದ್ದಾನೆ. ಇದರಲ್ಲಿ ಗಂಡು ಮತ್ತು ಹೆಣ್ಣಿನ ಸಂಬಂಧ ಅತ್ಯಂತ ಪ್ರಮುಖವಾದದ್ದು. ಅದರಲ್ಲಿ ಮುಖ್ಯವಾಗಿ ಗಮನಿಸಬೇಕಾದ ವ್ಯಕ್ತಿ ಎಂದರೆ ಹೆಣ್ಣು ನಮ್ಮ ಸಮಾಜದಲ್ಲಿ ಹೆಣ್ಣಿಗೆ ಶ್ರೇಷ್ಠ ಸ್ಥಾನವಿದ್ದರೂ ಹಲವು ಬಗೆಯ ಶೋಷಣೆಗೆ ಒಳಗಾಗಿದ್ದಾಳೆ. ಹೆಣ್ಣನ್ನು ತಾಯಿಯಾಗಿ ಗೌರವಯುತವಾದ ಸ್ಥಾನದಲ್ಲಿ ನಿಲ್ಲಿಸಿದ್ದಾರೆ ಹೆಣ್ಣು ಕೇವಲ ಹೆಣ್ಣಾಗಿರದೆ ಆಕೆ ತಾಯಿ ಸ್ವರೂಪಿ ಎಂಬ ಗ್ರಹಿಕೆ ನಮ್ಮಲ್ಲಿ ಇದೆ.

ಈ ಕಾರಣಕ್ಕಾಗಿ ತಾಯಿ ಹಾಗೂ ಆಕೆಯಿಂದ ಹರಿದು ಬರುವ ತಾಯ್ತನ ಯಾವ ಸ್ವರೂಪದ್ದು ಈ ಕುರಿತಂತೆ ನಮ್ಮ ಜನಪದ ಗ್ರಹಿಕೆಗಳೇನು? ಎಂಬ ಪ್ರಶ್ನೆಯನ್ನು ಎದುರಿಸುತ್ತ 'ತಾಯ್ತನದ ವಿಭಿನ್ನ ಗ್ರಹಿಕೆಗಳು' ಎಂಬ ಶೀರ್ಷಿಕೆಯ ಅಡಿಯಲ್ಲಿ ಗುರುತಿಸುವುದು ಮುಖ್ಯ ಅಧ್ಯಯನ ತಾಯ್ತನದ ಕುರಿತಾದ ವಿಭಿನ್ನ ಧೋರಣೆಗಳನ್ನು ಗುರುತಿಸಿ ಆ ಮೂಲಕ ಮಹಿಳೆಯ ಬದುಕಿನ ಚೌಕಟ್ಟನ್ನು ಗುರುತಿಸುವುದು. ಆ ಮೂಲಕ ಮಹಿಳಾ ಬದುಕಿನ ವಾಸ್ತವ ಅಂಶಗಳನ್ನು ಅರಿತುಕೊಳ್ಳುವ ಕುತೂಹಲವಿದೆ. ಮಹಿಳೆಯ ಚರಿತ್ರೆ ಒಂದರ್ಥದಲ್ಲಿ ತಾಯಂದಿರ ಚರಿತ್ರೆಯೇ ಆಗಿದೆ. ಕಾರಣ ಮಹಿಳೆ ತಾನು ಬದುಕುವ ವ್ಯಾಪ್ತಿಯಲ್ಲಿ ತನ್ನ ಮಕ್ಕಳ ಪಾಲನೆ–ಪೋಷಣೆಯಿಂದ ಹಾಗೂ ಕುಟುಂಬದಿಂದ ದೂರ ಉಳಿಯದೇ ತನ್ನ ಚರಿತ್ರೆ ನಿರ್ಮಾಣ ಮಾಡಿಕೊಂಡವಳು. ಆದರೆ ದುರದುಷ್ಟವಶಾತ ತಾಯ್ತನವೇ ಆಕೆಯ ಪಾಲಿಗೆ ಬೇಲಿಯಾಯಿತು. ಶತ ಶತಮಾನಗಳಿಂದಲೂ ತಾಯಂದಿರು ಅನುಭವಿಸಿದ ಅನುಭವಗಳು, ಯಾತನೆಗಳು, ಶೋಷಣೆಗಳು, ಸಂಘರ್ಷ ಮತ್ತು ಸವಾಲುಗಳನ್ನು ಎಳೆ ಎಳೆಯಾಗಿ ಬಿಡಿಸಿ ನೋಡಬೇಕಾದ ಅಗತ್ಯವಿದೆ.

ಹಿಂದಿಗಿಂತಲೂ ಇಂದು ಮಹಿಳೆಯ ಕುರಿತಾದ ಅಧ್ಯಯನಗಳು ಬಹು ವ್ಯಾಪಕವಾಗಿ ನಡೆದಿವೆ. ಹಲವಾರು ನೆಲೆಗಳಿಂದ ಆಕೆಯ ಬದುಕನ್ನು ಅಧ್ಯಯನಕ್ಕೆ ಒಳಪಡಿಸಲಾಗುತ್ತಿದೆ. ಇತಿಹಾಸದ್ದುದಕ್ಕೂ ಮಹಿಳೆಯ ಚರಿತ್ರೆ ಗಣ್ಯವಾಗಿಯೇ ಪ್ರತಿಬಿಂಬಿಸಲಾಗಿದೆ. ಅಧ್ಯಯನ ಕೈಗೊಳ್ಳುವ ಸಂದರ್ಭದಲ್ಲಿ ನಮ್ಮ ಸಂಸ್ಕೃತಿಯಲ್ಲಿನ ಎಳೆಗಳನ್ನು, ಸಾಹಿತ್ಯದಲ್ಲಿನ ಗ್ರಹಿಕೆಗಳನ್ನು ಗಮನಿಸಬೇಕಾಗುತ್ತದೆ. ತಾಯ್ತನಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ, ಮಹಿಳೆಯರು ಅನುಭವಿಸಿದ ಅವರ ಅನುಭವಗಳನ್ನು ಸಾಹಿತ್ಯದ ಮೂಲಕ ನೋಡಬೇಕಾಗುತ್ತದೆ. ಅದರಲ್ಲಿಯೂ ಅವರ ಅನುಭವಗಳನ್ನು ಸಾಹಿತ್ಯದ ಮೂಲಕ ನೋಡಬೇಕಾಗುತ್ತದೆ. ಅದರಲ್ಲಿಯೂ ಜನಪದ ಸಾಹಿತ್ಯದ ಮುಖ್ಯ ಪ್ರಕಾರಗಳಾದ ಗೀತೆ, ಕಥನಗೀತೆ, ಗಾದೆಗಳಲ್ಲಿ ನಮ್ಮ ತಾಯಂದಿರ ಬದುಕು ಚಿತ್ರಣಗೊಂಡ ಬಗೆಯನ್ನು ಗಮನಿಸಿದರೆ ಅವಳ ಅಂತರಂಗದ ನೋವು–ನಲಿವುಗಳನ್ನು ಮಾತೃಪ್ರಧಾನ ಸಮಾಜದಿಂದ ಇಂದಿನವರೆಗೆ ತಾಯಿಯ ಬದುಕು. ಆಕೆ ಸವೆಸಿದ ದಾರ, ಇಟ್ಟ ಹೆಜ್ಜೆ ಮತ್ತು ತೊಟ್ಟ ರೂಪಗಳನ್ನು ಈ ಅಧ್ಯಯನದ ಮೂಲಕ ಅರಿತುಕೊಳ್ಳಲು ಪ್ರಯತ್ನಿಸಲಾಗಿದೆ. ಮಹಿಳೆಯ ಬದುಕಿನೊಂದಿಗೆ ಬೆಳೆದು ಬಂದ ಜನಪದ ಸಾಹಿತ್ಯದ ಮೂಲಕ ತಾಯ್ತನವನ್ನು ಗ್ರಹಿಸುವ ಪ್ರಯತ್ನ ಇಲ್ಲಿ ಮಾಡಲಾಗಿದೆ.

ಜನಪದ ತಾಯಂದಿರು ಕಂಡುಕೊಂಡ ಸುಖ–ದುಃಖಗಳನ್ನು ಹಾಡುಗಳ ಮೂಲಕವಾಗಿ ಹೊರಹಾಕಿದ್ದಾರೆ. ಇವು ಮೇಲ್ನೋಟಕ್ಕೆ ಭಾವನಾ ಪ್ರಧಾನವಾಗಿ ಕಂಡರೂ ಅವು ಆಕೆಯ ಬದುಕಿನ ವಾಸ್ತವ ಅಂಶಗಳನ್ನು ತೆಗೆದು ತೋರಿಸುವ ಬೀಗದ ಕೈಗಳಾಗಿದೆ. ಜನಪದ ಸಾಹಿತ್ಯವೆಂದರೆ ಅದು ಹಳ್ಳಿಗರ ಸಾಹಿತ್ಯ ಹೆಣ್ಣು–

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ತಾಯ್ತನದ ಇಂದಿನ ಸ್ಥಿತಿ–ಗತಿ

ಸುನಿತಾ ಕೂಡ್ಲಿಕರ
ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕರು
ಕರ್ನಾಟಕ ಕಾಲೇಜು ಸ್ನಾತಕೋತ್ತರ ಕನ್ನಡ ಅಧ್ಯಯನ
ಮತ್ತು ಸಂಶೋಧನ ಕೇಂದ್ರ ಬೀದರ

ಸಮಾಜ ನಿಂತ ನೀರಲ್ಲ. ಅದು ಚಲಿಸುತ್ತ ಬದಲಾಗುತ್ತ ಸಾಗುತ್ತದೆ ಸಮಾಜದ ಬದಲಾವಣೆ ಎಂದರೆ ಮಾನವನ ಬದುಕಿನ ಬದಲಾವಣೆಯೇ ಆಗಿದೆ. ಆಧುನಿಕ ಕಾಲದಲ್ಲಿ ಬದುಕುತ್ತಿರುವ ಮಾನವ ಹಲವು ಸಮಸ್ಯೆಗಳ ಸುಳಿಯಲ್ಲಿ ಸಿಕ್ಕಿಕೊಂಡಿದ್ದಾರೆ. ಅದರಲ್ಲಿಯು ಪುರುಷಪ್ರಧಾನ ಸಂಸ್ಕೃತಿಯಲ್ಲಿ ಮಹಿಳೆಯನ್ನು ತನ್ನ ಗುಲಾಮಳಾಗಿ ಕಾಣಲಾಗಿದೆ. ಶತಮಾನಗಳಿಂದ ಹಲವು ಬಗೆಯ ಸಮಸ್ಯೆಯ ಎದುರಿಸುತ್ತಿರುವ ಮಹಿಳೆ ಆಧುನಿಕ ಕಾಲದಲ್ಲೂ ಹೊಸ ರೀತಿಯಲ್ಲಿ ಸುಳಿಗಳಲ್ಲಿ ತೊಳಲಾಡುತ್ತಿದ್ದಾಳೆ. ಶಿಕ್ಷಣ, ಉದ್ಯೋಗಗಳು ಆಕೆಯ ಬದುಕನ್ನು ಬದಲಾಯಿಸಿದರೂ, ಹೊಸದಾಗಿ ಕಟ್ಟಿಕೊಂಡ ಆಕೆಯ ಬದುಕನ್ನು ಬೇರೆ ರೀತಿಯ ದಬ್ಬಾಳಿಕೆಗೆ ಗುರಿಯಾಗಿದೆ.

ಕುಟುಂಬದಿಂದ ಹೊರಬಂದ ಮಹಿಳೆ ಸಮಾಜದಲ್ಲಿ ಹಲ ಬಗೆಯ ಕರ್ತವ್ಯಗಳನ್ನು ನಿಭಾಯಿಸುತ್ತಿದ್ದಾಳೆ. ಮೆನ, ಕುಟುಂಬ, ಮಕ್ಕಳ ಪಾಲನೆ ಪೋಷಣೆಯ ಜೊತೆಗೆ ಸಮಾಜದ ಇತರ ಕಾರ್ಯಗಳಲ್ಲಿ ತೊಡಗಿಸಿಕೊಳ್ಳುತ್ತಾಳೆ. ಸಮಾಜದಲ್ಲಿ ತಾನು ಯಾರು? ಎಂಬುದನ್ನು ಗುರುತಿಸಿಕೊಳ್ಳಲು ಹೊರಟಿದ್ದಾಳೆ. ತನ್ನ ಆಸ್ತಿತ್ವದ ನೆಲೆಗಳನ್ನು ಹುಡುಕಲು ಹವಣಿಸುತ್ತಿದ್ದಾಳೆ. ಆದರೆ ಈ ಭರದಲ್ಲಿ ಆಕೆಯ ಬದುಕು ನರಕ ಸದೃಶ್ಯವಾಗಿದೆ. ಕುಟುಂಬ ಮತ್ತು ವಿವಾಹವೆಂಬ ಸಂಕೋಲೆಗಳನ್ನು ಬಿಡಿಸಿಕೊಳ್ಳಲು ಆಗದೆ ಹೊಸದನ್ನು ಸಂಪೂರ್ಣ ಒಪ್ಪಿಕೊಳ್ಳಲು ಆಗದೆ ದ್ವಂದವ ಜೀವನ ನಡೆಸುತ್ತಿದ್ದಾಳೆ. ಅದರಲ್ಲೂ ತಾಯಿಯ ಸ್ಥಿತಿ ಗತಿಗಳು ಹಿಂದಿಗಿಂತಲ್ಲೂ ಇಂದು ಹೆಚ್ಚು ಸಂಕೀರ್ಣಗೊಂಡಿರುವುದು ಗುರುತಿಸಬಹುದು.

ಇಂದಿನ ಬದುಕು ಸಾಮಾಜಿಕ, ಧಾರ್ಮಿಕ ಶೈಕ್ಷಣಿಕ, ಸಾಂಸ್ಕೃತಿಕ ಬದುಕನ್ನು ವಿಭಿನ್ನವಾಗಿ ರೂಪಿಸಿಕೊಟ್ಟಿವೆ. ಅನಕ್ಷರತೆ ಕಾರಣವಾಗಿ ಮಹಿಳೆ ಶೋಷಣೆ ಒಳಗಾಗಿದ್ದ ಕಾಲವೊಂದಿತ್ತು. ಆದರೆ ಇಂದು ಶಿಕ್ಷಣವೇ ಕಾರಣವಾಗಿ ತಾಯಿಯನ್ನೊಳಗೊಂಡಂತೆ ಮಹಿಳೆಯ ಬದುಕು ಇಂದು ಚಿಂತಾಜನಕವಾಗಿದೆ. ಇಂದು ಶಿಕ್ಷಣ ಆಕೆಗೆ ಸಮಾನವಾದ ಬದುಕನ್ನು ಕಲ್ಪಿಸಿಕೊಟ್ಟಿದೆ. ಈ ಮೂಲಕ ತನ್ನ ಬದುಕನ್ನು ರೂಪಿಸಿಕೊಳ್ಳಲು ಸಾಧ್ಯವಾಯಿತು. ಅದರ ಜೊತೆಗೆ ಆಕೆಯ ಬದುಕನ್ನು ಇನ್ನೂ ಸಂಕೀರ್ಣತೆಯ ಕಡೆಗೆ ಸಾಗುವಂತೆ ಮಾಡುತ್ತಿದೆ.

ಪ್ರಾಚೀನ ಕಾಲದಿಂದಲೂ ಹಲವು ಸಮಸ್ಯಗಳನ್ನು ಎದುರಿಸುತ್ತಿರುವ ತಾಯಿ, ಹೆಜ್ಜೆ ಹೆಜ್ಜಗೂ ಪುರುಷ ಸಮಾಜದ ಸವಾಲುಗಳನ್ನು ಎದುರಿಸುತ್ತ ತನ್ನ ತಾಯ್ತನದ ಕರ್ತವ್ಯಗಳನ್ನು ಪಾಲಿಸುತ್ತಾ ಬಂದಿದ್ದಾಳೆ. ಈ ಕರ್ತವ್ಯಗಳು ಪುರುಷ ಸಮಾಜದ ನಿರ್ಮಾಣವೇ ಸರಿ. ಪುರುಷನ ತೆಕ್ಕೆಯಲ್ಲಿ ಮಹಿಳೆ ಹಲವು ಬಗೆಯ ಹಿಂಸೆಗಳಿಗೆ ಬಲಿಯಾಗಿದ್ದಾಳೆ. ಮಕ್ಕಳಿದ್ದರೂ ಇರದ್ದಿರೂ ಆಕೆ ಎದುರಿಸುವ ಸವಾಲುಗಳು ಹಲವು ವೇದಗಳ ಕಾಲದಲ್ಲಿ ಮಾತೃದೇವೋಭವ ಎಂಬ ಮಾತು ಚಾಲ್ತಿಯಲ್ಲಿದ್ದರೂ. ಮಹಿಳೆಯನ್ನು ಶುದ್ರಳಂತೆ ಕಂಡದ್ದು ಗಮನಿಸಬಹುದು. ಮಹಿಳೆಯರನ್ನು ಸ್ವತಂತ್ರ ನೀಡಿದರೂ ಅದಕ್ಕೊಂದು ಮಿತಿ ಇತ್ತು. ಈ ಪ್ರವೃತ್ತಿ ವೇದಗಳ ನಂತರ್ ದಿನಗಳಲ್ಲಿ ಇನ್ನೂ ಪ್ರಭಲಗೊಂಡಿತ್ತು ಋಗ್ವೇದದ ಕಾಲದಲ್ಲಿ ಪುರುಷಧನ್ಯತೆಯ ಕುರುಹುಗಳನ್ನು ಕಾಣಬಹುದಾಗಿದೆ. ಪುರುಷರಿಂದ ರೂಪಿಸಲ್ಪಟ್ಟ ಧರ್ಮ ಸಂಹಿತೆಗಳು ತಾಯಂದಿರ ಸ್ಥಿತಿಯನ್ನು ಮತ್ತಷ್ಟು ಸಂಕೀರ್ಣತೆಯ ಕಡೆಗೆ ನೂಕಿದವು ವಂಶಾವಳಿಯನ್ನು ಗುರುತಿಸಲು ಗಂಡು ಮಕ್ಕಳೇ ಬೇಕು ಎಂಬ ನಂಬಿಕೆ ಪ್ರಬಲವಾಗಿ ಬೇರೂರಿತು. ಆಸ್ತಿಯಲ್ಲಿ ಹೆಣ್ಣು ಮಕ್ಕಳಿಗೆ ಪಕ್ಕಿಲ್ಲ ಎಂಬುದನ್ನು ಸಾರಿದವು. ಹೆಣ್ಣು ಮಕ್ಕಳು ಶಿಕ್ಷಣ ಪಡೆಯದೆ ಕೇವಲ

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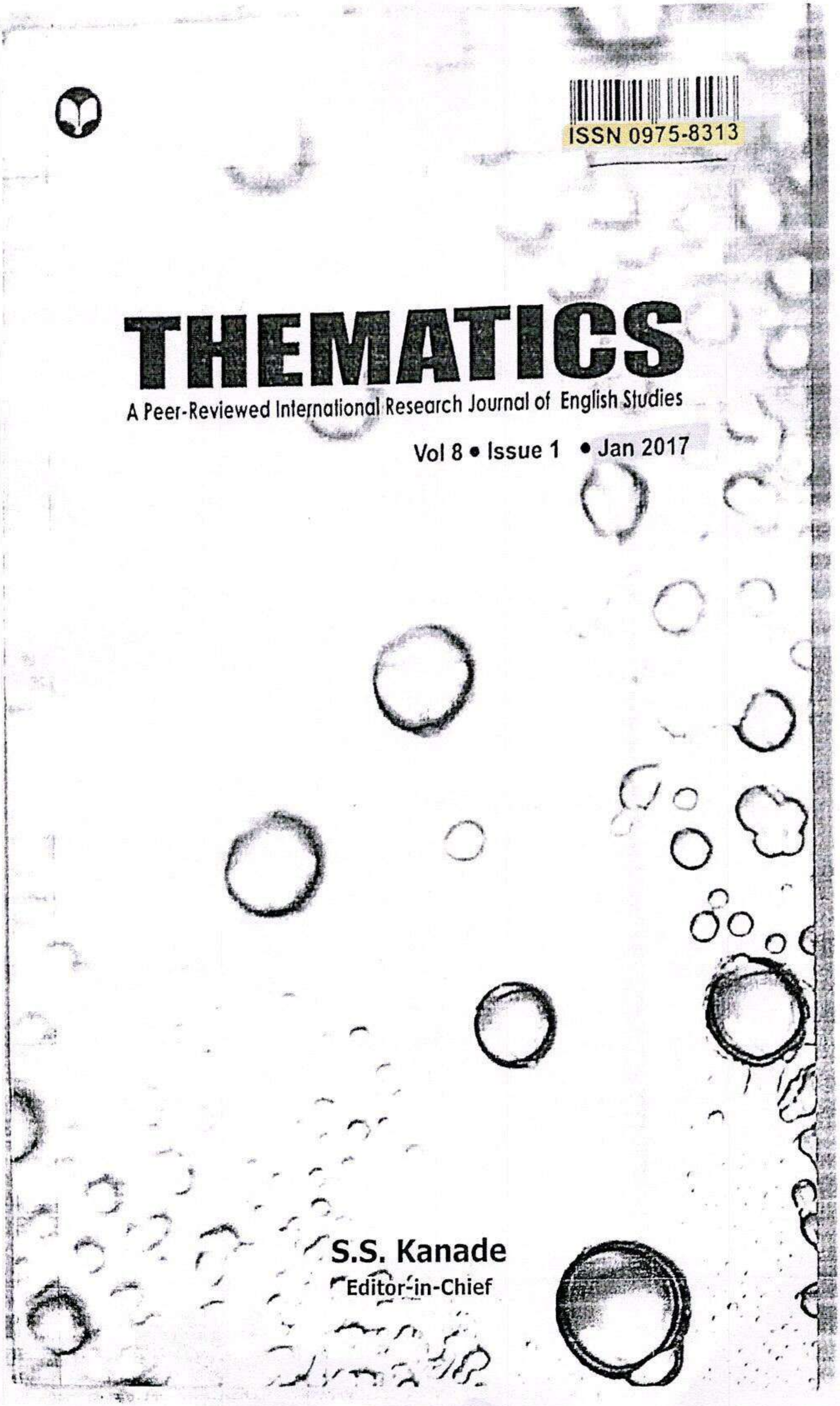

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Lorraine Hansberry: A Black Feminist

Umakanth S. Patil

When Lorraine Hansberry died in 1965 at the age of thirty-five, she was not only the first black playwright to have achieved significant national recognition but also one of very few American women playwrights to have been noticed by the general public.

Lorraine Hansberry achieved unparallel success by writing '*A Raisin in the sun*', which became the first play by a black woman to be produced on Broadway and to win the New York Drama Critics Circle Award. Then even as the critics hailed her as a new black voice, she shocked them by writing another play, about whites – called *The Sign in Sydney Burstein's Window*, which exposes the spiritual and the economic poverty of the Beat generation. Even as a child, Lorraine was unconventional, maintaining empathy and respect for her teen wealthy classmates, defying the class separation which was touted as the norm among haves' and have nots'.

Today, she has been recognized as a black feminist dealing with the cross-current issues between women and men, black and white. Further she forces us into even smaller factions. The controversies generated by recent books and plays about black women are symbols of confusion about their history and present

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This is to certify that the research article submitted by ***Dr. Shashidhar Patil*** *on the topic "MONOPOLIES AND THEIR IMPACT ON THE MARKET" has been published in the October 2018 publication in Volume 16 of Airo International Research Journal.*

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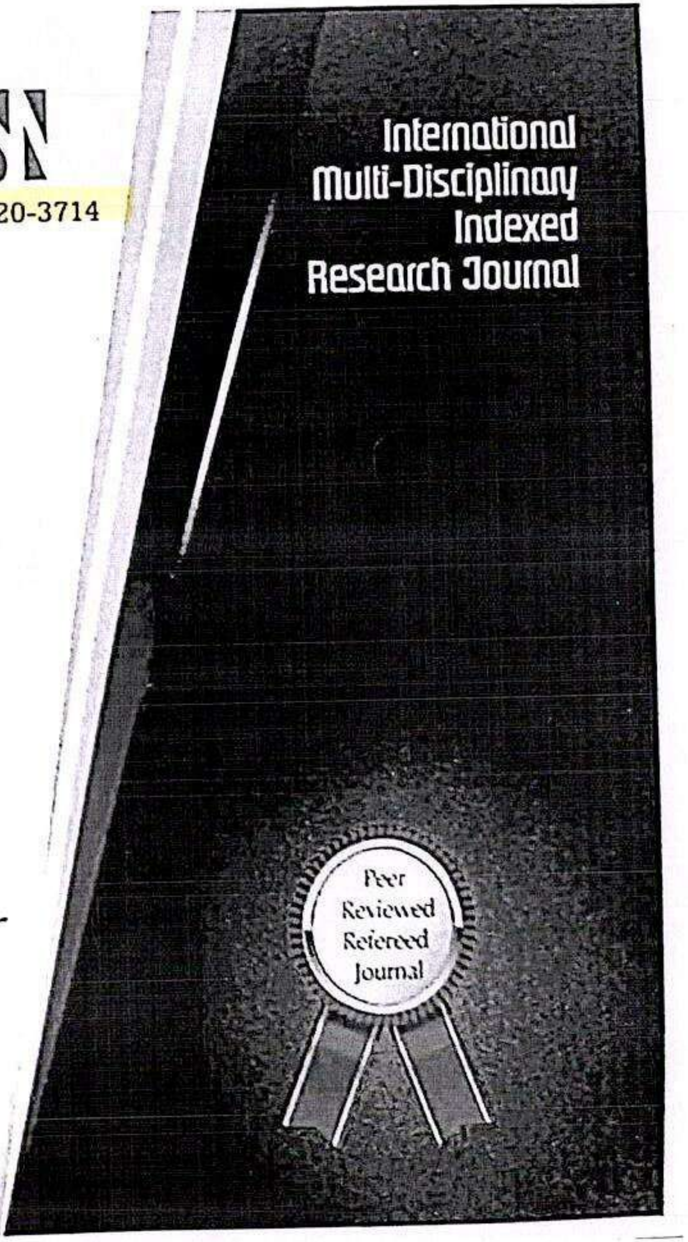
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MONOPOLIES AND THEIR IMPACT ON THE MARKET

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ABSTRACT

Economists have usually argued that economic scarcity is going to be greater below monopoly than if higher market competition is existed. Much more precisely, it's commonly argued that monopoly is going to result in greater economic scarcity than when ideal tournament prevails. This particular paper is designed to clear if the monopoly system of the web business has created market power and discussed the effect of monopoly available on the market.

I. INTRODUCTION

Just like perfect competition is actually an abstract or ideal market style, so too is monopoly. The issues of defining monopoly and measuring the pitfalls and monopoly power of different procedures are actually talked about in this specific chapter. The conventional profit maximizing type of monopoly, assuming the absence of entry, is actually outlined first as well as the effects of a monopolist's behavior for consumers' surplus are actually explored. The scope of losses in consumers' surplus as a consequence of monopoly as compared to the answer of ideal competition is actually displayed to a fixed environment to rely on the inelasticity of the need for the monopolized item as well as on the inelasticity of marginal cost. This leads on to a discussion of the family member advantages of monopoly and ideal competition in a powerful environment about technological change as well as to a consideration of' X-inefficiency' below monopoly and also the potential social costs of this compared to' allocative' inefficiency.

Entry situations are incredibly essential in figuring out whether as well as for just how long a monopoly lasts and those circumstances influence the behaviour of' incumbent' monopolists. For that reason, in any talk of monopoly behaviour, it's vital that you take possible entry into account. With this chapter, account is actually taken of barriers to entry like complete price barriers (for example arising from patenting as well as learning differences involving economies, legal barriers, or businesses) of scale like those stemming from characteristics of technology or maybe marketing and advertising.

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THE CHANGES IN CONSUMER BEHAVIOR AFTER THE POPULARIZATION OF THE INTERNET

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ABSTRACT

The decision making parameters of today's consumer is a lot distinct from that of the first years. From being price sensitive, Indian consumer is additionally getting quality vulnerable. Internet has empowered individuals and made conscious about the accessibility of solutions of much better quality at prices that are affordable. In among the chapters at faculty of Pretoria, the writer states that, internet has turned into a main source of info while making purchase choices. The impact of internet technology is actually playing a significant role in the changing consumer behaviour. This particular analysis is designed to appreciate this changing pattern as well as behaviour of consumer in India. India building digitally to an immediate level has already attracted numerous foreign investors in e-advertising is a great spot as there's progress of the business. Hence the analysis is actually of great relevance.

Keywords: Consumer, behaviour, shopping, web, internet.

I. INTRODUCTION

The web has changed a lot about the lives of ours, it is difficult to picture a period without it. Naturally, among the primary things the web has modified will be the way we purchase. The way we learn, research, and eventually buy items is totally different than it was actually a decade before. The web is being created quickly after previous 2 years, and with pertinent digital economy which is pushed by info technology also being created globally. Right after a long-term development of internet, which quickly increased net users and highly speed internet connection, and new technology as well have been designed as well as utilized for web developing, those lead to firms are able to market as well as improve pictures of services and product via site. Thus, detailed product info and enhanced service attracts increasingly more individuals transformed the consumer behavior of theirs from the standard method to more depend on the web shopping. On the flip side, more businesses have recognized that the consumer behavior transformation is actually inescapable pattern, and hence change the advertising approach of theirs.

Nevertheless, despite the broad availability of goods you are able to purchase from the convenience of the own house of yours, there continue to be a number of products which consumers opt to constantly purchase in store. Furthermore, there are items that the common consumer does not consider truly worth traveling out to buy. As marketers, it is vital that you make this distinction so could greatly operate the best behavior type from advertising promotions.

Since the web is recognized as the effective tool of the business processes, numerous scientists have attempted to disclose its influences as well as impacts. Particularly, the potential of the web in supporting the purchasing behaviour of the clients is intriguing in today company analysis. Customer action indicates the

pursuits which come out of an individual or maybe business on purchasing services or products. The activities include psychological procedures starting from desiring products/services to making choice to purchase products/services.

II. CONCEPT OF CONSUMER BEHAVIOUR

Consumer behaviour refers to the task in which a team or the person of customers selects, purchases, uses or maybe disposes items to meet their wants as well as needs. While deciding upon purchasing a product you will find a number of factors which influences the consumer as social, cultural, psychological, private etc, the principle of consumer behaviour are derived from activities like learning, info processing as well as decision making, created by eminent researchers in the fields of consumer behaviour features 5 stage process Problem recognition, info search, evaluation of options, buy choice as well as post buy behaviour. The crucial mental practice of consumer behaviour as announced by Philip Kotler is actually a precise procedure and there are actually "n" number of elements influencing this behaviour, that is provided in a variety of consumer behaviour models.

The first theories of consumer behaviour was based on economic idea that is depending on the presumption the consumer is actually logical in the purchases of his and decides upon purchasing a product based on principle of utility, which states he spends cash after cost benefit analysis and interest. The later on theories had been depending on the cognitive strategy, in which the person is actually viewed as an info processor that receives the info and processes it and exhibits some behaviour (Jeff). Nevertheless, these cognitive theories are actually produced from the mental perspectives. The idea of consumer behaviour from a socio psychological viewpoint was emerged in 1960's in which researchers as well as marketers explored different factors and the task influencing the consumer behaviour while buying a product. Although generally there are actually various methods in figuring out the factors influencing the consumer behaviour, is actually referred to as a procedure, which begins from trouble recognition to publish buy behaviour.

The decision making parameters of today's consumer is a lot distinct from that of the first years. From being price sensitive, Indian consumer is additionally getting quality vulnerable. Internet has empowered individuals and made conscious about the accessibility of solutions of much better quality at prices that are affordable. In among the chapters at faculty of Pretoria, the writer states that, internet has turned into a main source of info while making purchase choices.

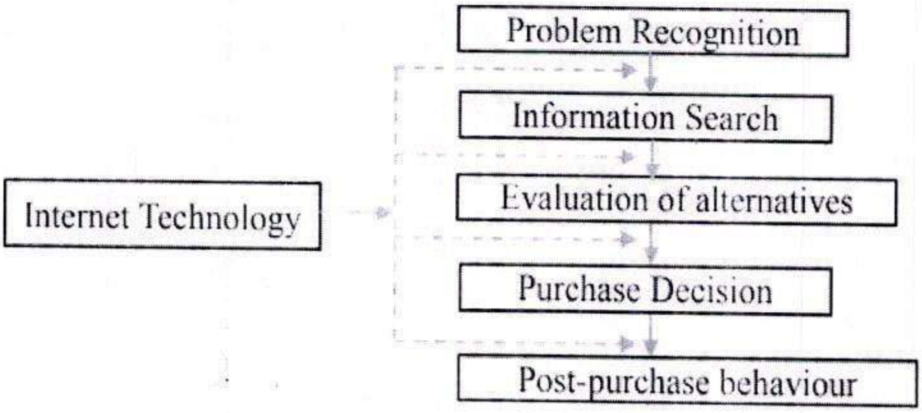
III. TECHNOLOGY IN CONSUMER BEHAVIOUR:

The decision making parameters of today's consumer is a lot distinct from that of the first years. From being price sensitive, Indian consumer is additionally getting quality vulnerable. Internet has empowered individuals and made conscious about the accessibility of solutions of much better quality at prices that are affordable. In among the chapters at faculty of Pretoria, the writer states that, internet has turned into a main source of info while making purchase choices. All the above mentioned theories lacked in the approach of theirs towards detailing the technological treatment in the consumer behaviour. Today's consumer depends on internet to make purchases, also supported the demands for research related to technology as well as the relevance of its in consumer behaviour studies. He opined that, technology is actually acting as a facilitating agent in trying to find info and evaluating the options and achieving the business. The online consumer behaviour is actually talked about in 2 perspectives; some scientists believe that the online consumer behaviour differs from the conventional buying behaviour Guttman et al., (1999). On the flip side, other researcher opines that, conventional purchasing behaviour may be put on to today's online consumer with the addition of several of the elements as trust, confidence and danger. Online buy behaviour is theoretically been studied in the perspective of innovation adoption as it's an article learning behaviour. The consumer decision making process with the technological interventions can't be theorized while it takes place over a space of time. Among the first development theories of internet purchases is actually the Innovation diffusion theory., the socio psychological theories start to be predominant while describing the behaviour of online consumer. These theories rely on innovation, technology and also the adoption or perhaps not adoption of this development is the behavioural features in each one of these theories.

There's no concept or maybe researchers' agreement on places that are common, that can explain the explanations why customers purchase online. Hence the causes for willingness or otherwise determination to make use of the technology, the motives preference towards utilizing internet to make purchases, intention behind using internet for making purchases could be studied. This particular analysis is actually directed at understanding changing consumer behaviour towards making purchases on the internet.

IV. CONSUMER BEHAVIOUR IN PARTICIPATORY DIGITAL WORLD:

Today, consumer is actually making purchasing choices in a participatory digital culture. The outdated consumer behaviour no more works into this digital era. There's treatment of technology in nearly all phases of consumer decision making process, there are many factors that are influencing this consumer behaviour and it gets really essential for an internet marketer to recognize the consumer attributes, their online purchasing intensions as well as the behaviours of theirs. The behavioural intentions of people differ. It's additionally found that the younger millennial generation intends to utilize internet technology more when compared to the aged demographic. The cultural, cultural, personal and psychological factors which influence the consumer behaviour are usually straight or perhaps indirectly affected by technological elements. Today's consumer is actually empowered than in the past and this particular empowerment is actually due to the info and technological revolution



With the goal to appreciate this fast treatment of technology in the consumer behaviour, as well as the relevance of the standard consumer behaviour version, the study makes an attempt to check out additional details in Indian context with the next objectives:

- In order to recognize the perspectives of changing consumer behaviour in digital world
- In order to take a look at the effect of technology on consumer while making purchases.

V. EFFECT OF INTERNET ON CONSUMER BEHAVIOR

The influences on consumer behavior are commonly produced between internal and external factors. Outside variables are originated from the environmental problems, as well as internal variables are typically coming from the consumer's brain. You will find numerous factors could affect consumer's behaviors. Based on Warner, the outside influences might divide into 5 sectors: Demographics, socio-economics, public policy and technology; culture; sub culture; reference groups; and marketing. The inner influences are bunch of mental processes, which include semiotics, self-image, motivation, perception, learning, and attitudes (Malcolm). Along with these, Sheth (1983) even recommended that the customers have 2 kinds of motives while shopping, that are non-functional and functional. The purposeful motives are mainly about the time, shopping location as well as consumer's needs, which may be like one stop shopping to avoid wasting time, the environmental of shopping location like free parking spot, lower price of goods and also available to select from extensively assortment of things. The non-functional motives are definitely more linked with culture or maybe community values, like the brand of the shop. The standard shopping is just about the consumer to buy the desires of theirs. This particular behavior is going to be affected by the seller's marketing as well as promotion which attracts clients goes there and buy commodities, afterwards a part of solutions that are new will be taken home and be worn.

Internet Shopping

Internet shopping and conventional shopping are sharing numerous similarities, at exactly the same time, it also exists some variations between them, like the Internet shopping might offer convenience and active services, as well as the conventional shopping might provide customers much more comfortable shopping good quality and planet of items. Both element of shopping malls are actually attempting to improving the services of theirs by learn commutatively from one another, for example conventional shopping malls offer more parking spaces, far more counters, and closer to residential area to be able to enhance services in convenience; Internet shopping malls adopt virtual reality as well as 3D strategies to boost the business presentation of things.

Convenience

Internet offers a huge convenience for shopper as the primary reason behind the shopping online has been agreed by the majority of clients as well as researcher. Because of the characteristic of Internet, it allows consumer to shopping online anywhere and anytime, which means consumer is able to browse as well as shopping online 24 hours one day, seven days a week at office or home, which attracts some time starved shoppers come to Internet for save some time to searching items in actual physical shop. Furthermore, Internet provides some great solutions to help save time as well as cash. For instance, shoppers don't have go out to the physical store and hence there's no transportation price. Compare using the conventional shopping, there's no waiting line for shoppers on the web, and several shoppers found they feel stress from the sales folks often, but Internet has them much more pleasant while shopping online.

Technology

The convenience based on Internet is primarily based on the technology growth, and which plays a vital role throughout the advancement of Internet shopping. Within the last decade, groups have recognized that the brand new technology might influence on Internet shopping deeply, and hence there are numerous essential technologies including virtual reality and 3D methods have used to acquire large competitive benefits. info technology has utilized in the type of the web improved much better quality of product information, which help shopper's decision making. Through the number of surveys about the web use, the progress of Internet as well as the speed of growth of Internet use have been fast enhanced within the last ten years. Based on the BMRB International (2004) as well as GVU's WWW 9th User Surveys (1998), the amount of Internet users in Great Britain has grown to 22.7 million among 48.4 % of the adult population, and approximatelyfifty-three % of Internet users have claimed that shopping is actually a primary use of the Web. Additionally, a statistical report on the web Development in China from CNNIC (China Internet Network Information Centre) have launched in July 2006. By this particular article, in the element of Internet shopping, you will find thirty million users usually shopping online, and also near 1/4 Internet users have online shopping experience. The two surveys indicate that far more plus more Internet customers prefer online transaction even though they shopping, therefore the security of online transaction undoubtedly will end up a major aspect to affect the web shopping.

VI. CONCLUSION:

The expansion of internet as well as the use of its for numerous functions has pushed the researchers as well as the marketers' interest to recognize the consumer behaviour towards internet to make purchases. There's exponential growth of the variety of consumer purchasing online. In a nutshell, the evolution of the web has essentially changed how customers perceive makes in addition to buy commodities. There's a definite energy shift from the marketer to the consumer, as the consumer is actually empowered to make educated choices based on info the web offers access that is easy to. With buyers becoming co-creators, marketers must adopt a far more participative, personalised and user centric strategy to be able to be successful. Marketers must focus on building beneficial brand related UGC to be able to create the brand of theirs and expand the brand equity of theirs. Building discussions around the brand of theirs is important in establishing credibility in the tech savvy age of ours. Nevertheless, despite the increasing obsolescence of the classic marketing strategy, on the internet and offline marketing shouldn't be isolated but viewed as a blend of both outbound and inbound marketing when you are formulating a multi-channel approach. Conventional marketing techniques possess the possibility in garnering access and influencing consumer perceptions and hence shouldn't be dismissed or perhaps neglected. In addition, there'll usually be differentiated customers as well as the potential for repurposing classic methods. Although the ways of marketing have developed along with technology, the job of marketing still remains exactly the same. The goal of its in cultivating quality buyer relationships will certainly generate the feature of its to favourably correlate with the changing behaviours of the customers of its. Projecting into the following 5 years, creating marketing tech teams might be required to deal with the task info technology poses to marketing's function as well as form.

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II. CONCEPT OF MONOPOLY

Monopoly It's a market scenario where there's an individual seller controlling the whole market. Therefore, the firm itself becomes the business. There's absence of any tournament, since the entry of rivals is successfully prevented. To be the single supplier, the monopolist carries a good command over cost determination. Clean monopoly is typical in numerous public energy enterprises underneath the total command of the state.

The distinctive functions of a monopoly market for merchandise are actually:

- The monopolist is actually the sole producers in the business.
- You will find no directly cut-throat substitutes for the item of the monopolist. Thus, the customers have no answer. They've to either purchase the item from the monopolist or even go without it.
- Monopoly is actually a total negation of competition The monopoly firm faces a downward sloping demand curve for the product of its. Which implies it can't promote much more output unless the cost is lowered.
- A clean monopolist does not have quick rivals because of to certain barriers to entry into the industry. However, there are actually legal, technological, natural or economic obstacles, which might obstruct the entry of new firms.
- The cost is exclusively determined at the discretion of the monopolist, since he's unchecked command with the supply.

You'll notice 6 qualities of monopolistic competitiveness (MC):

- Product differentiation
- Many firms
- No entry and exit cost in the long run
- Independent decision making
- Some degree of market power
- Buyers and Sellers do not have perfect information (Imperfect Information)

III. PERFECT MONOPOLY

A Monopoly (from Greek monos μόνος (alone or single) + polein πωλεῖν (to sell) prevails when a certain person or maybe enterprise is actually the sole supplier of a specific commodity (this contrasts with a monopsony which pertains to a single entity's command of a market to buy an excellent or maybe service, along with oligopoly which consists of a couple of entities dominating an industry). Monopolies are hence recognized by an absence of economic competition to create the good or maybe service as well as a lack of practical substitute items. The verb monopolize' refers to the task by which a business gains the capability to increase costs or even exclude competitors. In economics, a monopoly is actually a one-time seller. In law, a monopoly is actually a business entity which has considerable market power, that's, the energy to charge prices that are high. Even though monopolies might be big business organizations, size isn't a characteristic of a monopoly. A little business might still have the strength to increase costs in a tiny market (or maybe market).

A monopoly is actually distinguished from a monopsony, in which there's just one customer of a product or maybe service; a monopoly might also have monopsony command of a sector of a market. Furthermore, a monopoly must be distinguished from a cartel (a type of oligopoly), in which a number of providers act in concert to coordinate services, sale or costs of goods. Monopolies, monopsonies as well as oligopolies are conditions so that one or even some of the entities have market power and consequently communicate with the clients of theirs (monopoly), suppliers (monopsony) as well as the other businesses (oligopoly) in tactics that leave market interactions distorted.

Characteristics of Perfect Monopoly

- Profit Maximizer: Maximizes earnings.
- Price Maker: Decides the cost of the good or maybe item to be offered, but does so by determining the amount to be able to demand the cost desired by the firm.
- High Barriers to Entry: Other sellers are actually not able to type in the market of the monopoly.
- Single Seller: In a monopoly, there's one seller of the good that generates all of the output. Thus, the entire market is actually being served by a single business, and for practical purposes, the business is actually the just like the business.
- Price Discrimination: A monopolist is able to alter the purchase price as well as quality of the service. She or he sells more numbers charging less cost for the item in an extremely flexible market and also sells less numbers charging price that is huge in a less flexible market.

Sources of Monopoly Power

Monopolies derive the market power of theirs from barriers to entry- circumstances which stop or perhaps significantly impede a possible competitor's potential to participate in a market. You will find 3 major kinds of barriers to entry: deliberate, legal, and economic.

- Economic Barriers: Economic barriers consist of economies of scale, capital needs, technological superiority as well as price benefits.
- Economies of Scale: Monopolies are actually characterized by minimizing costs for a somewhat big range of output. Decreasing expenses coupled with big first expenses provide monopolies a benefit of would be competitors.
- Capital Requirements: Production processes that need huge investments of capital, or maybe big research as well as development expenses or even significant sunk costs restrict the number of businesses of an industry. Huge fixed costs also allow it to be hard for a tiny business to enter an industry & grow.
- Technological Superiority: A monopoly could be better capable to obtain, incorporate as well as make use of the absolute best technology in producing the goods of its while entrants don't possess the size or maybe money to use the greatest out there technology. One business that is big may at times produce items less than a number of small businesses.
- No Substitute Goods: A monopoly sells a great for which there's no good replacement. The absence of substitutes can make the need for the great fairly inelastic allowing monopolies to extract good earnings.
- Control of Natural Resources: A key source of monopoly energy is actually the command of resources which are essential to the generation of a final excellent.
- Legitimate Barriers: Legal rights are able to offer opportunity to monopolise the market associated with a very good. Intellectual property rights, which include copyrights and patents, provide a monopolist exclusive command of the generation as well as selling of particular products. Property rights might provide a business exclusive command of the supplies required to create a very good.
- Deliberate Actions: A business desiring to monopolise a market might take part in different kinds of conscious activity to exclude competitors or even do away with competition. This kind of methods include collusion, lobbying governmental authorities, and force (see anti competitive practices).

IV. MONOPOLY VERSUS COMPETITIVE MARKETS

While monopoly and best match mark the extremes of market structures, there's a bit of similarity. The price capabilities are exactly the same. Both monopolies and completely cut-throat businesses reduce price and maximize profit. The shut down choices are exactly the same. Both are assumed to experience completely cut-throat elements marketplaces. You will find distinctions, several of the more essential of that are as follows:

Marginal Price and Revenue: In a flawlessly competitive market, cost equals marginal cost. In a monopolistic market, nonetheless, cost is set above marginal cost.

Product differentiation: There's 0 item differentiation in a flawlessly competitive market. Every solution is absolutely homogeneous and a great replacement for any additional. With a monopoly, there's great to complete item differentiation in the sense that there's no accessible replacement for a monopolized positiive. The monopolist is the single supplier of the great in question. A consumer both buys from the monopolizing entity on the terms of its or perhaps does without.

Number of Competitors: PC marketplaces are actually populated by an infinite amount of sellers as well as customers. Monopoly calls for an one-time seller.

Profit Maximization: A PC organization maximizes earnings by creating so that cost equals marginal costs. A monopoly maximizes profits by generating exactly where marginal revenue equals marginal costs.

Number of Competitors: PC marketplaces are actually populated by an infinite amount of sellers as well as customers. Monopoly calls for an one-time seller.

Elasticity of Demand: The cost elasticity of demand is actually the percentage change of demand the result of a one % change of relative value. A booming monopoly would've a somewhat inelastic demand curve.

Supply Curve: in a flawlessly competitive market there's a well defined supply perform with a one-to-one connection between cost as well as quantity supplied. In a monopolistic market, no such supply connection is available.

V. IMPACT OF MONOPOLY

As the single providers of a product or maybe service, monopolies have no competition as well as no cost restrictions. Monopolies utilize patents, mergers, and acquisitions to get business dominance and protect against market entry. When left unregulated and unmonitored, monopolies may negatively impact even, consumers, and businesses the economy.

Inefficiency in a Monopoly

In a monopoly, the firm is going to set a certain cost for an honest that's readily available to other customers. The amount of the great is going to be much less as well as the amount will be higher (this is actually the reason why the very good a commodity). The monopoly pricing creates a deadweight loss given that the firm forgoes transactions with the customers. The deadweight loss is actually the likely profits which didn't go to the customer or maybe the producer. As a consequence of the deadweight loss, the combined surplus (wealth) of the consumers and also the monopoly is actually under that received by customers of a competitive market. A monopoly is much less effective in complete gains from swap compared to a competitive market.

Monopolies could become inefficient also less innovative about time since they don't need to participate with other producers in a marketplace. For private monopolies, complacency is able to make space for prospective competitors to conquer entry barriers and type in the market. Additionally, long-term substitutes in markets that are some other are able to take control every time a monopoly becomes ineffective.

Market Failure

If a market fails to allocate the resources of it's effectively, market failure takes place. In the situation of monopolies, abuse of energy is able to result in market failure. Market failure happens once the cost mechanism fails to take into consideration all of the costs and also advantages of supplying as well as eating a great. Being a result, the market fails to supply the socially optimum quantity of the great. A monopoly is actually an imperfect market which restricts paper in an effort to maximize profit. Market failure in a monopoly is able to happen simply because not enough of the good is actually made out there and/or the price tag of the good is absurdly high. Without the presence of market competitors it could be difficult for a monopoly to self regulate & stay competitive about time.

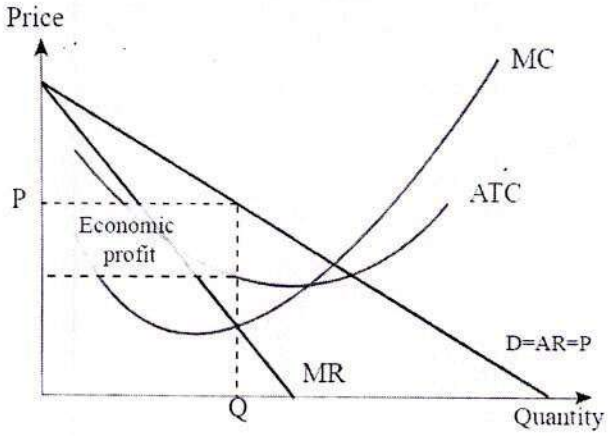

Figure 1

Imperfect competition: This particular graph shows the brief run equilibrium for a monopoly. The grey package illustrates the abnormal profit, though the firm could be easily losing money. A monopoly is actually an imperfect market which restricts the output in an effort to optimize the earnings of its.

VI. CONCLUSION

As one can see, monopolies aren't developed by the free market. They're produced solely by government interference into the free market; they're produced once the government will provide several firm(s) exceptional privileges above others with the initiation of physical force. A totally free market economy is intensely competitive and it is usually more so the bigger the firms in an industry are actually as well as the fewer the number of firms which are present in an industry.

We must also keep in mind that the resources for advertising tournament aren't restricted to antitrust policy, but extend to other parts, like banking regulation. Additionally, you will find numerous relatively simple as well as fast measures Congress might take to better protect entrepreneurs from monopoly power. Mastercard and visa, for instance, demand exorbitant costs on businesses that are small in the United States, however in a lot of Europe regulations cap what they are able to charge

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TEXTURE SEGMENTATION BASED VIDEO SHOT DETECTION AND SUMMARIZATION

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ABSTRACT

Aim of the paper is to experiment video shot boundary detection using region based segmentation methods and texture based segmentations for short videos and perform a comparative study for the best approach for shot detection based on quality parameter analysis at different levels of implementation. As a preliminary work, the experiments carried out on five different video sequences which capture adequately the visual content of the shot. The results are analyzed and verified using alternative methods for each algorithm like four correlation coefficients are used to find the best suited for shot detection and also the best alpha value is considered from a range of values for calculating adaptive threshold value for detecting shot boundary. The clustering methods are used for key frame extraction and video summarization. The results and analysis shows that summarization provides sufficient information about visual content of the shot. The proposed approach is best suited for detecting abrupt cuts in the scene.

Keywords: *video shot detection, region based segmentation, Texture feature extraction, correlation coefficient, adaptive threshold, Quality parameter, key frame extraction.*

I. INTRODUCTION

A video is divided as frames, shots, or scenes and a sequence of interrelated successive frames considered contiguously representing a continuous action with space and time is known shot. A scene can be defined as the collection of one or more shots which focuses on an object or objects of concern. The continuous image sequence in a shot generally has reliable content whereas scene is a more semantic notion, essentially an information unit. Video shots are measured as the primitives for higher level content analysis, indexing, categorization, summarization and many more. Numerous types of transitions or boundaries exist among video shots. These shots are majorly categorized as cut, fade, dissolve and wipe. Despite innumerable proposed approaches and techniques so far proposed, robust algorithms for detecting different types of video shot boundaries have not been found.

Here we proposed a new experimental approach for detecting video shot based on the combination of Region based segmentation and texture based segmentation. The video shots are detected using these segmentation methods, analyzed the results for the best suited method for shot detection. This method mainly detects abrupt cuts in which the image intensity or color is abruptly changed. The frames which contain meaningful information about the content of the video are called as key frames. The researchers have attempted to exploit various features for the extraction of key frames in videos. In this paper, we used clustering methods for extracting key frames and summarization. The results are compared based on the performance.

The paper is structured as follows. Section II gives a review of the existing techniques, while Section III explains about the proposed methodology; Section IV provides explanation of our Video Shot Detection Algorithm. Section V deals with approaches to Key Frame Extraction and summarization. Section VI demonstrates the results and analysis and finally conclusion is presented in Section VII.

II. REVIEW OF THE EXISTING TECHNIQUES

Key frame extraction is an important and prime phase in video retrieval and used in content-based retrieval and video browsing applications. Near the beginning, techniques focused on detecting cuts, and recent works are focused on identifying slow changes. The discussion about various methods adopted for detecting shot boundaries can be found in [1]. Pixel difference is the earliest and easiest method for detecting whether two frames are significantly differences based on the pixel count change in terms of values greater than selected threshold. The pixel count of first and second is compared with second threshold to determine for the second and third frame when shot boundary is detected. The major drawback of this approach is responsive to camera motion. The expansion of pixel difference is Statistical methods [2] in which image is divided into various regions and evaluating simple statistical measures for the pixels in chosen regions. The advantage of this method is, its tolerance to noise, camera and object motion, but less efficient because of increased time complexity for evaluating statistical parameters and usually produces many false positives. Another most commonly used method is Histogram differences is evaluated between consecutive frames and used to detect change in sequence or shot boundaries and simplest approach is to compute color histograms of gray level for the two consecutive frames and check for the bin-wise difference between the two histograms, if it is above the threshold then shot boundary is assumed. To reduce the amount of processing needed, comparison of nonadjacent frames and finer level comparison are made to detect possible breaks. Histogram difference approach is shows reduced sensitive towards motion but major drawback is that if two images having exactly the same histograms with extremely different content can have same threshold value for shot detection then the detection will be false. Edge tracking [4] or the edge change ratio (ECR) [3] method used for detecting shot attempts to compare the definite content of two consecutive frames. The amounts of entering edges enter and exiting edges between the two successive frames was computed. Shot boundaries are detected by considering a large edge change percentages. The researchers determined that this approach is more precise at identifying cuts than histogram difference approaches and minimal sensitive to motion than chromatic scaling. Motion Vectors [5] like block matching, region-based pixel difference, MPEG compressed video sequences are used for shot detection and results shown are much accurate but selecting appropriate vectors are very critical for image processing purposes.

III. PROPOSED METHODOLOGY

The main criteria in shot boundary detection are to find the difference between the successive frames which is sensitive to the correlation (similarity or dissimilarity measure) between the frames and value of adaptive threshold. Considering these two factors, implementation is carried out in four phases. The first phase is to find the best region based segmentation method. Second phase is to selecting the best feature from the feature vector of texture feature extraction method like GLCM which shows best performance for the selected region based segmentation method. Third phase is to apply the selected feature based segmentation for video shot detection, analyze the results by varying the alpha value of adaptive threshold and varying the methods for measuring similarity or dissimilarity between the successive frames. Finally, adopt different clustering methods for key frame extraction and summarization. The overall design steps are as shown in figure 1.

Here a new approach to video shot change detection has been proposed. The implementation of first two phases is carried out for images (as each frame is an image) to reduce the programming complexity. The phase I analysis shows that Region Growing Segmentation method is the best method as it has less computation time and highest match to the segmentation quality metric[17]. In phase II shows the results of GLCM Texture Feature Extraction method indicates that Variance feature is the best feature as it shows highest match to the Texture Feature quality metric [18]. Phase II, since Roughness consumes more time, which is not suitable for videos. So, Contrast feature which consumes less time and stands in second position according to the Quality metrics is declared as the best feature which can be further used for segmentation and shot detection.

IV. VIDEO SHOT DETECTION ALGORITHM

The implementation steps are as shown in figure 1. The initial assumptions made for the implementations are

- ✓ Texture feature based segmentation is used to extract the useful information from each frame
- ✓ Alpha value for calculating adaptive threshold
- ✓ The correlation coefficient is used to find the similarity between the successive frames.

V. KEY FRAME EXTRACTION AND VIDEO SUMMARIZATION

The key frames are chosen from each shot for indexing videos. Each PCCn value is compared with the, i.e. if PCCn >Th then there is a shot change detected. The interested good key frames are selected based on their visual and semantical significance. In this work, Fuzzy C Means Clustering Mechanism is adopted for Video Summarization. The basic idea is to produce the video summary based on clustering similar key frames or shots and then presenting some degree of frames per cluster. The selecting similar frames based on their color distribution, luminance and motion vector is significant in frames clustering. In addition, it is also required to find different criteria that can be employed to measure the similarity and or dissimilarity. Our implementation is based on the extraction of color features from video frames and Fuzzy C Means Clustering (unsupervised classification) for selection of representative frame.

VI. EXPERIMENTAL RESULTS AND ANALYSIS

A. Background

The experiment is done as collection of modules like selecting the best Region based Segmentation method as the initial stage. Second module of the work is selecting best feature among other features for each texture feature extraction method, here GLCM [6] and Tamura method [16]. Finally, selected best texture feature for each method is used as segmentation criteria for region based segmentation method to segment each frame of the input video. For Alpha variation (ranging from 2.0 to 6.0) experiments, four video sequences are considered and for correlation coefficient variations, ten video sequences of different scenarios are considered. The different correlation coefficient methods are Cross Correlation (CC), Normalized Area based Correlation (NACM) Method, Pearson's Correlation Coefficient (PCC) and Spearman's Correlation Coefficient (SCC).

B. Video Shot Detection

Video Shot Detection (VSD) algorithm is implemented with two assumptions, Alpha (= 4.0) for setting adaptive threshold value and Correlation Coefficient (initially Pearson's Correlation Coefficient) method. As VSD depends on two parameters and assumption will not give the best results. So the extensive results are generated and analyzes by keeping one value as constant and other as variable. The detailed results and corresponding analysis is as shown in Figure 1.

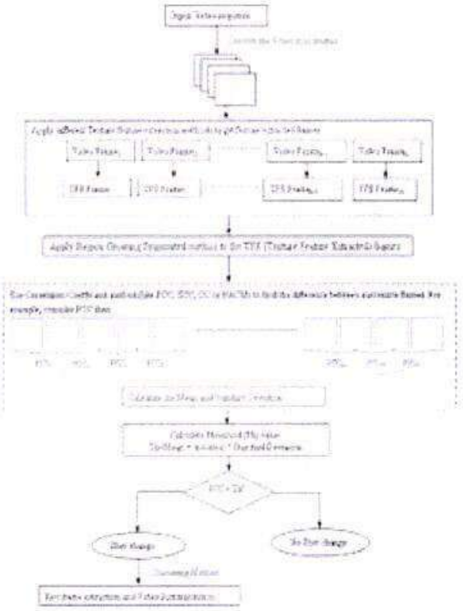

Figure 1: Block diagram for Video Shot Detection and summarization

Table 1: Shot Detected by proposed Texture based Region Growin Segmentation algorithm

Input Videos	Total no. of frames	Actual shots	GLCM Texture Features (shot detected)		Tamura Texture Features (shot detected)	
			PCC	NACM	PCC	NACM
Cut1.avi	390	4	4	4	4	4
Cartoon.avi	407	4	11	11	4	4
Cut2.avi	635	4	8	8	3	3
Cut3.avi	610	6	11	11	13	4
Hurricane Force.avi	2311	8	8	7	19	19

a2-25.avi	623	13	15	15	16	16
movie1-43.avi	1293	4	19	19	13	15
news-40.avi	1012	5	10	10	6	6
park-24.avi	617	4	9	9	4	4
sports-28.avi	719	13	23	10	4	4
Entertainment. avi	2895	88	50	55	46	48

Input Videos	Texture (shot GLCM Features detected)		Texture (shot Tamura Features detected)	
	PCC	NACM	PCC	NACM
Recall	93.17	93.33	85.8	82.2
Precision	43.39	47.22	74.1	79
F-measure	59.26	62.71	79.52	80.57

Table 2: comparison of the Quality parameter of Shot Detection algorithms for proposed Texture based Region Growing Segmentation algorithm using GLCM and Tamura as Texture Feature Extraction methods

Texture Feature based Region growing Segmentation Method used for Shot detection

To detect shots, the sum of absolute difference of the pixels of 2 consecutive frames in the sequence is considered. When the sum is superior than a particular threshold, the shot is detected. The threshold T used is adaptive threshold and is given by: T = mean + (3 * standard deviation) where 3 is the experimental constant value. Here only the detection of sudden change is considered. The detailed results of VSD using GLCM and Tamura Texture feature based region growing segmentation are tabulated in table 1 and the outcomes of the VSD performance analysis are as shown in table 2.

C. Video summarization

The video summarization is helpful for getting brief summary of the video, independent of video length. For this experiment fuzzy c means method is used for grouping the frames and extracting key frame among each group.

VII. CONCLUSION

In this paper, a new approach for VSD has been proposed as preliminary experiment for short videos; extensive results are generated and analyzed. The quality measure and time complexity measure is done at three levels, first to choose the best region based segmentation, next to select the best texture feature suited for VSD and finally for VSD for accuracy in detecting the exact shot change. The results shows that Region growing method is the best region based segmentation method, Variance feature for GLCM and Contrast feature for Tamura is the best suited texture feature for VSD and NACM correlation coefficient method will show the better similarity measure between the successive frames in comparison to PCC, CC and SCC. The proposed method is to study the behavior of various image processing algorithms for video shot detection and key frame extraction method.

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Algicidal activity and DNA binding affinity of silver nanoparticle- biofabricated by green alga, *Rhizoclonium riparium*

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Abstract

Green alga, *Rhizoclonium riparium* was treated with silver nitrate solution (9 mM) for synthesis of biocompatible silver nanoparticle (SNP). After 72 h of reaction, the filaments of *Rhizoclonium* turned dark brown in color and initially synthesis of SNP was confirmed by observing absorption maxima at 415 nm in Uv-vis spectroscopy. The crystallographic nature and purity of particles were analysed by X-ray powder diffraction (XRD) and Energy dispersive X-ray spectroscopy (EDAX) respectively. Fourier transform infrared spectroscopy (FTIR) confirmed the presence of C-H, N-H, C-C, C-O functional groups on SNP surface. Recorded surface charge of SNP was – 41.4 mV. Transmission Electron Microscopy (TEM) revealed that SNPs were spherical in nature with ~2-40 nm in size. The binding affinity between DNA and SNP was tested by agarose gel electrophoresis. TEM micrographs of SNP-DNA showed the particles arrangement in a series adjoining with each other. Algicidal activity of SNP against unicellular alga, *Chlorococcum infusionum* was confirmed by agar well diffusion method. Upregulation of stress enzymes such as catalase, super oxide dismutase and ascorbate peroxidase together with carotenoid content were recorded against Ag^+ stress. Extracted carotenoids, proteins and chloroplasts from *Rhizoclonium* also showed high efficiency in reduction of Ag^+ ions and subsequent production of SNP.

Keywords: Alga; Silver nanoparticle; Nanosilver-DNA; Algicide; Microscopy, Spectroscopy

Introduction

Silver particle is a well recognized antimicrobial agent (Lara et al. 2010). It has been already reported that SNP is nontoxic to human but showed its effectiveness against microbes at very low concentration (Jeong et al. 2005). The antimicrobial property of SNP has been exploited in different products such as textiles, food storage containers, home appliances and especially in medical devices (Marambio-Jones et al. 2010) and in pesticide filter (Pradeep and Anshup, 2009). SNP is also used in tropical ointments to prevent infection against burn and open wounds (Ip et al. 2006). The antibacterial activity of SNP and their mechanism against bacteria has been fully elucidated (Lara et al. 2010). SNPs directly interact with the cell surface of various bacteria and damaged cell membranes making it more permeable (Sondi and Salopek-Sondi. 2004). Nanosilver has been reportedly used in various medical applications viz. imaging, hyperthermia of tumors and drug delivery (Daniel et al. 2004; Lee et al. 2008). However, the algicidal activity of biogenic nanoparticle has not been reported yet.

The DNA-SNP conjugates have already been exploited as plasmonic biosensors (Huang et al. 2008) and molecular electronics. SNP can interact with cytosine of DNA because in cytosine, presence of lone pair exocyclic nitrogen takes part in binding with SNP (Liu and Huang, 2012). Till date, several exciting methods have been reported for preparation of DNA–SNP conjugates (Liu and Huang, 2012); however, these methods pose serious challenge for researchers. This challenge arises from the chemical degradation of the SNPs during the long incubation period and high silver oxidation reactivity. Thus, to extend the application of DNA–SNP conjugates in the analytical field, a well accepted method for preparing DNA–SNP conjugates is highly desired.

Synthesis of SNP by using different bioreagents like bacteria (Gurunathan et al. 2009; Samadi et al. 2009; Pugazhenthiran et al. 2009; Ganes Babu and Gunasekaran 2009; Nanda and Saravanan 2009; Sintubin et al. 2009; Kalishwaralal et al. 2010) cyanobacteria (Lengke et al. 2007, Roychoudhury and Pal, 2014), fungi (Ahmad et al. 2003; Shaligram et al. 2009; Mukherjee et al. 2001; Ingle et al. 2008; Verma et al. 2010) and higher plants (Shankar et al. 2004; Huang et al. 2007) are well documented. Few reports are there which have identified the reducing capability of cellular components during SNP production such as fucoxanthin extracted from diatom *Amphora* (Jena et al. 2014); protein from fungus *Rhizopus* (Das et al. 2012) are able to synthesize SNP.

In this study, we synthesized SNP using fractioned cellular components (Carotenoids, Protein and Chloroplasts) of green alga, *Rhizoclonium* with comprehensive characterizations using UV-vis spectroscopy, TEM, SEM, DLS, Zeta, XRD and EDAX studies. The algicidal effect and interaction with DNA of SNP was also observed.

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ಜನಪದ ಸಾಹಿತ್ಯ ಒಂದು ಅವಲೋಕನ

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ಮುಖ್ಯಸ್ಥರು, ಕನ್ನಡ ಸಾಹಿತ್ಯ ವಿಭಾಗ,
ಕರ್ನಾಟಕ ಕಲಾ ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ

ಜನಪದ (Folk) ಗೆ ಕಿಟ್ಟೆಲ್ ಅವರ ಕನ್ನಡ ಇಂಗ್ಲೀಷ್ ಡಿಕ್ಷನರಿಯಲ್ಲಿ A community, nation, People; an enhabited country (ಸಮಾಜ, ದೇಶ ಜನತೆ ಎಂಬ ಅರ್ಥಗಳಿವೆ. ಇಂಗ್ಲಿಷಿನ Folk ಶಬ್ದಕ್ಕೆ ಸಮಾನಾರ್ಥಕವಾಗಿ ಕನ್ನಡದಲ್ಲಿ 'ಜನಪದ' ಶಬ್ದವನ್ನು ಬಳಕೆಗೆ ತರಲಾಗಿದೆ. ಯಾವುದೇ ಒಂದು ಜನಾಂಗದ ಹಳೆಯ ಕಾಲದ ಸಂಸ್ಕೃತಿಯ ಅಂಶಗಳನ್ನು ಯಥಾವತ್ತಾಗಿ ಉಳಿಸಿಕೊಂಡಿರುವಂಥದ್ದು ಜನಪದ. ಮಾನವಕುಲದ ಆರಂಭದ ಚರಿತ್ರೆಯೇ ಜನಪದ. ಜನರು ಮತ್ತು ಜನರ ಬದುಕೇ ಜನಪದ. ಜನತೆಯ ಸಂಪ್ರದಾಯದ ಮೊತ್ತವೇ ಜನಪದವೆಂದು ಹೇಳಬಹುದಾಗಿದೆ. ಉದಾ: ಹಬ್ಬ ಹುಣ್ಣಿಮೆಗಳು, ಕಥೆ, ಹಾಡು, ಕುಣಿತ, ವಾದ್ಯ, ಉಡುಗೆ ತೊಡುಗೆ ನಂಬಿಕೆಗಳು ಇತ್ಯಾದಿಯೆಲ್ಲವೂ) ಜನಪದವಾಗಿದೆ. ಜನಜೀವನದ ಆಚಾರ-ವಿಚಾರ, ರೀತಿ-ನೀತಿ, ಕಲೆ-ಸಾಹಿತ್ಯ, ಭಾಷೆ ಸಂಸ್ಕೃತಿ, ಜಾತಿ-ಪಂಗಡ, ಮುಂತಾದವುಗಳ ಸಂಕೀರ್ಣತೆಯನ್ನು ಅದು ಪಡೆದುಕೊಳ್ಳುತ್ತದೆ. 'ಹಳ್ಳಿಯ ವ್ಯಕ್ತಿಯೊಬ್ಬ ನಗರಕ್ಕೆ ಹೋದಾಕ್ಷಣ ಜನಪದ ವ್ಯಕ್ತಿ ಆಗಲಾರ. ಕನಿಷ್ಠ ಪಕ್ಷ ಸಮಾನ ಗುಣ ಹೊಂದಿರುವ ಯಾವುದೇ ಒಂದು ಜನರ ಗುಂಪನ್ನು ಜನಪದವೆಂದು ಗುರುತಿಸಬಹುದಾಗಿದೆಯೆಂದು ಅಲನ್ ಡಂಡಸ್ ಹೇಳುತ್ತಾನೆ. ಒಟ್ಟಿನಲ್ಲಿ 'ಜನಪದ'ವು ಪ್ರಾಚೀನ ಪರಂಪರೆಯನ್ನು ಪ್ರತಿನಿಧಿಸುತ್ತದೆ.

ಜಾನಪದವೆಂದರೆ (Folklore) An inhabited of the country; a peasant, a rustic; a subject. (ಅಂದರೆ ಪೌರ, ಜನಸಾಮಾನ್ಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟ) ಎಂಬ ಅರ್ಥಗಳಿವೆ. ಅಷ್ಟೆ (Folklore) (ಇಂಗ್ಲೆಂಡಿನ ಡಬ್ಲ್ಯು. ಜಿ. ಥಾಮ್ಸ್ ಎಂಬುವವರು 1846 ರಲ್ಲಿ ಜಾನಪದ ಶಬ್ದ ಬಳಕೆಗೆ ತಂದರು. ಜಾನಪದವು ಹಳೆಯ ಕಾಲದ ಯಾವುದೇ ಒಂದು ವಿಷಯ ಕಿವಿಯಿಂದ ಕಿವಿಗೆ, ಬಾಯಿಂದ-ಬಾಯಿಗೆ, ಜನರಿಂದ-ಜನರಿಗೆ, ತಲೆಮಾರಿನಿಂದ-ತಲೆಮಾರಿಗೆ, ನೆನಪಿನಿಂದ-ನೆನಪಿಗೆ, ಬಳುವಳಿಯಾಗಿ ಬಂದಿರುತ್ತದೆ. ಆ ಬಳುವಳಿ ಅಥವಾ ಆಸ್ತಿಯೇ ಜಾನಪದ. ಜಾನಪದಕ್ಕೆ ಅನೇಕ ರೂಪಗಳಿವೆ. ಪುರಾಣ, ಐತಿಹ್ಯ, ಹಾಡು ಕಥೆ, ಗಾದೆ, ಒಗಟು, ಒಡಪು, ಒಡಬು, ಬೈಗಳು, ಧಾರ್ಮಿಕ ವಿಧಿ ವಿಧಾನಗಳು, ಆಟಪಾಠಗಳು, ಜಾತ್ರೆ ಉತ್ಸವಗಳು, ಬಯಲಾಟಗಳು, ಮದುವೆ ಪದ್ಧತಿಗಳೆಲ್ಲ ಬರುತ್ತವೆ. ಹೊಲ ಉತ್ತುವಾಗ, ಬಿತ್ತುವಾಗ, ಕಳೆತೆಗೆಯುವಾಗ, ನೇಗಿಲು ಹೊಡೆಯುವಾಗ, ಎತ್ತಿನ ಬಂಡಿ ಹೊಡೆಯುವಾಗ, ಜೋಳ ಕೊಯ್ಯುವಾಗ, ತೆನೆಮುರಿಯುವಾಗ, ಹಂತಿ ಹೊಡೆಯುವಾಗ, ಅದರಲ್ಲಿಯೂ ಹೆಣ್ಣು ಮಕ್ಕಳು ಬೀಸುವಾಗ, ಕುಟ್ಟುವಾಗ ಹಾಡುವ ಹಾಡುಗಳು. ಅಥವಾ ಪದ್ಯ ಪ್ರಕಾರಗಳು ಜಾನಪದದಲ್ಲಿ ಸೇರುತ್ತವೆ. ಇವು ಜನಪದರ ಮಾತು, ಕೃತಿ ಮತ್ತು ಕ್ರಿಯೆಗಳಿಂದ ಕಾಣಿಸಿಕೊಳ್ಳುತ್ತವೆ. ಹೀಗಾಗಿ ಜನಪದ ಸಂಸ್ಕೃತಿಯ ಜ್ಞಾನವೇ ಜಾನಪದ ಎನ್ನಬಹುದು. ಮೌಖಿಕ ಗುಣ, ಪ್ರಸಾರಗುಣ, ಪಳೆಯುಳಿಕೆ ಗುಣ, ಸಾಮೂಹಿಕ ಸೃಷ್ಟಿ, ಹಾಗೂ ಪರಂಪರೆಯ ಗುಣವನ್ನು ಹೊಂದಿ ಜೀವಂತಿಕೆಯನ್ನು ಪಡೆದುಕೊಳ್ಳುತ್ತವೆ. ಈ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಈ ಡಬ್ಲ್ಯು. ವೋಯ್ಗ್ಗಲಿನ್‌ರವರು "This or that fact or theory transmitted orally or in popular sources, as well as traditional prose & verse material is folklore" ಎಂದು ವಿವರಣೆ ನೀಡಿದ್ದಾರೆ. ಅಂದರೆ, ಮೌಖಿಕ ಸಂಪ್ರದಾಯದಲ್ಲಿ ಸಾಗಿಬಂದ ಯಾವುದೇ ಪರಮಪರಾನುಗತ ವಿಷಯವಾಗಿರಲಿ. ಸಾಂಪ್ರದಾಯಿಕ ಗದ್ಯಪದ್ಯವಾಗಿರಲಿ ಅದು ಜಾನಪದವೆನಿಸಿಕೊಳ್ಳುತ್ತದೆ. ಜಾನಪದ ಎಂದರೇನು? ಎಂಬ ಬಗ್ಗೆ ಅನೇಕ ವಿದ್ವಾಂಸರು ತಮ್ಮ ವ್ಯಾಖ್ಯಾನಗಳನ್ನು ನೀಡಿದ್ದಾರೆ. ಅವುಗಳನ್ನು ಓದುಗರಾದ ತಮ್ಮ ಗಮನಕ್ಕೆ ತರಬಯಸುತ್ತೇನೆ.

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ಧರಿನಾಡಿನ ತತ್ವಪದಕಾರರು

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ಮುಖ್ಯಸ್ಥರು, ಕನ್ನಡ ಸಾಹಿತ್ಯ ವಿಭಾಗ,
ಕರ್ನಾಟಕ ಕಲಾ ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ

ಆಧ್ಯಾತ್ಮದ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಹುಟ್ಟಿಕೊಂಡ, ಪ್ರಮುಖವಾಗಿ ಧಾರ್ಮಿಕ ವಾತಾವರಣದಲ್ಲಿಯೆ ಚಿಂತನೆಗೈಯ್ಯುವ ಕನ್ನಡ ತತ್ವಪದಗಳು ಪಂಡಿತರು ಹಾಗೂ ಪಾಮರರಿಗೆ ಆಪ್ಯಾಯಮಾನವಾಗಿವೆ. ಪ್ರಪಂಚ ನಶ್ವರ, ನರಜನ್ಮಸ್ಥಿರವಲ್ಲ, ದೇಹವ ನಂಬಬೇಡಿ, ಈ ಬದುಕು ಮೂರು ದಿನದ ಸಂತೆ, ಮೋಕ್ಷ ಒಂದೇ ಶಾಶ್ವತ, ಮೋಕ್ಷ ಸಾಧನೆಗಾಗಿ ಇಲ್ಲಿ ಏನಾದರೂ ಒಳ್ಳೆಯದನ್ನು ಮಾಡು ಎಂಬ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ದೈವೀ ಚಿಂತನೆ ಮಾಡುವ ಒಂದು ಮನೋಧರ್ಮವನ್ನು ರೂಪಿಸುವುದು ಇಲ್ಲಿಯ ತತ್ವದ ಕಾರ್ಯ. ಜನರಲ್ಲಿ ನೈತಿಕತೆಯನ್ನು ಪ್ರಚುರಪಡಿಸುವುದರೊಂದಿಗೆ ಅವರ ಬದುಕನ್ನು ಹಸನು ಮಾಡುವ ಕಡೆಗೆ ಇದರ ಗಮನವಿದೆ. ಹೀಗಾಗಿ ಜೀವ-ಜಗತ್ತು-ಶಿವನನ್ನು ಕುರಿತು ಚಿಂತನೆ ಮಾಡುವುದರೊಂದಿಗೆ ಭಕ್ತಿ-ಜ್ಞಾನ-ವೈರಾಗ್ಯದ ವಿವೇಚನೆಯನ್ನೂ 'ತತ್ವಪದ'ವು ತನ್ನ ಪ್ರಮುಖ ವಸ್ತುವನ್ನಾಗಿರಿಸಿಕೊಂಡಿದೆ.

ಇಂದಿನ ಹಲವು ತತ್ವಪದಗಳ ವಸ್ತು ಸಮಕಾಲೀನ ವಿಷಯವಾಗಿದ್ದು, ಅವುಗಳಲ್ಲಿ ಬಹಳಷ್ಟು ತತ್ವಗಳು ನೀತಿಪ್ರಧಾನವಾಗಿದ್ದು, ಜನಸಾಮಾನ್ಯರ ಅನುಕರಣೆಗೆ ಯಥೋಚಿತವಾಗಿರುವುದರಿಂದ ಅವು ಪ್ರಸ್ತುತವೆನಿಸಿವೆ. ಅವುಗಳಲ್ಲಿಯ ಜೀವನ ಮೌಲ್ಯಗಳು ಮೌಲಿಕವಾಗಿವೆ. ಹದಿನಾರನೇ ಶತಮಾನದಿಂದ ಇಪ್ಪತ್ತನೆಯ ಶತಮಾನದವರೆಗೆ ವಿಪುಲವಾಗಿ ಬೆಳೆದು ಬಂದಿರುವ ಈ ಸಾಹಿತ್ಯದ ಸಂಗ್ರಹ ಹಾಗು ರಚನಾಕಾರರ ಅಧ್ಯಯನ ಅಲ್ಲಲ್ಲಿ ಪ್ರಾರಂಭವಾಗಿದೆ. ಆದರೂ ಇನ್ನೂ ಸಂಗ್ರಹಿಸಿ ಅಧ್ಯಯನಕ್ಕೊಳಪಡಿಸಬೇಕಾದದ್ದು ಬಹಳಷ್ಟಿದೆ ಎನ್ನಬಹುದು.

ಉತ್ತರ ಕರ್ನಾಟಕ ಭಾಗವು ವೈವಿಧ್ಯಮಯವಾದ ಜನಪದ ಸಾಹಿತ್ಯದ ಕಣಜ. ಗೀಗೀಪದ, ಲಾವಣಿ, ಗರತಿಯಹಾಡು, ಹಂತೀ ಪದಗಳಿಗೆ ಹೆಸರುವಾಸಿಯಾಗಿರುವಂತೆ 'ತತ್ವಪದ' ಸಾಹಿತ್ಯ ರಚನೆಯಲ್ಲೂ ತನ್ನ ವಿಶಿಷ್ಟತೆಯನ್ನು ಕಾಯ್ದಿರಿಸಿಕೊಂಡಿದೆ. ಇಲ್ಲಿ ವಿವಿಧ ಮತದ ತತ್ವಪದಕಾರರು, ಕೋಮುಸಾಮರಸ್ಯದ, ಸೌಹಾರ್ದತೆಯ ಭಾವವುಳ್ಳ ತತ್ವಪದಗಳನ್ನು ರಚಿಸಿರುವುದು ವಿಶೇಷವೆನ್ನಬಹುದು.

ಬೀದರ ಜಿಲ್ಲೆಯ ಐದು ತಾಲೂಕುಗಳಲ್ಲಿ ಒಟ್ಟು 74 ಜನ ಜನಪದಸಾಹಿತಿಗಳು ಇದ್ದಿರಬಹುದೆಂದು ಒಂದು ಅಂದಾಜಿನ ಪ್ರಕಾರ ತಿಳಿದುಬರುತ್ತದೆ. (ಕಂಡುಬಂದ ಅಂಥ ಜನಪದಸಾಹಿತಿಗಳ ಪಟ್ಟಿ ಅನುಬಂಧದಲ್ಲಿ ಕೊಡಲಾಗಿದೆ.) ಇವರಲ್ಲಿ ತತ್ತ್ವಪದಗಳು ರಚಿಸಿದವರ ಸಂಖ್ಯೆ ಕಡಿಮೆ ಪ್ರಮಾಣದಲ್ಲಿವೆ. ಹೆಚ್ಚಾಗಿ ಭುಲಾಯಿ ಪದಗಳು, ಮೊಹರಂ ಪದಗಳು, ಗೀಗೀ ಪದಗಳು ಮುಂತಾದ ಜನಪದ ಹಾಡುಗಳು ರಚಿಸಿದವರ ಸಂಖ್ಯೆ ಬಹಳಷ್ಟಿದೆ. ಅವರ ಸಾಹಿತ್ಯವೆಷ್ಟೋ ಕಣ್ಮರೆಯಾಗಿದೆ. ಜನರ ಬಾಯಲ್ಲಿ ಅಲ್ಲಲ್ಲಿ ಭಜನೆಯ ಹಾಡುಗಳ ರೂಪದಲ್ಲಿ ಉಳಿದುಕೊಂಡು ಬಂದದ್ದು ಅಲ್ಪಸ್ವಲ್ಪ ಎನ್ನಬಹುದು. ಇದಕ್ಕೆ ಕಾರಣವೆಂದರೆ ಈ ಅನುಭಾವಿಗಳು ಹೆಚ್ಚಾಗಿ ಅಕ್ಷರ ಕಲಿತವರಲ್ಲ. ತಾವು ಹಾಡಿದನ್ನು ಬರೆದಿಟ್ಟವರೂ ಅಲ್ಲ. ಎಲ್ಲಕ್ಕಿಂತ ಮಿಗಿಲಾಗಿ ಬಡವರು. ಆತ್ಮಸಂತೋಷಕ್ಕಾಗಿ ಹಾಡಿಕೊಂಡವರು. ಶಿಷ್ಯಬಳಗ ಪಡೆದವರ ಹಾಡುಗಳು ಹೆಚ್ಚಾಗಿ ಉಳಿದುಕೊಂಡಿದ್ದು ಆ ಪರಂಪರೆಯಿಲ್ಲದ ತತ್ವಪದಕಾರರ ಒಂದೋ ಎರಡೋ ಹಾಡುಗಳು ಅಲ್ಲಲ್ಲಿ ಕಂಡುಬರುತ್ತವೆ. ಬೀದರ ಜಿಲ್ಲೆಯ ತತ್ವಪದಕಾರರನ್ನು ಅವರ ಬದುಕಿನ ರೀತಿಯನ್ನು ಅನುಲಕ್ಷಿಸಿ ಅವರನ್ನು ಪ್ರಮುಖವಾಗಿ ಬ್ರಹ್ಮಚಾರಿ ಶಿವಯೋಗಿಗಳು, ಸಂಸಾರದಿಂದ ವಿಮುಖವಾದವರು ಮತ್ತು ಸಂಸಾರಿಗಳು ಹೀಗೆ ಮೂರು ಗುಂಪುಗಳಾಗಿ ಗುರುತಿಸಬಹುದಾಗಿದೆ. ಅಂಥವರಲ್ಲಿ

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WORD RETRIEVAL FROM MULTILINGUAL DOCUMENT IMAGE

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ABSTRACT:

In the present scenario, retrieving information from multilingual documents is a challenging task. The similarity in the shape of the characters in Indian scripts and their interlacing at paragraph, line and word level makes the retrieval problem more complex. In addition, segmentation and recognition of single characters often becomes difficult due to the font style as well as degradations in the print. Consequently, there are no reliable OCRs for south Indian scripts for complete document transcription and retrieval. Thus, indexing and information retrieval from south Indian multilingual documents is very challenging task. Because of this, in this paper, we propose a method based on Histogram of Oriented Gradient and morphological features. The method is devised with a clue of local and global properties of the image. IISC (Indian Institute of Science, Bangalore) database is used for testing, which consists of 220000 words of 11 scripts. To validate the performance of the proposed algorithm, Kannada, English and Hindi scripts are considered out of 11 scripts. The words of dataset and query word are described through HOG and morphological features. To estimate the similarity between query and candidate word, cosine metrics is used. Based on it a distance metrics is generated to predict the relevance of the words. Then efficiently matched words are selected at distance thresholds 98%. Encouraging results have been achieved in terms of the average Precision, Recall and F-Measure at 85.33%, 92.22% and 88.36% respectively.

Keywords: Image retrieval, Cosine metric, Digital Image Processing (DIP), Euclidean distance

[1] INTRODUCTION

In the recent past, the concept of digital library or digital repository is significantly addressed to support the establishment of paperless office. The aim of the digital library is to facilitate access to the digitized documents. To do this, document images need to be indexed. This task is easy if the documents contain single script, otherwise, it is harder. In Indian context, most of the documents are multilingual in nature. As per the Indian constitution, a document of any state government should be produced with three languages. The interlacing of different scripts at different levels (line, word and character) in a document is a common practice in India. The process of indexing and retrieving of such documents can be done using multilingual OCRs by transcribing the complete document. But, there are no robust multilingual OCRs available to accomplish this task. Therefore, an alternative method i.e., word retrieval/spotting is the efficient technique for document indexing and retrieval. The achievement of word retrieval/spotting can be credited to the holistic word matching pattern employed for comparing a query word and the image in the database. Here, both the query and database images are converted into a sequence of feature vectors and their association is often carried out with the help of cosine distance or other matching patterns.

The aim of this paper is to facilitate a user to retrieve a tri-script document written in English, Kannada and Hindi from huge digital repository using a keyword or multiple keywords of any one of these scripts. For instance, a tri-script document contains English, Kannada and Hindi scripts having a word "urgent" and its equivalent words in Kannada and Hindi. In this case, the user should be able to retrieve the same document by keying a keyword of Kannada as " ತುರ್ತು "or Hindi " आवश्यक ".

We first present the related work in Section 2. Then we describe our retrieval scheme based on Histogram of Oriented Gradient with the combination of morphological feature in Section 3. Section 4 presents the performance of the proposed method. Conclusion is drawn in section 5.

[2] RELATED WORK

Word-spotting was at first implemented for speech processing and later it was used for document image retrieval. It is the method to detect/spot the word or phrase in the document image. Primarily it was discussed in [2] and [3] for printed and handwritten documents respectively. Document image retrieval or word-spotting is done in two different approaches i.e. with segmentation and without segmentation. A number of methods were presented in [10-11] to find the keywords to retrieve the document images without using OCR. Recurrent Neural Networks with CTC Token Passing algorithm is effectively used in [13], for a novel word-spotting method. Then, similarity between words is estimated using DTW transform. Retrieval of Hindi words based on BLSTM neural networks is proposed in [17]. In this method, the networks are measured to take contextual information of the word image that cannot be segmented into individual characters. In [18], the word retrieval method is described for Devanagari, Bangla and Gurumukhi script by utilizing primitive shape codes, such as zonal information of extreme points, vertical shapes, and background information of the word image. Then, an exact string matching method is used to measure the similarity between the words. Recently in [19], word retrieval for printed Kannada documents is presented using Gabor wavelets, each query word and database words are considered, then similarity between the words is estimated using cosine distance, and results are achieved in terms of recall , precision and f-measure. In [20], an algorithm for extracting a printed Kannada word from a huge digital database using the fusion of Gabor wavelets and structural features has been proposed. Then similarity between the words was estimated using cosine metric, and encouraging results were achieved. In [15], authors have proposed HOG and morphological features for word retrieval of a printed Kannada document. In this method, each query word and corpus words are represented through feature vector; then words are matched using a Cosine distance and Euclidean distance. They obtained good results for cosine distance measure as compared to the Euclidean. After reviewing these methods, we understand that still lot of work is yet to done for word retrieval. In this paper, our focus is to build an efficient model to describe the shape of the word for better retrieval. To achieve this, a hybrid approach is proposed by combining HOG and morphological descriptors. We have chosen this combination based on the shape of the characters of English/Kannada/Hindi script. The combinations of HOG and morphological descriptors have employed to capture the distinct visual attributes of a word such as holes, directional edges, upper and lower cavities. These descriptors proved as the best choice for word retrieval from multilingual documents.

[3] PROPOSED METHOD

In this Section, we describe HOG and morphological features for word retrieval from printed multilingual document images. Fig. 1 represents the flow of proposed method. To start with, the document image is the preprocessing step, i.e. noise removal and word extraction. This is the common approach for any printed document image preprocessing. In this paper, we consider segmented words from IISc database. Therefore, there is no need of preprocessing. Then, features are extracted from words and represented trough feature vectors. Afterwards, the feature vectors corresponding to the query words and the document image words are matched. The similarity scores are stored in a similarity matrix. Then, similarity matrix is used to locate the existence of the target words. Finally, relevant words are detected and unrelated patterns are filtered out based on thresholding distance

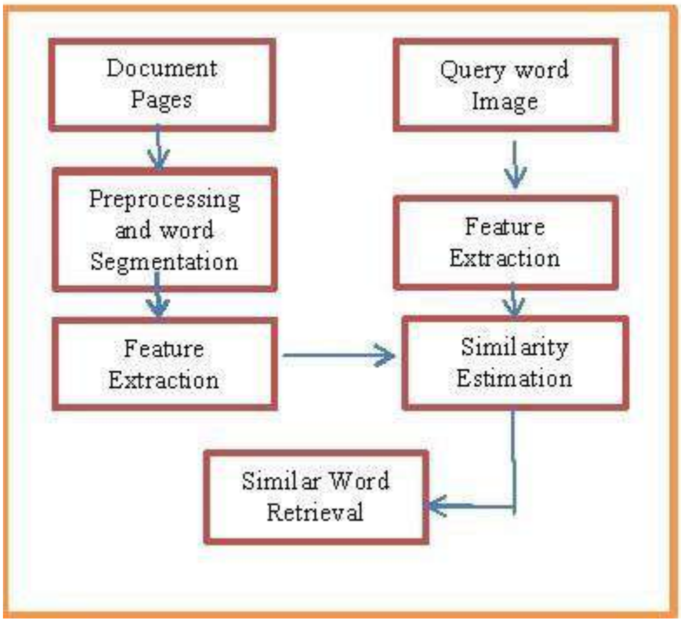


Fig. 1 The flow diagram of the proposed approach

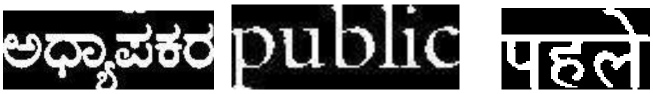


Fig. 2 Sample segmented words of the Indian Institute of Science 11 script database

[3.1] FEATURE EXTRACTION

Feature extraction starts from an initial set of measured data and builds derived values (features) intended to be informative and non-redundant, that efficiently represents interesting parts of a word image. The following are the feature extraction methods described in this paper to represent the word image effectively.

Histogram of Oriented Gradients (HOG):

The HOG features are most commonly used for detection of objects [12] and document image retrieval. The edge information of a word can be efficiently captured using the HOG features. To discriminate the words of different scripts, only edge information is not sufficient. Because, the structural properties (such as curvatures, cavities, w-formation and inverse w-formation) of characters of Indian scripts need to be considered for effective matching. Particularly, to explain Kannada/Hindi words, capturing cavity, hole and directional edge information is needed. Therefore, we have combined HOG with morphological features to capture these potential properties. Exhaustive experimentations have been carried out to show the outstanding performance of this combination. The above-mentioned methods are considered for experiment on each word independently to extract the features from multilingual scripts. The computational description of the HOG and morphological features are explained below.

The basic idea behind the Histogram of Oriented Gradients Descriptor is that appearance of neighborhood object and shape inside an image can be depicted by the flow of intensity gradients or edge directions

The image is divided into small connected regions called cells, and the pixels within each cell are calculated using the histogram of gradient directions. The descriptor is the concatenation of these histograms. For improved accuracy, the local histograms can be contrast-normalized by calculating a measure of the intensity across a larger region of the image, called a block, and these values are used to normalize all cells within the block. This normalization results in better invariance to changes in illumination and shadowing. Fig.3. shows the process of HOG feature extraction on word image.

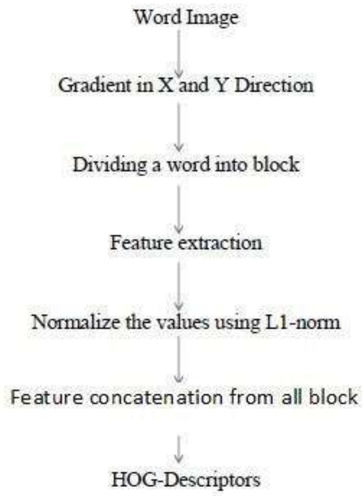

Word Image
Gradient in X and Y Direction
Dividing a word into block
Feature extraction
Normalize the values using L1-norm
Feature concatenation from all block
HOG-Descriptors

Fig. 3 HOG feature extraction process

Let consider I(x, y) as an input word image. To generate a histogram of 9 bins per cell, we applied a sliding window of size 3x3. This leads to accommodate the weighted vote of the gradient vector (0-180^0 for unsigned gradient) in the cell. The Sobel kernel is employed to obtain the vertical and horizontal components of image gradient. The magnitude M(x, y) and direction D(x, y) of the image is computed as follows:

$$M(x,y) = [G_x + G_y]^{\frac{1}{2}} \tag{1}$$

$$D(x,y) = \tan^{-1}(\frac{G_x}{G_y}) \tag{2}$$

$$G_x = I_s * \begin{bmatrix} -1\,0\,+1 \\ -2\,0\,+2 \\ -1\,0\,+1 \end{bmatrix} \tag{3}$$

$$G_y = I_s * \begin{bmatrix} +1 & +2 & +1 \\ 0 & 0 & 0 \\ -1 & -2 & -1 \end{bmatrix} \tag{4}$$

where I_s is the smoothed image. Then, histogram of each block of the cell is clustered.

Morphological feature:

The directional edge information of each word is computed by eroding the input image in four directions viz. 0, 90, 180 and -45 degrees. Later on, the opening, top and bottom hat transformations are applied to describe the word image. Then, a ratio of background to foreground of a word is computed after hole filling. These operations are basically depends on the structuring element. We have designed the structuring element based on the average height of characters of a word as explained in [6]. Fig. 4 shows the effect of erosion operation and these images were taken from [22].

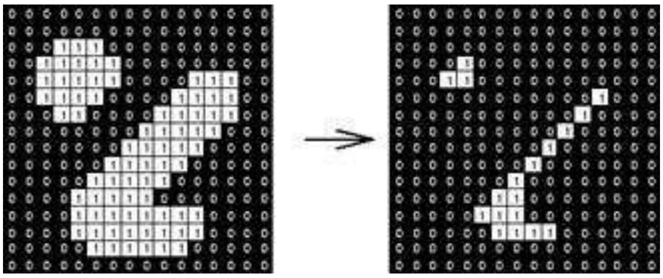


Fig. 4 Erosion of 3x3 square structuring element

A pre-processed input image I(x,y) is directly used for erosion, opening, top and bottom hat transformations and an output image I'(x,y) is obtained. The density of I'(x,y) is defined as

$$Density(\eta) = \frac{\sum_{i=1}^{R}\sum_{j=1}^{C} I'(x,y)}{R * C} \tag{5}$$

where, R and C stands for number of rows and column of an image.

Besides, hole fill operation is performed on I(x,y) and obtained a hole filled image I'(x,y). Then, its density is computed using equation 5. Thus, 11 features are obtained (computed erode image densities of four directions-04, opening, top and bottom hat each-02 and foreground to background ratio after hole filling-01). Further, we combined 11 morphological and 81 HOG features to describe the shape of the underlying image in terms of global and local shape properties and obtain a feature vector of size 92x1.

[3.2] SIMILARTY MEASURE

Words in the database are listed on the basis of the similarity between the query and target word (database). In this paper, similarity between the words is estimated by two distinct metrics, they are:
Cosine Similarity: This metric is commonly used to determine the similarity between two words. In this similarity metric, the word features are used as a vector to find the normalized dot product of the two words of an inner product space that measures the cosine of the angle between them. The cosine of \begin{math}0^0\end{math} is 1 and it is less than 1 for any other angle. The mathematical equation of the cosine similarity is defined below:

$$Similarity(x, y) = \cos\theta = \frac{x.y}{||x|| * ||y||} \qquad (6)$$

where x and y are feature vectors.

Euclidean Similarity: Euclidean similarity (distance) is the "normal" straight-line distance between two points in Euclidean space. The mathematical equation of the distance defined below.

$$I(p, q) = I(q, p) = \sqrt{(p_1 - q_1^2) + (q_2 - p_2)^2} \qquad (7)$$

$$I(p, q) = I(q, p) = \sum_{i=1}^{n}(q_i - p_i)^2 \qquad (8)$$

where p and q are the Euclidean vectors.

[4] EXPRIMENT

[4.1] DATA SET

There is no standard document image database available on Indian scripts. However, the IISC (Indian Institute of Science, Bangalore) word database of 11 scripts is used to validate the performance of the proposed algorithm. This database is basically used for script identification in multilingual documents. Each script of the database has 20000 words which are segmented from various documents. The size of the database is 220000 words. Out of these, we have considered only three scripts viz. English, Kannada and Hindi for testing. We have confined our experimentation to only three languages in this paper. Initially, the experiments were made on individual scripts (call it as DB-1) and their results were recorded. Later on, it was extended to multi-script scenario by combining all together (class it as DB-2). Fig.2. shows the example of word images of the Indian Institute of Science database.

[4.2] EVALUATION PROTOCOL

To evaluate the efficacy of the proposed method manually, a ground truth is prepared for 15 different keywords (5 from each script). The selection of these keywords is made based on their frequency of appearance in the database. The ground truth details are shown in the following Table.1.

[4.3] RESULT AND DICUSSION

In this Section, we discuss the outcomes of retrieving the relevant words from the document images. The performance of the proposed algorithm is evaluated on two dataset namely DB-1 and DB-2 (Indian institute of Science (IISc)) is publicly available [16]. The performance of the proposed method is evaluated through precision, recall and f-measures as described below.

$$Precision = \frac{(RW \cap RelW)}{RW} \tag{9}$$

$$Recall = \frac{(RW \cap RelW)}{RelW} \tag{10}$$

$$F - measure = \frac{2 * (RW * RelW)}{(RW + RelW)} \tag{11}$$

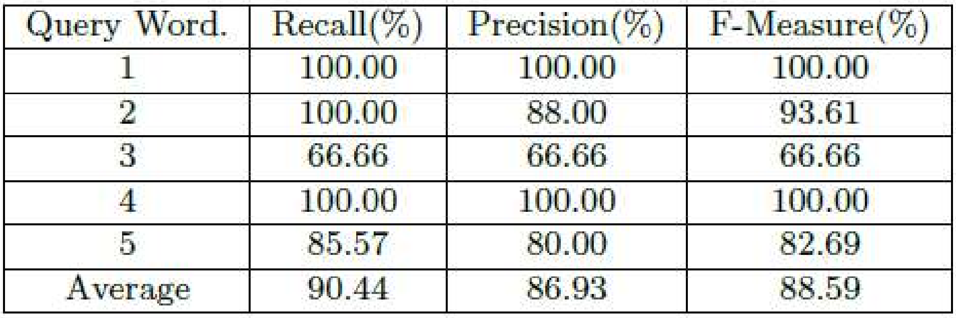
where RW- Retrieved Word and RelW- Relevant Word.

Exhaustive experimentations were performed on both dataset. The experimental results of the DB-1 are summarized in Table 2, 3 and 4 based on Histogram of Oriented Gradient and Morphological features. Table-5, demonstrates the word retrieval accuracy of DB-2. It has highest precision, recall and F-measure as 85.33%, 92.22% and 88.36% respectively when the similarity distance is threshold to 98%. Further Fig. 5, 6 and 7 describes the graphical representation of Recall, Precision and F-Measure of DB-1.

Table-1 Ground truth of the DB-1 and DB-2 (Kannada, Hindi and English scripts

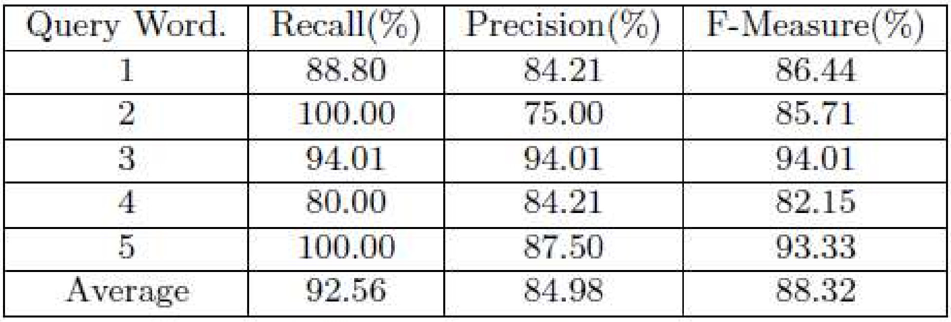
Sl.No	word image	Word frequency
1	ಅಭ್ಯಾಸದಿಂದ	2
2	ಶಂಕರನ	8
3	ತಂತ್ರಜ್ಞಾನ	6
4	ಅಧ್ಯಾಪಕರ	2
5	ನಂತರ	14
6	IEEE	4
7	public	10
8	public	4
9	signal	40
10	image	20
11	पहले	18
12	भारतीय	03
13	जीवन	17
14	लेकिन	40
15	अनुभूति	8

Table-2 Results of of DB-1 (Kannada script) word retrieval



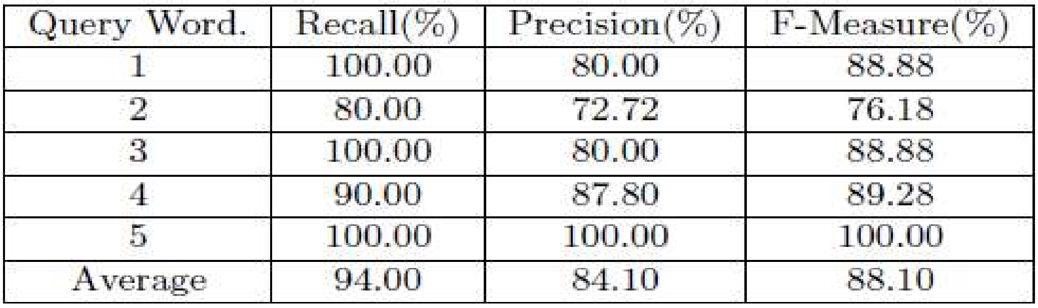
Query Word.	Recall(%)	Precision(%)	F-Measure(%)
1	100.00	100.00	100.00
2	100.00	88.00	93.61
3	66.66	66.66	66.66
4	100.00	100.00	100.00
5	85.57	80.00	82.69
Average	90.44	86.93	88.59

Table-3 Results of DB-2(Hindi script) word retrieval.



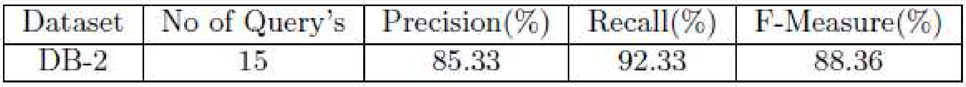
Query Word.	Recall(%)	Precision(%)	F-Measure(%)
1	88.80	84.21	86.44
2	100.00	75.00	85.71
3	94.01	94.01	94.01
4	80.00	84.21	82.15
5	100.00	87.50	93.33
Average	92.56	84.98	88.32

Table-4 Results of DB-2 (English script) word retrieval.



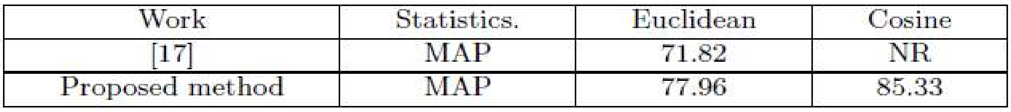
Query Word.	Recall(%)	Precision(%)	F-Measure(%)
1	100.00	80.00	88.88
2	80.00	72.72	76.18
3	100.00	80.00	88.88
4	90.00	87.80	89.28
5	100.00	100.00	100.00
Average	94.00	84.10	88.10

Table-5 An average Precision Recall and F-measure of DB-2

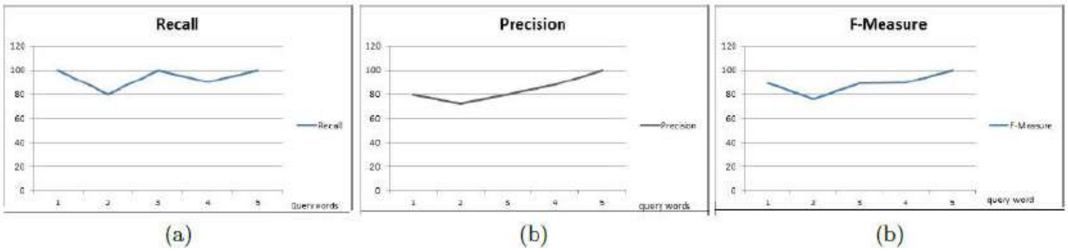


Dataset	No of Query's	Precision(%)	Recall(%)	F-Measure(%)
DB-2	15	85.33	92.33	88.36

Table-6 Comparative analysis of the proposed method

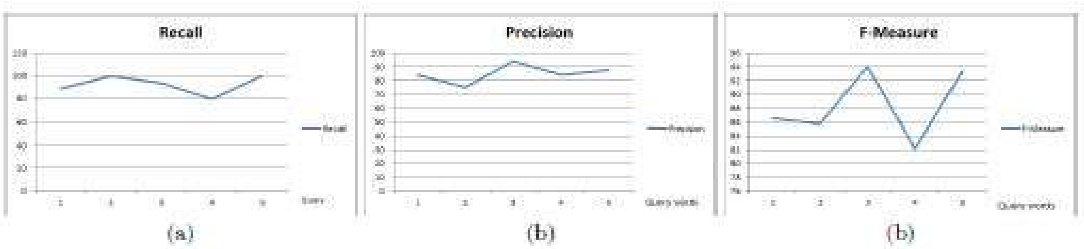


Work	Statistics.	Euclidean	Cosine
[17]	MAP	71.82	NR
Proposed method	MAP	77.96	85.33



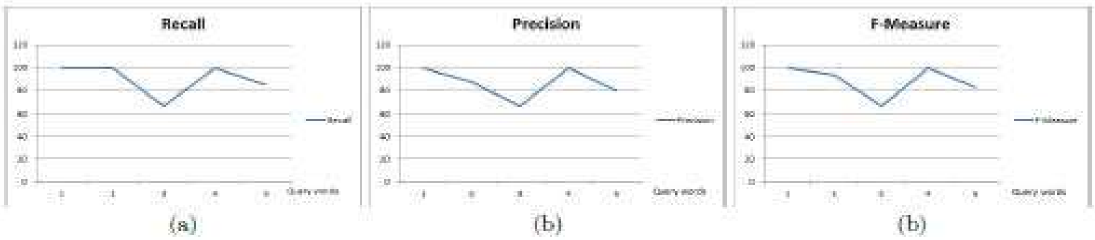
(a) (b) (b)

Fig. 5 Word retrieval recall, precision and f-Measure for five query words of DB-1 (English script)



(a) (b) (b)

Fig. 6 Word retrieval recall, precision and f-Measure for five query words of DB-1 (Hindi script)



(a) (b) (b)

Fig. 7 Word retrieval recall, precision and f-Measure for five query words of DB-1 (Kannada script)

[4.4] COMPARATIVE ANALYSIS

The comparative analysis is made with [17]. Jawahar et al., they worked on retrieval of Hindi words and stated the Mean Average Precision (MAP) as 71.82% with Euclidean distance. But, the proposed algorithm exhibited a remarkable mean average precision as 77.96% against the same script. The cosine distance is also used for experimentation to examine the performance of the method and found 85.33 % as mean average precision. These results are reported in Table 6.

[5] CONCLUSION

This paper presents the problem of word retrieval from multilingual documents. Basically, we have considered a document of tri-scripts containing English, Kannada and Hindi. The combination of HOG and morphological features are used to retrieve the words from above mentioned tri-script documents. The outstanding performance of the proposed method is noticed compared to the performance of the reported methods. This method is efficient in addressing the issues related to different font size, font style, scale and slants of the words. The performance of the proposed method is validated on a large dataset of 60000 words (each script of 20000 words). This work will be extending to other Indian scripts to show this method as generic.

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WORD SPOTTING IN KANNADA DOCUMENT IMAGES

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ABSTRACT:

This article presents word spotting in Kannada document images based on Local Binary Pattern (LBP) features. The experimentations are carried out on a large dataset of 50000 words which are segmented from 250 digitized and preprocessed document images belongs to different fields such as Arts, Science and Commerce. Afterwards LBP features are computed on the query word as well as on dataset images that are to be queried. The similarity between the query and target or candidate word is estimated using cosine distance and relevant words are ranked based on different thresholds. The parameters such as average precision, recall, and F-measures were used to determine word spotting performance and achieved encouraging performance results such as 74.61%, 75.75% and 75.7% respectively were achieved.

Keywords: Optical Character Recognition, Cosine Distance, Document Image Retrieval.

[1] INTRODUCTION

In the recent past, a vast quantity of printed documents ranging from old texts to modern manuscripts belonging to several museums and libraries of the world are being digitized. To access such on-line databases, labeling and indexing of each imaged document is essential. To achieve this task manually a structured meta-data file for each book or group of books needs to be created. This kind of indexing is a very complex task, and becomes unwieldy as the size of repositories increases. The needed task is the automatic recognition of characters or words to achieve labeling and indexing or transcription of the documents. The state-of-the-art methods of OCR work fine when the documents are in good condition for transcription. But they fail to transcript the documents when the documents are poor in quality. The quality of the documents mainly depends on the type of the printer, inconsistency in printing style, ink, quality of the paper, multi-script and age of the document etc. In the case of handwritten documents, word spotting is even more complex due to the variations existing in writing style, size of the characters, slants, touched words, uneven gaps between the words and lines etc. Thus, automatic printed/handwritten document text recognition still remains a very exciting problem for the Computer Vision (CV) community. In this scenario researchers have been trying word-spotting methods to overcome the limitations of the above-mentioned text reading approaches.

In this, article, the authors have tried to develop a word spotting algorithm by considering issues discussed in the aforementioned paragraph such as font size, style, age and quality of the documents. The remainder of the paper is described as follows: The literature review is given in section 2. The proposed methodology is presented in section 3. Section 4 contains experimental results and discussion. Conclusion is drawn in Section 5.

[2] RELATED WORK

Word spotting method is used for indexing and retrieval of the document images. It is an alternative way to OCR. Usually, designing OCR is a stimulating task but it fails to work in degraded, skewed documents, multi-script documents etc. Therefore, the research on word spotting is extremely motivated in the recent past. Word spotting was primarily used for speech processing and later it was used to retrieve the historical documents and manuscripts of different scripts. Word spotting can be defined as the method of spotting the word or a phrase in the document image. This concept was introduced for the first time in [1] for printed text documents and later in [2] for handwritten text documents. Most of the researchers have worked on word spotting methods namely with-segmentation and without-segmentation. Several algorithms have been projected for both the approaches for the last three decades. The details about word spotting without segmentation and with segmentation are reported in [10] and in [5, 6] respectively. The with-segmentation method decomposes the text in the document at line level [5, 6], word level [11] and character level [7]. Meanwhile, in without-segmentation approach, the whole document image is used to search for spotting the query word. Both the approaches have their own pros and cons. It is obvious that segmentation based word spotting produces wrong results due to improper segmentation in the case of tainted documents, touched lines, broken characters and slanted lines. While, in segmentation free technique the selection of best sliding window size for word spotting is the major subject. In this paper, a segmentation based technique is proposed for word spotting. The various methods relating to it are explained below.

Segmentation based techniques: In [10] movements of the black pixel as holistic features are used in word spotting. The ‘Binary Gradient Structural and Convexity’

(GSC) features are proposed in [6]. The discrete cosine transformation of the contours of the underlying image is used to gain the features vector and its complete process is discussed in [8]. Similarly, the use of Gabor features discussed in [12]. The use of different distance measures in computing the similarity between query and candidate word images are discussed in [5]. In recent past, dynamic time warping (DTW) was frequently used to calculate the similarity between the words as used in [9]. DTW tolerates special difference unlike the above methods.

[3] PROPOSED METHOD

In this section, the authors have proposed a method for word spotting in printed Kannada document images. Fig. 1 shows the flow of our methodology.

[3.1] PREPROCESSING

The input images are binarized using Otsu's [13] grey level threshold selection technique. The noise, special symbols such as commas, double quotation marks etc., are removed using morphological area openings. Using line structuring element, the input images are dilated vertically and horizontally [14] to make a word a single component. Using connected component rule all words are extracted from the document images. This process of word segmentation gives 100% precision if the document contains untouched lines and tainted text. Fig. 2, shows the complete process of word extraction from Kannada document images.

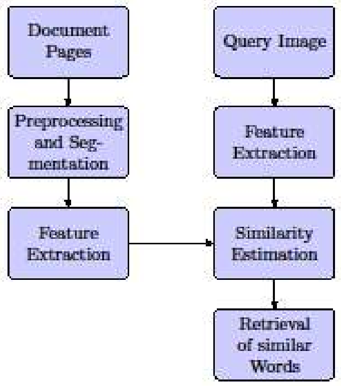
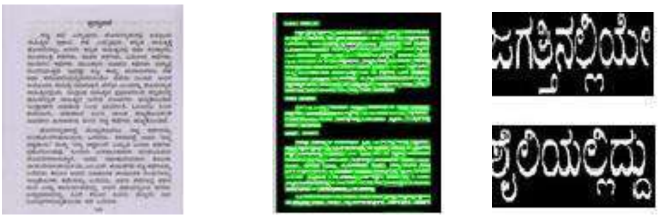


Fig. 1 Bird eye view of the proposed method



(a) (b) (c)

Fig. 2 (a) document page (b) document with horizontal dilation (c) segmented words.

[3.2] FEATURE EXTRACTION

Local Binary Patterns (LBP) has been presented by Ojala in [15]. Recently, LBP features are used to develop a number of algorithms and they have validated its outstanding performance. LBP describes mainly the texture properties of the image and it labels each pixel of the image window cell by thresholding the surrounding pixels and counts the results as binary number. This is explained in the Fig. 3 and working flow of the LBP is explained below.

- Divide the Image into block of cells for e.g. 8x8 pixels per cell
- Pick the center pixel of the cell and compare its neighbor.(for detail mathematically defined below).
- If the center pixel value is greater than the neighboring pixel values consider the value zero; else consider one, all these are binary numbers.
- For user convenience convert these binary numbers into decimal number.
- Then compute histogram of all cells and these histograms can be seen as a 256 decimal feature vector.
- Concatenate (normalized) histograms of all the cells. This provides a feature vector for the whole window.

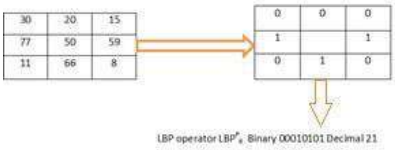


Fig. 3 Describes about LBP operator

LBP_R^P Can be obtained with respect to center pixel (Ic) according to equation -1 as shown below.

$$LBP_R^p(Ic) = \Sigma_{n=0}^{p=1} S(In - Ic)2^n \qquad (1)$$

Where (In and Ic) are equivalent to the values of center pixel and neighborhood pixels. Fig.4.shows the neighborhood of center pixel in a window. The value of s(x) can be calculated by equation-2 as shown below.

$$s(x) = \begin{cases} 1 \text{ for } x < 0 \\ 0 \text{ for } x < 0 \end{cases} \qquad (2)$$

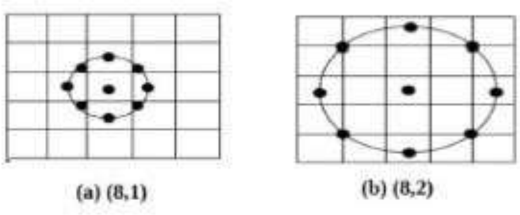


Fig.4. The circular neighborhood P R

[3.3] SIMILARTY MEASURE

Cosine similarity: It is a measure of the similarity between two vectors of an inner product space that measures the cosine of the angle between them. The cosine of 0° is 1, and it is less than 1 for any other angle. Cosine distance measures the orientation between two vectors but not magnitude. The cosine similarity value is 1, if two vectors have the same orientation between them and 0, if they have 90^0 orientations. Further, the diametrically opposed vectors have similarity value as -1. The similarity values are independent of their magnitudes and are mainly employed in positive space, where the outcome is bounded in [0,1]. The similarity between query word and candidate word image is computed using the cost function of cosine distance which is as follows:

$$Similarity(x,y) = \cos\theta = \frac{x.y}{||x|| * ||y||} \quad (3)$$

where x and y are the vectors.

[4] EXPERIMENT

[4.1] DATASET

Kannada document image dataset is no publicly available at present. Therefore, the authors have created a dataset of 50000 words which are segmented from 250 document images. These pages are collected from various books and digitized them with 300 dpi resolution. The word segmentation is carried out using morphological filters. The segmented word images are complex in nature with different font size, style, broken words, partially segmented words etc. Addressing these issues is very significant for the development of a generic algorithm for word spotting.

[4.2] EVALUATION PROTOCOL

To evaluate the performance of the technique manually, a ground truth is created for 5 different query words of Kannada. These are taken in such a way that they must have multiple existences in the dataset. Table-1 shows ground truth of five query words. They are different in size, font style, length, and thickness. Table 2 shows the results of Kannada word retrieval with cosine distance.

Average precision, recall, and f-measures are the three important parameters used to evaluate the performance of the proposed method. Average precision (AP) rewards retrieval systems that rank relevant words upper, and average recall de-emphasizes the exact ranking among the retrieved relevant words and is further useful when there are a huge number of relevant words. The overall system performance through all queries is calculated quantitatively by f-measure. And these matrices are defined below.

$$Precision = \frac{(RetrievedWords \cap RelevantWords)}{RetrievedWords} \tag{4}$$

$$Recall = \frac{(RetrievedWords \cap RelevantWords)}{RelevantWords} \tag{5}$$

$$F-measure = \frac{2*(RetrievedWords * RelevantWords)}{(RetrievedWords + RelevantWords)} \tag{6}$$

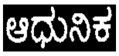
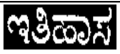
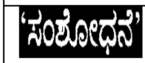
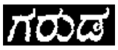
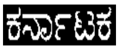
Table-1 Ground truth of dataset

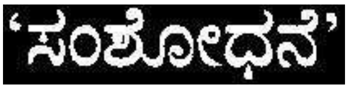
Sl.No.	Document Categories	No of	Keyword Image	Word Frequency in
1	Literature	100	ಗರುಡ	13
			ಸಂಶೋಧನಶಾಸ್ತ್ರ	43
2	Modern Govt.	30	ಕರ್ನಾಟಕ	33
			ಆಧುನಿಕ	32
3	History	120	ಇತಿಹಾಸ	63

[4.3] RESULTS AND ANALYSIS

This Section presents the results of Kannada word retrieval in Table-2. These results are obtained based on Local Binary Pattern features. The properly matched words are selected at different distance thresholds such as 96, 97, 98 and 99 percent. The average recall, precision and f-measures results are at 75.75%, 74.61% and 75.71% respectively. These are obtained when threshold is set to 98%. Further, we extended this experiment by spotting the query word on a document image. Fig. 5 is a sample query word image. It is used to spot the queries word in the related document image which is shown in Fig. 6. The spotted words are shown with red color bounding boxes.

Table-2 Presents the word retrieval results for 5 keywords in terms of recall and precision as well as F-measure

Image	Threshold ∂ —>	99.0%	98.0%	97.0%	96.0%
 ಆಧುನಿಕ	Recall (%) Precision (%) F-measure (%)	100.00 33.33 49.99	100.00 72.72 84.20	74.35 87.87 80.54	100.00 71.72 84.20
 ಇತಿಹಾಸ	Recall (%) Precision (%) F-measure (%)	100.00 12.12 21.61	100.00 45.45 62.49	61.76 63.63 79.88	100.00 49.45 62.62
 'ಸಂಶೋಧನೆ'	Recall (%) Precision (%) F-measure (%)	100.00 45.45 62.49	100.00 69.69 82.13	100.00 78.78 88.13	100.00 66.69 87.10
 ಗರುಡ	Recall (%) Precision (%) F-measure (%)	100.00 43.75 60.80	100.00 81.25 89.65	96.62 96.61 96.61	100.00 88.25 89.65
 ಕರ್ನಾಟಕ	Recall (%) Precision (%) F-measure (%)	100.00 11.11 19.19	100.00 53.96 70.09	77.75 79.36 77.51	100.00 59.96 74.09
Average	Recall (%) Precision (%) F-measure (%)	88.78 29.15 62.83	75.75 74.61 75.71	70.11 76.28 71.67	70.90 64.61 63.71



'ಸಂಶೋಧನೆ'

Fig. 5 Sample Query word

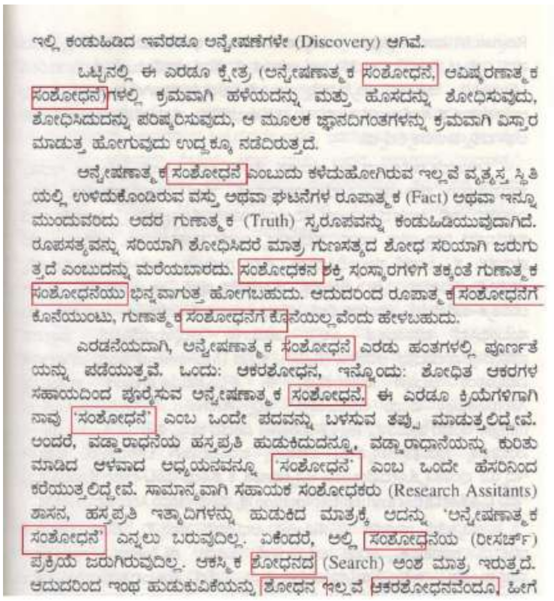


Fig.6 Illustration of word spotting with respect to query word which is depicted in the Fig.5

[5] CONCLUSION

There is no robust OCR system available in the market to transcribe Kannada document images. Recently, the Govt. of India and Karnataka (IISC, Bangalore) has been involved in digitizing Kannada documents. Therefore, to access these documents labeling and indexing is needed. Thus, this work focuses on facilitating easy labeling and indexing as an alternative to the Kannada OCR. To achieve this, LBP features are used for word retrieval and spotting in Kannada documents. The performance of the proposed algorithm is significantly high and this can be realized through the results reported in Table-2. This technique can also be used for language identification, document organization, and filtering of the document images in huge respiratory.

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Comparative Study of Classifiers for Gender Identification using Fingerprints

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Abstract-Gender Identification has shown prominent role in various applications in digital age, some of them are human computer interaction, forensic investigation, Biometrics, targeted advertisement etc. In this paper, we have studied the behavior of Uniform Local Binary Pattern Descriptors with different classifiers for the gender identification using fingerprints. Among many studied classifiers, we have observed that Nearest Neighbor Classifier has performed best as compared to other classifiers with the accuracy of 95.4%.

Keywords- Gender Identification; Fingerprints; Texture Descriptors; Classifier Comparison; Soft Biometric.

1. INTRODUCTION

Human visualization is independent to identify and self-adaptive to recognized the demographic qualities of a person like age and gender. We can easily identify the male and female difference. But, the computer visualization system is not advanced to do all these tasks. As a result the automatic verification of the demographic attributes of human beings is an important task for different applications like HCI (human computer interaction), surveillance.

Fingerprint is the most famous method to identify a person. In this digital era, system safety is main challenge as a large amount of data is easily switched over computer networks. Attaining optimistic proof of identity is the important part of data security and in some cases gender gives additional support for authentication process.

In this paper, we studied the behavior of well-known texture descriptor technique Uniform Local Binary Pattern with different classifiers for gender identification using fingerprints. MAJOR HEADINGS Major headings should be typeset in boldface with the words uppercase.

2. LITERATURE REVIEW

Gender Identification using fingerprint is active area of research over the past decade as it serves for many interesting applications in medical studies, forensic investigation and human computer interaction. In [1] authors used deep learning based frame work with single minutiae for gender identification. Authors in [2] presented an approach to identify the gender based on discrete wavelet transform based features and back propagation neural network for gender identification using fingerprints. Ridge and valley based features are used in [3] for gender identification using fingerprints, they have optimal threshold criteria to classify the gender with focus on forensic anthropology. Authors in [4] described the discrete cosine transform, FFT and Power spectrum density based features for gender estimation from fingerprints. In [5] authors described a method for gender identification using fingerprints, to do this, they have used ridge density features of a fingerprint.

In [6] authors applied method in which each fingerprint represented using feature vector consisting of ridge thickness to valley thickness ratio (RTVTR) and the ridge density values later support vector machine is applied to classify the gender using fingerprint. Authors in [7] proposed a method based on discrete curvelet transform and GLCM based features with Neural Network Classifier for gender classification using fingerprints.

Authors in [8] presented an approach based on 2D discrete wavelet transform and principal component analysis for gender identification using fingerprint. In [9] authors, presented a method based on gender classification using DWT and SVD based approach for gender identification using fingerprints.

In this paper, we have presented the approach for gender identification using uniform local binary patterns with different classifiers. This primary comparative study of different classifiers will be helpful for future research in the field of fingerprint based gender identification.

3. OUR METHOD

Our method involves the three main steps namely, pre-processing, feature extraction and classification. In pre-processing we have performed basic operation like resizing and image enhancement. Uniform Local Binary Pattern based texture descriptor is computed for each fingerprint and presented in the form of feature vector. Further different classifiers are applied to check the behavior of ULBP in gender classification. The block diagram of our method is given in figure for better understanding.

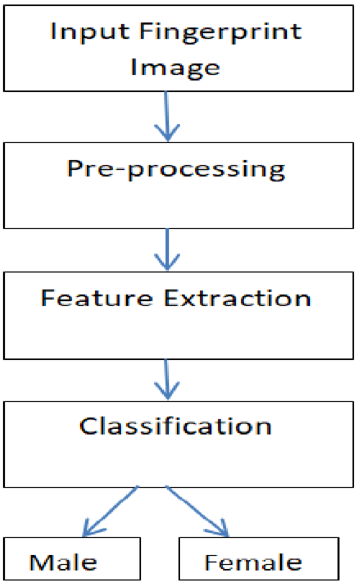

Fig. 1 Block Diagram of Proposed Method

Pre-processing: Pre-processing is required for better image representation, in our case we aim to enhance the image of fingerprints and prepare them for texture descriptor extraction. For doing this, we have first resizes an image to size of 164x164; later histogram equalization technique is applied to enhance the image.

Feature Extraction: LBP is the local texture descriptor [10] which extracts the local features from the image in terms of decimal code of binary digits. First input image is converted to gray scale, then for each pixel its surrounding neighborhood r will considered, then based on center pixel, thresholding operation will be performed and array of binary numbers will converted to single decimal value, the process is repeated for the complete image and equivalent LBP image is going to be produced from which histogram of 256 values is computed as feature descriptor. Further the same LBP can be optimized based on occurrences of transitions in the sequences of 0 and 1. If there is no transition or only two transitions then it will be uniform LBP code, if more than two transitions then it will be non-uniform code. In this way, ULBP only considers 59 values and can be used a feature descriptors. In our experiment, we have presented each fingerprint image using 59 dimensions feature vector obtained by applying Uniform Local Binary Pattern [11].

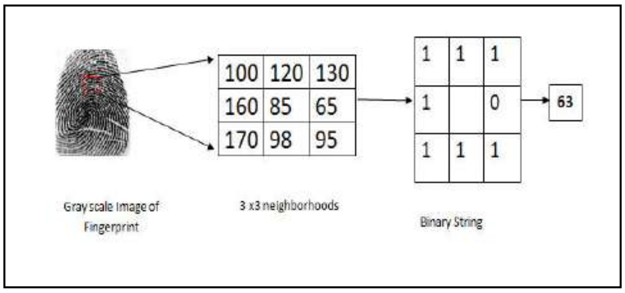

Fig. 2. Computation of LBP

Classification: For the classification of fingerprint whether in male or female category we have considered the different classifiers namely Simple Tree, Complex Tree, Medium Tree, Linear Discriminant Analysis, Quadratic Discriminant Analysis, Linear Support Vector Machine with different kernels extended to Quadratic, Cubic, Gaussian, KNN, Boosted Tree, Bagging Tree, Subspace discriminant, sub space KNN.

4. EXPERIMENTS

There is no public data is available for the gender identification using fingerprints, therefore we have collected our own dataset of 300 fingerprints belongs to 150 for male and 150 for female. For evaluation of our method we have applied 10 fold cross validation with different classifiers mentioned in classification section. The results obtained with different classifiers for gender identification using fingerprints are shown in Table 1. From the table one it can be noted that the basic K-NN classifier is performed better for gender identification task and given accuracy of 95.4%. The same trend is followed by the QDA, Quadratic SVM, Cubic SVM and sub space K-NN classifier and gives the accuracy almost more than 90% that is 91.3%, 92.5%, 93.8% and 92.5 % respectively. While tree based classifiers have not performed well in our experiment and given low accuracy. The comparison with other works is kept out of scope in this paper as our prime aim is to comparison of performance of different classifiers for the gender identification using fingerprints. In future, we will consider the combination of classifiers for enhancement of weak classifiers where result is low.

Table 1. Accuracy of different classifiers for gender identification using fingerprints.

Sr. No.	Classifier	Accuracy in %
1	Simple Tree	64.2
2	Complex Tree	85
3	Medium Tree	85
4	LDA	85
5	QDA	91.3
6	Linear SVM	79.2
7	Quadratic SVM	92.5
8	Cubic SVM	93.8
9	Fine Gaussian SVM	87.5
10	Medium Gaussian SVM	86.3
11	Coarse Gaussian SVM	65.8
12	Cubic KNN	86.7
13	FINE KNN	95.4
14	MEDIUM KNN	85.8
15	COARSE KNN	53.8
16	COSINE KNN	85
17	Boosted Tree	55.8
18	Bagged Tree	88.8
19	Sub Space Discriminant	83.8
20	Sub Space KNN	92.5

5. CONCLUSION

In this study, we have presented comparison of different classifiers based on uniform local binary pattern descriptors. In our experiments, we have observed that nearest neighbor classifier is performed well and given good accuracy, the same trend is followed by the SVM based methods and quadratic discriminant analysis. But tree based methods have not performed well. In future, we will develop a method based on combination of classifiers for gender identification using fingerprints, where weak classifiers are going to combined with strong classifiers.

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Gender Identification using Combination of Face and Fingerprint

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Abstract Gender Identification plays very important role in many computer applications such human robot interaction, forensic investigation, supporting soft biometric and targeted advertisement etc. Sometimes alone fingerprint cannot reveal the needed information; in such case fusion of face information with fingerprint enhances the performance of gender identification. In this paper, we have presented an approach for gender recognition using face and fingerprint. In our algorithm we have applied Uniform Local Binary Patterns (ULBP) for feature extraction and three classifiers were tested separately for classification. We have noted encouraging results during the experimentation.

Keywords — Biometric Fusion, Gender Identification, Fingerprint, Face, Uniform Local Binary Patterns, Soft Biometric

I. INTRODUCTION

Gender identification plays important role in day to day life, as many interactions in real life are gender based. Gender identification has several applications like Human Computer Interaction, focused advertising & marketing, demographic studies & forensic investigation. In addition to this, gender also considered as one of the most promising soft biometric. IT is useful in enhancement of personal identification performance in biometric system. It also helps in reducing the search space to, a particular gender only. Many attempts are made in identification of gender based on various traits such as palmprint, face, fingerprint, clothing style, gait etc. But alone unmoral system can’t give confirm decision is few cases, therefore to enhance system of gender identification we proposed a methods based on combination of face & fingerprints.

Finger prints are most widely and accepted biometric trait, which becomes easily available. During fingerprint based gender estimation, if confusion occurs, then addition facial information boosts the performance & provides promising confirm result.

In this paper, we have proposed a method to identify the gender based on face & finger print biometric. This bimodal method more promising & confirmative as compared to unimodal methods reported in literature.

II. LITERATURE REVIEW

Gender identification is one of the popular problems in biometric research community, lot of works being reported in literature, few of them we have presented in below paragraphs.

Authors in [14] cross verified the advantages and limitation of the automated classification of soft biometric traits. They have created the dual datasets One is near infrared(NIR band) at night time face images and another one is face images at different distances such as 30,60 ,90 and 120 meters long, to classify the gender. They classified the gender ethnicity by using deep convolution neural network after conducting experiment they achieved significant improvement rank _ I recognition rate, compared to other system.

Authors in [15] have used Local Phase Quantization (LPQ) operators, which are nothing but taken from the intensity of the image and monogenic images to classify the gender. Total four components considered one is intensity and other three are from the monogenic images, used SVM as a classifier and compared two datasets, which are, one is LFW another one is Group dataset and achieved an higher accuracy for LFW as 97% whereas, on group dataset they got an 91.58% accuracy.

Authors in [16] classified the gender by combining clothing, hair, and facial components to recognize the gender. Authors considered mainly five components of the face. Such as forehead, chin, eyes mouth and nose. and also

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they have considered external information's such as hair of the gender and clothing of the gender, to classify the gender. SVM used as a classifier .They realized that higher accuracy or higher robustness was obtained for facial components instead of hole face image as input.

Authors in [17] proposed a method, which is nothing but combination of facial, hairstyle and clothing of the image or gender to classify the gender. In this they separated facial, hairstyle and clothing of the input images they had considered each region PCAs and GMMs values and applied Bay's rule to classify the gender and got low error rate compared input is facial only.

Authors in [18] presented periocular biometric for gender classification in the wild. They analyzed that to classify the gender periocular validity area is difficult when the input image is not face or it is blurred one or it is changed .Authors worked on group dataset. Achieved an higher accuracy of 92.46% and 20% error reduction when compared with best face based gender classification.

Author in [19] proposed MCCT as a features to classify the gender. MCCT is nothing but multichannel complementary census transform. which is texture pattern feature ,which will hold the information of the image in the sign and magnitude form of the image .these sign and magnitudes information's will be combined and used as a features to extract the image or classify the gender.

Authors in[20] presented one of the iris image to classify the gender. They have also used uniform LBP as a feature to classify THE gender. They concatenated the histogram with LBP OF the image to improve the accuracy and achieved an accuracy of 91%.

Authors in [6]proposed a multimodal estimation to classify the gender ,first they have used finger print as one modal and face information as another model .with Bayesian hierarchical model. They have used local features used to extract the gender from the input image they worked on their own dataset and achieved good results.

Authors in [7] presented a method to recognition of the gender on the basis of images from the visible and captured from the thermal camera. They conducted experiments by applying different feature extraction and fusion methods to reach highest accuracy.
Authors in [8] have proposed a combination of fuse gait and face as input to classify the gender. They have used one of the canonical correlations as a tool to correlate the two sets of measurements. And achieved an higher accuracy of 97.2%on large dataset

Authors in [9] investigated gender classification by using audio and visual cues. They have designed SVM classifier by considering visual signal as a data by taking different three types of the data one is raw data second one is PCA and third one is non-negative matrix information, and for audio pitch melcepstral coefficients are used as input data. they achieved higher accuracy for speech data as100%.whereas 95.31 accuracy for visual data.

Authors also compared the SVM with other two classifiers which are neural network and KNN . Authors in [10] worked on real word face images they have used facial local images and LBP as a features extract the gender. And these features also combined with clothing features to get increased in the accuracy rate. Authors have combined particle swarm optimization (pso) and Genetic algorithm as a one of the important features to extract the image thy achieved an accuracy of 98.3% by using SVM classifier.

Authors in [11] classified the gender by using the combination of appearance and motion of the image. They considered publically available video dataset and taken LBP as features they have also used spatiotemporal representation for describing and analyzing the image.

Authors in [12] mainly three layers to classify the gender the stages are preprocessing and alignment of the face image second one is constructed pyramid level multilevel face representation from which local features are extracted and third one is extracted features to feed to hierarchical estimator.

Authors in [13] classified the gender on the basis of multi scale local descriptors as features. And also they have used facial patch and holistic and combination of features to extract the gender they reached an 94% accuracy as compared with deep learning approach.

III. PROPOSED METHOD

Gender identification using fingerprint and face combination is main aim of this paper, to do this, our method comprises several steps such as preprocessing, Feature Extraction, Feature level fusion and Classification. Local Binary Patterns are used to encode the image information in fixed size feature vector , further in sequential manner , we have applied the feature level fusion and to determine the gender three classifiers were tested separately those are k-nearest neighbor, support vector machine and Linear Discriminant Analysis.

A. Pre-Processing

Facial images in our dataset were captured using Smartphone and therefore, before experiments we cropped facial regions manually and resized to 200* 164. Later in preprocessing we have simply attempted image enhancement operation, to balance the varying lighting conditions. To utilize contextual information like clothes, ears and hair style, the whole images are used during experimentation, instead of cropping the only facial region. First input image is converted from RGB to Grayscale, where pixels are represented in two dimensional space ranging from 0 -255 gray levels. For fingerprint we have

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resized it 164*164 and then converted to grayscale. To enhance the grayscale images Contrast limited adaptive histogram equalization (CLAHE) is applied. The advantage of this method over traditional histogram equalization is, it provides enhancement of contrast of part of the image wherever necessary. More details on CLAHE are given [4].

B. *Feature Extraction*

Feature extraction is one of the very significant processes in any computer vision applications. In our case, we have biometric traits such as faces and fingerprint. We have applied Local Binary Patterns [1], to extract the meaningful information from gray levels and encode it in single feature vector.

Local Binary Pattern (LBP) is one of the very efficient texture descriptor, it labels the pixel of an image based on thresholding operation, later post thresholding sequence of 0 and 1 considered as binary number further which is represented by its equivalent decimal. The same process is repeated for whole image. The histogram of these labels $2^8 = 256$ is used as texture descriptor. Further it can be optimized by considering only limited intervals as given in which gives only 59 descriptors.[1] Once the labeled image IL(x,y) is obtained , we can define the histogram of LBP as :

$$H_i \sum_{x,y} IL\{(x,y) = i\}, i = 0, \ldots\ldots, n-1.$$

Where n is number of labels. And IL{A} is 1 if true or 0 if false.

Feature Level Combination : In this work, we have proposed a bimodal gender identification system which identifies gender based on combination of fingerprint and face biometric. To combine the information from both the biometric traits, we have applied the feature level fusion. First Features were extracted from each image finger print and face and then later feature vector of fingerprint and face is combined in the sequential manner. After applying LBP we got 59 features from each fingerprint and face, after sequential combination it becomes i.e.59x2 = 118 dimension feature vector. The details process can be depicted from the figure give below:

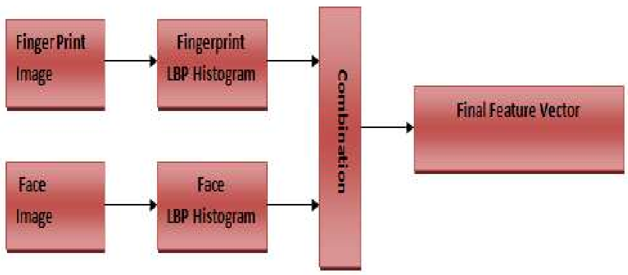

Fig 1: Feature Level combination of Face and Fingerprint Biometric

C. *Classification*

K-Nearest Neighbor is simplest classifier; it stores all training data & based on suitable distance measure, it classifies the unknown sample. The Labeling of unknown sample is done by majority of its neighbors. It assigns the label based on the class most among its nearest neighbor's. In our case we have given Euclidian Distance to find nearest neighbor & values of k=1. Let [(c1,c2,c3……cn)] be the training samples and D[(d1,d2,d3,….dn)] be the testing samples. The Euclidian distance between A & B can be define as

$$: dist(D,C) = \sqrt{(c_i - d_i)^2}$$

Support vector Machine: In machine learning, support vector machines are supersized learning algorithm which is used popularly for classification & Regression analysis. It is developed by vapnik [ref] based on statistical learning theory SVM .The idea of separating hyper plane is used by SVM to find out separation in given 'n'data. Vector x_i.To separate data points a discriminate function is given :$g(x) = W^T X - b$; two separate each data point in one of given two classes.

$$g(x) = W^T . X_i \geq 1$$

Where y_i is the classes either +1 (male) or -1 (female) .

Linear Discriminate Analysis:

LDA is one the simplest classifier, which having ability of generalization. The class discrimination is achieved in LDA by maximizing the ratio between & within class variance. Let consider the data set X=[x1,.xn] of 'n' samples in M dimensional space where each sample. Belongs to the either Male or Female class denoted by 'C'. The computation of Decision is given as:

$$g(x) = W^T X$$

Where W is linear projection vector which minimizes the between scatter matrix S_b

$$S_{b=\sum_{i=1}^{c} n_i} (m_i - m)(m_i - m)^T$$

And maximizes the within class scatter matrix:

$$S_{w=\sum_{i=1}^{c} \sum_{x \epsilon X} n_i} (X - m_i)(X - m_i)^T$$

Where m denotes the means, m_i is the mean over class & n_i is the number of samples in class. The optional projection based on fishers analysis is given by:

$$W_{opt} = arg_W^{max} \frac{|W^T S_b W|}{|W^T S_b W|}$$

This optimization problem can be solved by generalized eigen-problem

$$S_b = AS_W \mathbf{W}$$

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Based on the Euclidian distance measure in LDA space in new sample x is classified to class label W € C, given:

$$w = \operatorname{argmin} d(g(x)_1, v_i) 1 \leq 1 \leq i \leq C$$

In depth discussion is given in [3].

IV. EXPERIMENTS

Dataset : In this chapter, we have prepared our own dataset, as there is no public dataset is available for bimodal gender identification. From each individual we have collected 5 faces and five fingerprints. Total 420 Faces and 420 Finger are collected from 42 males and 42 females belonging to different age groups. Face images are captured using different smart phones to make data base more challenging and fingerprints are captured using fingkey hamster device. Informed consent is taken from the volunteers while collecting the dataset.

Evaluation Protocol: Evaluation of proposed method carried out using k-fold cross validation method instead of using the traditional classification. We have divided our data in 10 sub parts and each sub part used for training - testing in such a way that, when one part serves for testing then another 9 parts are used for training. The same procedure is repeated for all 10 parts average results of 10 trials are considered as final accuracy. Addition to this, we have also computed the confusion matrices and ROC curves to exhibit the effectiveness of our method. The accuracy is defined as follows:

$$\text{Accuracy} = \frac{\textit{Correctly Classified Images}}{\textit{Total Images in Class}}$$

Results: In order to evaluate our method for gender identification using fingerprint and face biometric, we have used the large dataset of 420 images for male and 420 image for female which includes face and fingerprints. We have performed exhaustive experiments and computed different evaluation metrics such as Accuracy. Our experimental tests go as follows:

1. First we have performed experiments only with fingerprints with LBP features and recorded performance of all three classifiers for gender identification.
2. Second, combination of face and fingerprint is considered for the gender identification and feature level fusion is done in sequential manner.

In table 4.1, we have shown the results of gender identification using only fingerprints, we have evaluated three classifiers namely k-NN, Linear Discriminant Analysis, Support Vector Machine. The highest accuracy of 89.60% is recorded with k-NN classifier. LDA has given an accuracy of 77.10%, whereas 76.00% of accuracy is given by SVM while considered only fingerprints for gender identification.

In table 2. we have shown the results with combination of fingerprint and face biometric. In this experiment also, we have evaluated the performance of three different classifiers such as k-NN, SVM and LDA. It is noted that the accuracy increased considerably when facial information is added to fingerprints. Support Vector Machine and Linear Discriminant Analysis performed effectively and yield the accuracy of 100%. On the other hand k-NN has given 99 % accuracy with Euclidian distance and K=3. Finally comparison between accuracies for fingerprint and alone in combination with Facial information is given in figure. From the investigations during our experiments, it is proved that the combination of facial information given superior performance than alone fingerprint.

Table 1 : Gender Identification Accuracy using only fingerprints

Sr No.	Classifier	Accuracy in %
1	k-NN Classifier	89.60
2	Linear Discriminant Analysis	77.10
3	Support Vector Machines	76.00

Table 2 : Gender Identification Accuracy using both face and fingerprint biometric

Sr No.	Classifier	Accuracy in %
1	k-NN Classifier	99
2	Linear Discriminant Analysis	100
3	Support Vector Machines	100

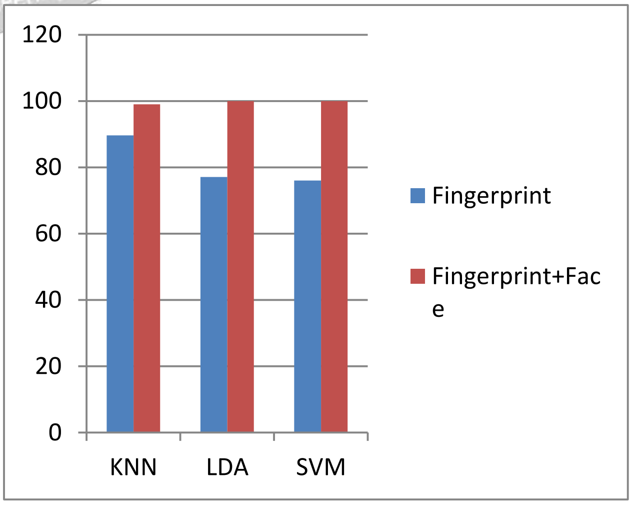

Figure 1: Performance of fingerprint alone and fingerprint + face for gender identification

V. CONCLUSION

In this paper, combination of biometrics for gender identification is investigated with feature level fusion

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approach. We have presented a gender identification system based on fusion of face and fingerprint biometric. During our experiments, we have noted that alone fingerprint cannot reveals the gender information; in such case addition of facial information would be the best choice, this results in enhancement of system. This proposed system is tested on considerably large dataset of 420 faces and fingerprints and we have achieved promising results with the accuracy of 100%. In future, we will focus on improvement of the system by considering the rotation, translation and scaling transformations. Further we will also study the cross database performance of our method for gender identification.

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Orange Peel as Novel Substrate for Enhanced Invertase Production by *A. niger* in Solid State Fermentation

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ABSTRACT

Keywords

Orange peel, Invertase, Solid state fermentation and *Aspergillus niger*.

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Effective invertase enzyme production was achieved with orange peel as carbon source compared to all other tested also residues. Among different nitrogen sources, yeast extract supported maximum enzyme production. Various fermentation parameters (pH of the medium, incubation temperature, time, volume in addition to carbon and nitrogen sources) also influenced the rate of invertase production. Maximum enzyme production of 55 units was observed in the medium of pH 4 containing 2% of orange peel having particle size of 3-1.5 mm containing 1% of sucrose and 1% yeast extract in 96 hours of incubation.

Introduction

Invertase [β-fructofuranosidases (EC.3.2.1.26)] is an enzyme that catalyses the hydrolysis of sucrose (table sugar). The resulting mixture of fructose and glucose is called inverted sugar syrup. Invertase, cleave the O-C (fructose) bond. It is namely used in the food and beverage industry to produce candies, chocolates, lactic acid and glycerol, etc (Aehlew, 2004). Among micro organisms *Saccharomyces cerevisae* commonly called bakers yeast in the primary strain used for the production of invertase commercially. The common microorganism used for the study is *Asperigillus niger* and *Candida utilis* (Icrwin *et al.*, 2001 and Schuster *et al.*, 2002).

The objective of present study is to utilize the agro-industrial residue which is primarily composed of complex polysaccharides that strengthens microbial growth for the production of industrial important enzymes. The solid state fermentation process of enzyme production have potential advantages i.e. simplicity in operation high productivity, less favourable for contamination (Singhania *et al.*, 2009).

Materials and Methods

The microorganism *Aspergillus niger* was isolated from the soil of sugarcane field of Bidar, (India) by serial dilution method. The cultures of these were obtained from the plate inoculated with diluted sample of 10^{-8}. The fungal strain is propagated on potato-dextrose agar medium (PDA) at 30° C and maintained at 4° C.

Fermentation conditions / culture medium

The medium used for the production of enzyme under solid state fermentation has constituents (gm/l) of 25gm sucrose, 10gm yeast extract, 1gm ammonium sulphate [$(NH_4)_2SO_4$], 0.1gm calcium chloride ($CaCl_2.2H_2O$), and Potassium dihydrogen phosphate (KH_2PO_4). The pH of the medium adjusted to 5.

Processing of the substrate

The fruit peel waste (orange, pomegranate, sapota peel and pineapple) were collected from the market and juice centre washed, sliced and shade dried and grinded stored in polythene bag at room temperature. They were autoclaved at 15 lbs for 20 minutes before use (Uma *et al.*, 2010).

SSF: Solid- state fermentation

The powdered substrate 40 gm (orange / pomegranate/sapota/ pineapple) was taken in 250ml Erkenmeyer flask and moistened with culture medium/ solid state medium in the ratio of 2:1 (w/v). The substrate is mixed thoroughly and autoclaved for 20 minutes at 121°C 15 lbs and cooled to room temperature. The sterlised medium was inoculated with 10^6 spores/ml inoculums. After thorough mixing the contents flasks were incubated in a incubator at 35°C for 36hrs intervals. All the sets were prepared in duplicate. At the end of fermentation 50 ml of distilled water was added to the fermentation substrate and kept on rotatory shaker at10000 rpm for 30 minutes and the supernatant used as crude enzyme for assay.

Enzyme assay

The estimation of reducing sugar was done by dinitrosalicylic acid (DNS) method. 0.1 ml enzyme solution was incubated with 0.9ml sucrose in 0.03M in acetic buffer (pH 5). To stop the reaction 1 ml of dinitrosalicylic acid (DNS) reagent was added and heated for 3 minutes in a boiling water bath. The solution was cooled to room temperature. Finally the absorbance was read at 540nm using spectrophotometer (Miller, 1959). One unit of invertase (1U) is defined as the amount of enzyme which liberates one mole of glucose/minute/ml under the assay conditions.

The optimization of the medium on the production of invertase was done by studying the effects of various factors like Inoculum size: 4ml inoculum size, Incubation time: 96 hours, Carbon sources: sucrose 1%, Nitrogen sources: Yeast extract 1%, pH: 5 and Temperature: 30°C (4 days old culture of 4ml inoculum size was taken for the study of parameters).

Optimization study

The optimization of parameters like incubation time, incubation temperature, inoculums size, initial pH and the nutritional sources like different substrates, addition of carbon sources, nitrogen sources are known to influence the enzyme production. These parameters were optimized by the conventional methods of optimizing one independent parameter at a time while fixing other values (Miller 1959). The parameter optimized in one experiment was maintained in subsequent experiments (Shafiq *et al.*, 2003 and 2004).

Results and Discussion

Effect of incubation period

To estimate the optimum incubation period for invertase enzyme production, fermentation flasks were incubated for different time duration from 1 to 6 days. After every 24 hours, the exhausts were evaluated for invertase activity. Maximal filters value of enzyme production were reached between 72 and 96 hours. Further increase in incubation period resulted in a decrease in invertase production (Fig. 1; Tables 1 and 2). This might be due to reduction in the availability of nutrients in the medium and accumulation of toxic products of metabolism (Shafiq *et al.*, 2003).

Effect of incubation temperature

Temperature plays an important role for the production of the invertase by *A. niger*. The effect of temperature on invertase production was studied by incubating the culture media (production media) at various temperatures such as 25, 30, 35, 40°C. The strain has shown maximum enzyme production at a temperature of 30°C (Fig. 2 and Table 3) and the same results were observed by Shafiq *et al.*, 2004. Hence it was found favorable for *A. niger* however, the enzyme activity was not significant because of denaturation of active sites of enzyme at higher temperatures..

Effect of inoculum volume

Different volume of inoculums such as 1, 2, 3, 4 and 5ml were tested for their ability to induce invertase production in the production medium. The maximum invertase activity was observed at the 4ml (45 IU/ml) of inoculum level. The inoculum size was further increases the production of enzyme gradually decreased due to the fact that at high level of inoculum size. Fungi grow fast by consuming the essential nutrients at the initial stages and rapid accumulation of byproducts into the fermentation medium observed reference 4.the reason the low production of enzyme at the inoculum size below than optimal was due to the slow growth of the organism and extended time period to utilize nutrients properly (Schuster *et al.*, 2002).

Effect of pH

The effect of optimum pH for invertase production by *A. niger* was determined by adjusting the pH values of 3, 4, 5, 6, 7 and then inoculated with 4ml inoculum prepared from 4 days old culture and incubated at 30°C for 4 days.

The strain has shown maximum invertase production at the medium pH 5 (Fig. 3 and Table 2) the results of others (Vitolo *et al.*, 1995) are evidenced with this result. This shows that enzyme is not stable towards alkaline conditions so the sucrose inversion efficiency is also affected indirectly (Balasunbaram and Pandit, 2001).

Effect of carbon sources

Different carbon sources such as glucose, fructose, lactose, sucorse and raffinose at 1% concentration were added to the medium for the invertase production. The pH of the medium was adjusted to 5 and 4ml inoculums of 4 day old culture at 30°C for 4 days.

Among all the carbon sources tested sucrose gave the best result Vitolo and Yassuda 1991 and Rubio and Navarro 2006). These results were also supported by the findings of Cairns *et al.*,, (1995), who reported that invertase production in some other fungi were induced by sucrose, glucose and fructose are not involved in the induction synthesis of invertase in *A. niger* (Rubio and Navarro 2006).

Effect of nitrogen sources

The effect of different nitrogen sources were tested by adding 1% different nitrogen sources like peptone, urea, yeast extract to the production medium (pH 5) containing sucrose as the carbon sucrose with 4ml culture inoculum of 4 days old culture (Kamble and Borate 2012). The flasks were incubated at 30°C for 96 hours.

Table.1 Effect of carbon source on invertase production by *A. niger*

Conditions of carbon sources	Enzyme activity (IU/ML)
Fructose	44
Glucose	38
Lactose	26
sucrose	50
maltose	25

Table.2 Effect of nitrogen source on invertase

Conditions of nitrogen sources	Enzyme activity (IU/ML)
Peptone	42
Urea	35
Yeast extract	52
Malt	40
Casein	40

Table.3 Optimized conditions for invertase production by *A. niger*

Optimized parameter	Optimized conditions
Incubation time	96 hours
Incubation temperature	30^0C
Inoculums volume	4 ml
Initial pH	5
Carbon source	Sucrose
Nitrogen source	Yeast extract

Fig.1 Effect of incubation time on invertase production using *A.niger*

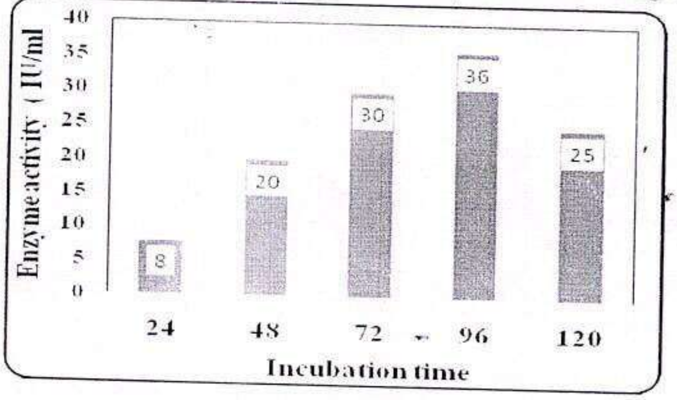


Fig.2 Effect of incubation temperature on invertase production using *A.niger*

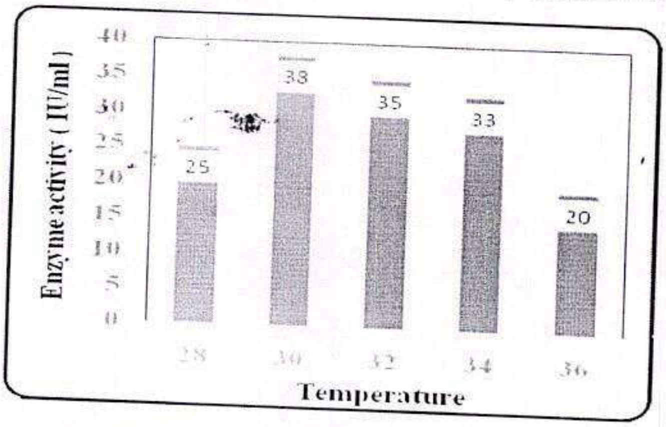


Fig.3 Effect of inoculum volume on the invertase production using *A. niger*

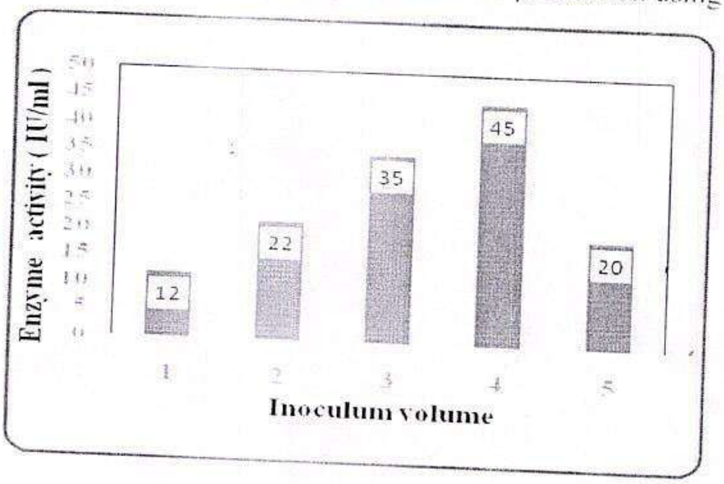


Fig.4 Effect of pH on the invertase production using *A. niger*.

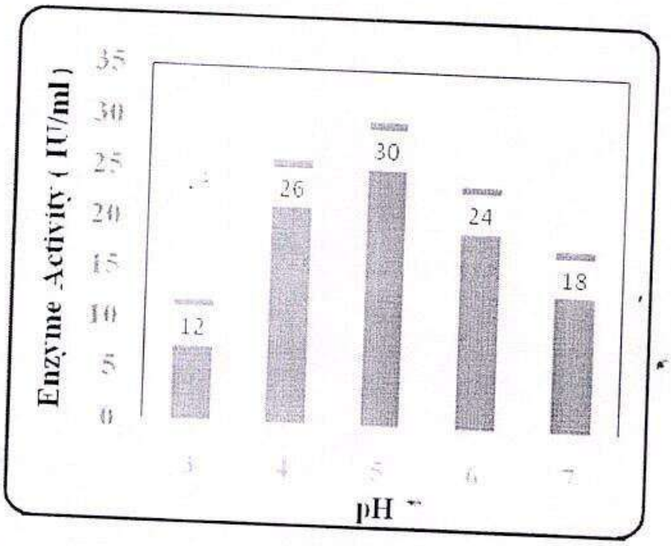


Fig.5 Effect of carbon sources on the invertase production using *A. niger*

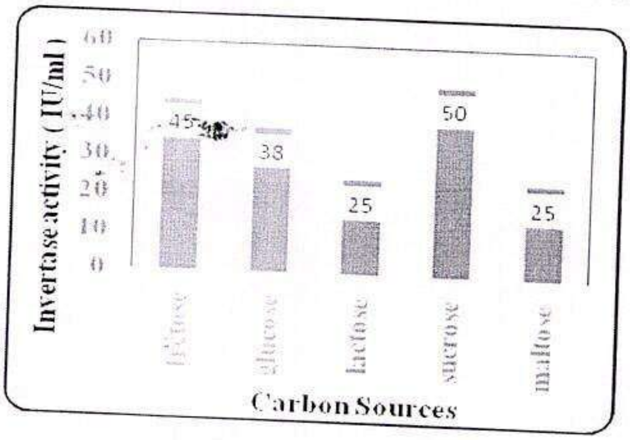


Fig.6 Effect of nitrogen sources on the invertase production using *A. niger*

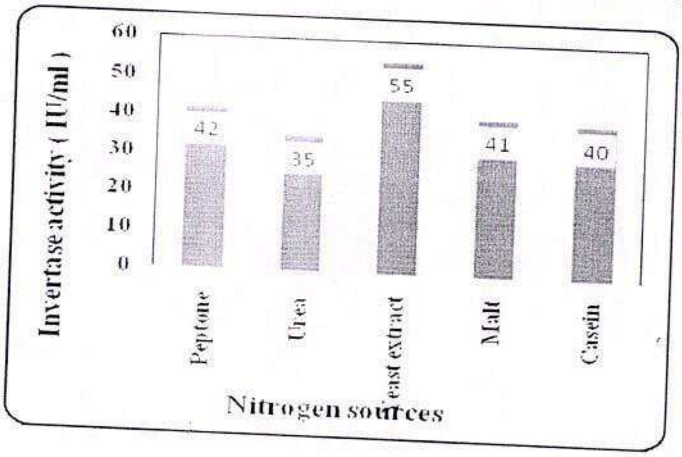
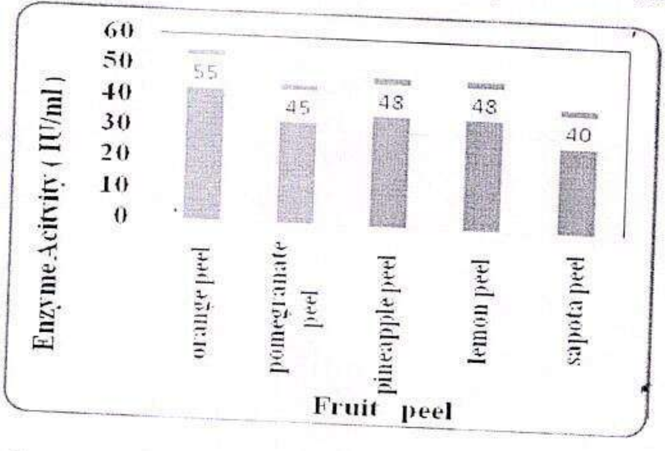


Fig.7 Effect of various substrates on the invertase production using *A. niger*



The maximum invertase production was shown using yeast extract as nitrogen source (Fig. 4 and Table 2). Similar results that yeast extract was the best nitrogen source for invertase from a cladosporium cladosprioides in SmF (Uma *et al.,* 2012). Wherer as some reported that the peptone + yeast extract was significant in invertse production by

Saccharomyces cerevisie (Kamble and Borate 2012) (Fig. 5–7).

Effect of substrates on enzyme activity

Different agricultural byproducts such as orange peel pomegranate peel sapota peel, pineapple peel and lemon peel were tested for production of invertase enzyme. The maximum invertase production was recorded using orange peel (55 IU/ml) supplemented medium.in our investigation 5 agricultural residues such as peels of orange, Pomegranate, Pineapple, Lemon and Sapota have been used as substrate maximum invertse production (IU/ML) WAS Recorded with orange peel similar results as orange peel as the best substrate for the maximum production of invertse was observed using *Saccharomyses cervisivae* (Pandey *et al.*, 2001, Alegre *et al.*, 2009, and Shankar *et al.*, 2013) and also using *A. niger* (Asha *et al.*, 2016). Some investigated as the best agro residue as carbon source using *A. niger* Vijaykumar *et al.*, 2016).

In conclusion, the investigation suggests that the orange peel could be an alternative and promising substrate for the production of invertase by *A. niger*.

The solid state fermentation (SSF) is considered as most eco-friendly process. In addition, this work will act as first time information to researchers who want to explore the possibilities of converting waste to wealth and value addition. Since orange peel utilized within process are readily accessible agricultural (horticultural) waste with little or no cost and also contain an appreciable amount of invertase. These agricultural wastes are regarded as low cost substrate using *A. niger*. This work will not only lead to the reduction in the production cost of invertase but also help to decrease the pollution load resulting from these agricultural wastes

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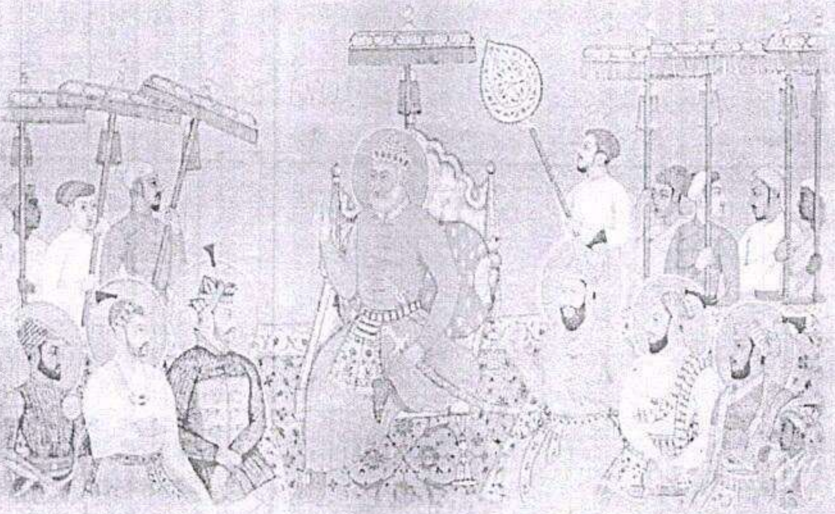

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Political, Economic And Cultural Conditions Of Vijayanagara Empire

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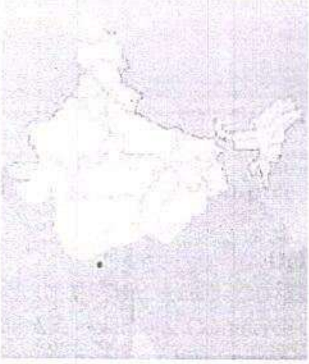
Introduction:

The Vijayanagara Empire, an important South Indian empire was founded by Harihara Raya I and his brother Bukka Raya I. The capital of the empire was Vijayanagara, present days Hampi in Karnataka. The empire ruled from 1336 AD to 1646 AD although the power of the empire declined after the Battle of Talikota in 1565 AD. Vijayanagara Empire was ruled by maily four important dynasties. They were as follows;

- SANGAMA DYNASTY
- SALUVA DYNASTY
- TULUVA DYNASTY
- ARAVINDU DYNASTY



VIJAYANAGARA EMPIRE

1. Sangama Dynasty: It was the first dynasty of Vijayanagara Empire and Harihara Raya I(1336-1356 AD) was the first ruler of the dynasty. Some of the rulers of the dynasty were: Bukka Raya, Virupaksha Raya, Deva Raya, Ramachandra Raya, Mallikarjuna Raya and Praudha Raya.
2. Saluva Dynasty: It was the first dynasty of Vijayanagara Empire andNarasimhadeva Raya (1485 AD to 1491 AD) first ruler of Saluva Dynasty of Vijayanagara Empire. He was succeeded by his son Thimma Bhupala. Narasimha Raya II was the last ruler of Saluva Dynasty succeeded his father Thimma Bhupala.
3. Tuluva Dynasty: It was the third dynasty of Vijayanagara Empire. The rulers of Tuluva Dynasty were: Narasa Nayaka, Viranarasimha Raya, krishnadevaraya, Achyutadeva Raya and Sadasiva Raya. Krishnadeva raya was a very powerful ruler of Vijayanagara Empire. It is considered that during his reign the empire reached its zenith. He ruled the empire from 1509 AD to 1529 AD. (For more detail about krishnadevaraya, see the individual section.)
4. Aravidu Dynasty: The fourth and last dynasty of Vijayanagara Empire was Aravidu Dynasty. After the Battle of Talikota the empire started to decline and Muslim states of Bijapur became prominent.

Sources: The history of Vijayanagar Empire constitutes an important chapter in the history of India. Four dynasties – Sangama, Saluva, Tuluva and Aravidu – ruled Vijayanagar from A.D. 1336 to 1672. The sources for the study of Vijayanagar are varied such as literary, archaeological and numismatics. Krishnadevaraya's Amukthamalyada, Gangadevi's Maduravijayam and Allasani Peddanna's Manucharitam are some of the indigenous literature of this period.

Many foreign travelers visited the Vijayanagar Empire and their accounts are also valuable. The Moroccan traveler, Ibn Battuta, Venetian traveler Nicolo de Conti, Persian traveler Abdur Razzak and the Portuguese traveler Domingo Paes were among them who left valuable accounts on the socio-economic conditions of theVijayanagar Empire.

The copper plate inscriptions such as the Srirangam copper plates of Devaraya II provide the genealogy and achievements of Vijayanagar rulers. The Hampi ruins and other monuments of Vijayanagar provide information on the cultural contributions of the Vijayanagar rulers. The numerous coins issued by the Vijayanagar rulers contain figures and legends explaining their tittles and achievements.

Political Conditions:

Socio-political condition under Vijayanagar kingdom was quite troubled till the advent of the Nayakas. In fact the situation in which the Vijayanagar rulers took over administration of the state itself had already taken a bad turn. The establishment of the Vijayanagar Empire is traced back to the first half of the fourteenth century, but its rule extended to Tamil Nadu only towards the end of the fourteenth century, after Kumara Kampanna's campaigns in Kanchipuram and Madurai. The Chola rule in Tamil Nadu ended in the latter half of the thirteenth century, and the period roughly extending from A.D. 1250 to 1400 brought considerable hardship to the people. They experienced the effects of war among and rule by various dynasties such as the Pandyas, the Hoysalas and the Kakatiya dynasty, and also the invading armies of the Delhi Sultanate from the north and the intrusion of Vijayanagar warriors into Tamil Nadu.

Conditions in the fifteenth century proved to be no less harsh and exploitative as evidenced by the heavy and arbitrary burden of taxes imposed by the invading warriors. There are plenty of historical records of the running away of cultivators and artisans during this period. The Orissan invasion of Tamil Nadu also took place in the fifteenth century, and an officer named Annamarasar had to be sent by the Vijayanagar king to save the people from the distressed conditions caused by the invasion.

There was yet another factor which led to additional burdens during the fourteenth and fifteenth centuries. This was the class struggle which assumed a new dimension in the thirteenth century. The confrontation was between two agrarian classes, landholders on the one hand, and tenants or landless cultivators on the other. The landlord villages became conspicuous after A.D. 1250 and created different class relations within the agrarian order. The poorer peasants, along with artisans and merchants, suffered under the oppression of the well-to-do peasants who became landlords. This confrontation was made even more acute by the extortionate demands of the Vijayanagar invaders during the fourteenth and fifteenth centuries. This is attested to by the open revolt of the Idangai people against the landlords (Kaniyalar) and Vijayanagar officers (Irajagarattar) during the first half of the fifteenth century in the South Arcot, Tiruchirapalli and Thanjavur districts.

It seems, however, that the growth of the Nayakas in the latter half of the fifteenth century had a stabilizing effect on society. For the three northern districts of Tamil Nadu, Chingleput, North Arcot and South Arcot, there are a good number of Vijayanagar inscriptions, and a smaller number for the middle and southern districts. The sixteenth-century inscriptions of these northern districts contain the names of various Nayakas, many of them appearing only once or twice, but others rather frequently. In North Arcot, Padaividu was the centre of the Vijayanagar Nayakas who came from Karnataka, and in South Arcot, Gingee is supposed to have been a centre for the Nayakas who later came to be known as Gingee Nayakas, although the Uchavadi or administrative centre for the South Arcot region was located in Valudilampattu in CuddaloreTaluk.

Social And Economic Conditions:

Allasani Peddanna in his Manucharitam refers the existence of four castes – Brahmins, Kshatriyas, Vaisyas and Sudras - in the Vijayanagar society. Foreign travelers left vivid accounts on the splendour of buildings and luxurious social life in the city of Vijayanagar. Silk and cotton clothes were mainly used for dress. Perfumes, flowers and ornaments were used by the people. Paes mentions of the beautiful houses of the rich and the large number of their household servants. Nicolo Conti refers to the prevalence of slavery. Dancing, music, wrestling, gambling and cock-fighting were some of the amusements. The Sangama rulers were chiefly Saivaites and Virupaksha was their family deity. But other dynasties were Vaishnavites. Srivaishnavism of Ramanuja was very popular. But all kings were tolerant towards other religions. Borbosa referred to the religious freedom enjoyed by everyone. Muslims were employed in the administration and they were freely allowed to build mosques and worship. A large number of temples were built during this period and numerous festivals were celebrated. The Epics and the Puranas were popular among the masses.

The position of women had not improved. However, some of them were learned. Gangadevi, wife of Kumarakampana authored the famous work Maduravijayam. Hannamma and Thirumalamma were famous poets of this period. According to Nuniz, a large number of women were employed in royal palaces as dancers, domestic servants and palanquin bearers. The attachment of dancing girls to temples was in practice. Paes refers to the flourishing devadasi system. Polygamy was prevalent among the royal families. Sati was honoured and Nuniz gives a description of it.

Economic Condition:

According to the accounts of the foreign travelers, the Vijayanagar Empire was one of the wealthiest parts of the world at that time. Agriculture continued to be the chief occupation of the people. The Vijayanagar rulers provided a stimulus to its further growth by providing irrigation facilities. New tanks were built and dams were constructed across the rivers like Tunghabadra. Nuniz refers to the excavation of canals.

There were numerous industries and they were organized into guilds. Metal workers and other craftsmen flourished during this period. Diamond mines were located in Kurnool and Anantapur district. Vijayanagar was also a great centre of trade. The chief gold coin was the varaha but weights and measures varied from place to place. Inland, coastal and overseas trade led to the general prosperity. There were a number of seaports on the Malabar coast, the chief being Cannanore. Commercial contacts with Arabia, Persia, South Africa and Portugal on the west and with Burma, Malay peninsula and China on the east flourished. The chief items of exports were cotton and silk clothes, spices, rice, iron, saltpeter and sugar. The imports consisted of horses, pearls, copper, coral, mercury, China silk and velvet clothes. The art of shipbuilding had developed.

Cultural Contributions:

The temple building activity further gained momentum during the Vijayanagar rule. The chief characteristics of the Vijayanagara architecture were the construction of tall Raya Gopurams or gateways and the Kalyanamandapam with carved pillars in the temple premises. The sculptures on the pillars were carved with distinctive features. The horse was the most common animal found in these pillars. Large mandapams contain one hundred pillars as well as one thousand pillars in some big temples. These mandapams were used for seating the deity on festival occasions. Also, many Amman shrines were added to the already existing temples during this period.

The most important temples of the Vijayanagar style were found in the Hampi ruins or the city of Vijayanagar. Vittalaswamy and Hazara Ramaswamy temples were the best examples of this style.

The Varadharaja and Ekamparanatha temples at Kanchipuram stand as examples for the magnificence of the Vijayanagara style of temple architecture. The RayaGopurams at Thiruvannamalai and Chidambaram speak the glorious epoch of Vijayanagar. They were continued by the Nayak rulers in the later period. The metal images of Krishna Deva Raya and his queens at Tirupati are examples for casting of metal images. Music and dancing were also patronized by the rulers of Vijayanagar.

Different languages such as Sanskrit, Telugu, Kannada and Tamil flourished in the regions. There was a great development in Sanskrit and Telugu literature. The peak of literary achievement was reached during the reign of Krishna Deva Raya. He himself was a scholar in Sanskrit and Telugu. His famous court poet Allasani Peddanna was distinguished in Telugu literature. Thus the cultural contributions of the Vijayanagar rulers were many-sided and remarkable.

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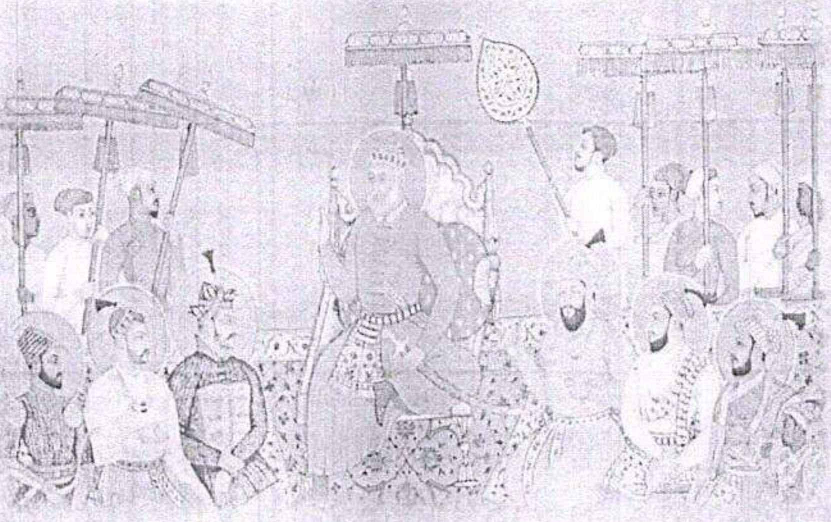

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Socio-Economic, Religious & Cultural Conditions Of Ancient Period

Prof. Vaijinath Chickbase
Head of the Department & Arts Faculty Dean,
Karanatak Arts Science & Commerce College, Bidar

Introduction

In the previous unit we have already discussed about the emergence of the Guptas in Indian history. The Guptas started a new epoch in the history of ancient India. This era is also termed as golden age of ancient Indian history. This unit will introduce you to the socio-economic condition and religion and art of the Guptas.

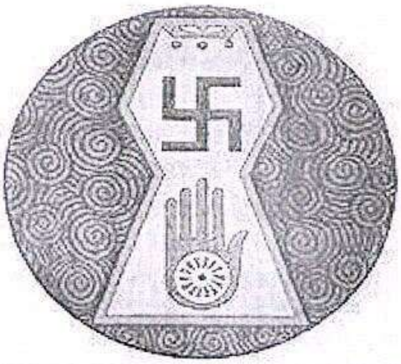
Social and Religious Conditions of Vedic Age

The Vedic age began with the coming of the Indo-Aryan speaking people and ended in about seventh century B.C. Initially, this phase marked a reversal in some respects. It marked the end of city life. It reverted to a pastoral economy and the tribal system of political organization. It saw the beginning of the spread of agriculture throughout the country with the knowledge and use of iron technology. It thus laid the foundations of a civilization in all parts of the country.

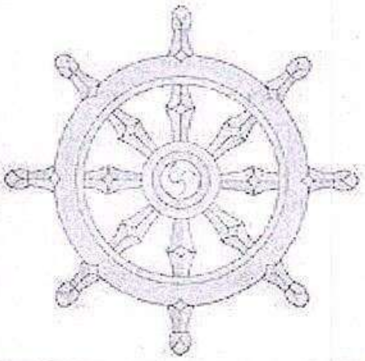
The culture that began to emerge during this phase was the result of the intermixing of the Indo-Aryans with the pre-existing inhabitants of India. Some elements of the culture of this period have survived over a period of 3000 years and continue to be a part of Indian culture today. The period from about the sixth century B.C. to about 200 B.C., is marked by far-reaching changes in almost every aspect of life in India. This period saw the spread of agriculture over large parts of the country, the rise of cities and the formation of states. The period also saw the rise and decline of the first all-India empire in Indian history.

This period is important not only for political unity but also for cultural unity. Two major religions—Jainism and Buddhism—which arose in the sixth century B.C. left a lasting influence on Indian life and culture. These religions also influenced religious beliefs and practices of Hinduism. As it developed Hinduism, it included many Vedic beliefs and practices but had many other features which distinguished it from the religion of the Vedas. The Varna system as the caste system now became well-established and gradually became the dominant form of social organization throughout the country.

- **Religions Harsha followed a policy of religious toleration. Different religious flourished during this period :**



Symbol of Jainism



Symbol of Buddhism

- **Vedic religion**

Vedic or Brahmanical religion had made a great progress by this time and Buddhism was slowly and gradually moving towards its decline. Vedic religion which made progress during Gupta period further progressed during Harsha's reign. Brahmanism had divided into many philosophical schools and ascetic orders. The followers of Brahman religion worshipped cows and there were many categories of sadhu. Hiuen Tsang has also described different types of sadhu, some of them remained naked, some wore feathers of peacock, some covered their bodies with grass and so on. Some followers of Brahmanism believed in superstitious spirits etc. In the field of philosophy, Sankhya philosophy was progressing and attracting a large number of followers. Regarding multiplicity of schools and ascetic orders, Bana, in this 'Kadambari'. has mentioned Mukhari, Shaiva, Parashari, Bhagavat, Kapila, Kanada, Upanishads, Panchratrick etc.

Buddhism:

Buddhism was on the decline during Harsha's period. Besides being divided into two main sects as for example Hinayanaism and Mahayanasim. There was as many as 18 different sects among the Buddhists. Mahayanism was more prominent. During his visit Hiuen Tsang saw as many as 5,000 monasteries accommodation. The most important Buddhist monastery was that of Nalanda.

Jainism:

During the Harsha's period, Jain religion was prevalent at certain places in the northern India. Vaisali and Pundavardhan were the strong holds of Jainism. Jain religion was divided into two main sects such as Svaitamber and Digambar. However, Digambar sect was more prominent and attracted larger number of followers.

- **Social Conditions Under The Guptas**

The Puranas, Sastras, the Niti Sastras of Narada, the Dramas of Kalidasa etc supply us with a good deal of information regarding the social life of the Gupta period. Many interesting features, about the social life are also found referred to in the contemporary inscriptions. Fahien, the famous Chinese Pilgrim has also made some observations about the society as it existed in India towards the opening of the 5th century A.D.

Division Of Society :

During the Gupta period society was divided into four castes –brahmana, kshatriya, vaishya and sudra. Each one of these comprised a major caste or varna and had specific duties assigned to them. Fa-hien's account about the plight of sudras proves the prevalence of caste system and caste prejudices in the Indian society during the Gupta period. The reference to the people of various castes in the epigraphs and literary works also point towards the existence of caste system during this period.

The brahmanas were primarily concerned with the study and teachings of Vedas and other scriptures as also the performance of sacrifices and other religious practices. The kshatriyas came next to brahmanas in status and position in the society. Khatriyas, being the ruling class, enjoyed a very high status in the society. The khsatriyas as well as the vaishyas enjoyed with the brahmanas the status of Dvijati or twice born. The Vaisyas because of their immense wealth were also shown due regard. Sudras formed the lower rank of the cast system. They were forced to serve the other three classes.

Besides the division of the society into four major castes, the contemporary inscriptions and literature bear ample testimony to the existence of sub castes. However, there were no rigid rules in respect of either inter-caste marriage or inter-dining of the professions.

Slavery:

Although there was no institutionalized slave system in India, sources refer to slaves. There were various categories of slaves during the Gupta age. Prisoners of war were often reduced to the status of slaves. Drunkards, gamblers etc who were unable to pay off their debts to their creditors were often compelled to sell themselves as slaves. Persons doing manual works in the royal household too were termed as slaves. But the slave system under the imperial Gupta monarchs differed from the slave system in Western countries. In India, any slave could get emancipation after fulfilling certain conditions. The slaves could regain their liberty after the payment of their dues either by themselves or their relatives and friends. It is evident from the contemporary records that even prisoners of war could be free if they could provide a substitute for themselves. A slave who saved the life of his master did not only become free but also become entitled to a equal son's share of his master's property

Position Of Women:

The position of women in Hindu society has been different from age to age. In the Vedic age she enjoyed honour and respect in society. In the Gupta age, the Puranas did their best to improve the lot of the women in some respect of life, but not much could be done due to some prejudice against women.

According to Manavadharmasastra women should be under the protection of their father, husbands or eldest son as the society was distinctly patriarchal. Yet, woman like Prabhavati Gupta, the daughter of Chandra Gupta II was regent in the Vakataka kingdom, following the death of her husband.

Many writers have stated the usual 8 forms of marriage for a woman. There are Brahma, Daiva, Arsha, Prajapatya, Asura, Gandharva, Rakshasa and Paisacha.The first four forms are approved, as they involve parental consent although in the Daiva and Arsa forms a bride price is demanded. The last four forms are not prescribed although the Asura and Gandhara forms – marriage by abduction of the bride, sometimes with her consent and marriage by mutual consent, without the necessity of parental approval, respectively.

The practice of sati was in vogue during the Gupta rule. Vatsayana and Kalidasa refer to it. Some instances of Sati are found in the time of the Gupta period. From the Mandasor stone inscription of Kumara Gupta we come to know that practice of sati was prevalent during the Gupta age.

Polygamy was very popular during the Gupta age. The kings and feudatory lords often had more than one wife. The practice was not confined to kings, but extended also to other people. A woman suffered the misfortune of getting a co-wife if she was stupid, or barren, or she repeatedly bore daughters. Inscription refer to Kubernaga and Dhrubaswamini as the queens of Chandra Gupta II.

Food , Dress And Amusment

Food:

According to the description of Kalidasa, the food of the people of Gupta period, was both delicious and nutritious. Barley, Wheat and Rice were their staple food. The cucumber, onion, garlic, pumpkin, gourd etc. were used as vegetables. We have ample references to edible spices, oil-crops and medicinal herbs. Mustard seed tamarind, cardamoms, cloves, betel nut, ginger, turmeric and saffron were used for different purposes. Moreover the forests and gardens yielded a large variety of valuable fruits such as mango, orange, jackfruit, pomegranate, grapes, banana, coconut etc. Sugar was manufactured from sugarcane. Various kinds of sweetmeats were prepared out of milk and sugar. Honey was another item of food, which was also used in the reception of a guest and at other festive rites.

Dress:

Suiting all occasions and weather men and women used various kinds of dresses. Kalidasa refers to hunting dress. Man put on dhoti, turban and a scarf. They were generally made of cotton, but their wedding dresses were of silk. Women used sari and shawl. Clothes were of various colours such as white, red, blue, saffron, multi coloured and black. Both men and women of this period commonly used different kinds of jewellery, such as ornaments for head and hair, ears, neck, arm, waist, feet and fingers. A large variety of jewellery used by men and women are seen from the sculptures and the Ajanta paintings.

Amusement and Sports:

Kalidasa has vividly described the high standard of music both in theory and practice. Music, dancing and acting were quite popular in the Gupta society. The spring festival and another popular amusement in some festivity was the sprinkling of coloured water. Dice was another popular game. Hunting was another pastime. Elephant riding were favourite outdoor sports of the kings

- **Economic Condition Under The Guptas**

The establishment of the political unity by the Gupta monarchs coupled with an efficient and benevolent government provided a fruitful soil for the development of trade industry and agriculture which helped to build the economic conditions of the country on a sound footing

Agriculture:

Agriculture was, as in the past, still the mainstay of the economic life of the majority of the people during the Gupta period. There was an increase in the demand for more and more land for cultivation purpose as is evidenced from the Bengal land grants and other sources. Since the revenue from land was still the main source of the income of the state, the Gupta monarchs took special pains to promote the interests of the cultivators and increase the produce of the soil. Attempts were made to expand agriculture. Wastelands were brought under cultivation through various means such as the digging of tanks, wells, cutting of canals ect. The establishment of a large number of irrigation works gave a further impetus to the growth of agriculture even in the dry lands. The Junagarh Rock Inscription refers to the repairing of the dam of the Sudarsan, an artificial lake, by Skanagupta's governor Parnadatta.

The scientists of the age had laid down guide-lines for the development of agriculture along scientific lines. In this respect the Brihat Samhita of Varahamihira is specially noteworthy. Rice, barley and wheat continued to be the principal crops. Different varieties of vegetables, peas, beans and many more were also grown. Cultivation of oil-seeds was done on an extensive scale. A large number of fruit trees, Indian and foreign, were also grown.

Inscriptions or other records of the Gupta period no where provide any clue to the existence of anything like the zamindari system of modern times. However, this period witnessed the inauguration of a type of feudal economy as the state gradually granted away different rights over the land to Brahmanas and temples.

Keeping in view the importance of agriculture, the state laid down rules and regulations to protect the interests of the agriculturists. Rules were also been prescribed to safeguard the interests of agricultural labourers and land- holders.

The age of the Imperial Guptas was an age of great religious activity. It was particularly remarkable for new advancement made in the field of Hindu revival. Much of the progress made during the Gupta period in the sphere of Hindu revivalism was due to the patronage extended by the Gupta monarchs most of whom were followers of the Brahmonical God Vishnu.

Hinduism:

Incarnations of Vishnu also became popular during this period. Samudragupta was a devout worshipper of Vishnu. Garuda, the vehicle of Vishnu was the emblem of the family. There were coins, which were struck with Garuda standard by him. It is true that the word Bhagavat, no doubt, implied Vishnu worshippers in general but to a particular sect of the Vaishnavas. Chandragupta II Vikramaditya became a more influential advocate of the Bhagavat form of Vaishnavism than his father. He styled himself with the title of Parambhagavat. In the Mathura and Gadhwa inscriptions he is called by these titles. The Udayagiri Cave inscription dated 401-402 AD reveals that Vishnudeva, a subordinate of the King was a Bhagavat. His name shows that he was a devotee of Vishnu.

Like Vaishnavism, the followers of Saivism regard Siva as the highest god. Although the Gupta rulers were devotees of Vishnu, they extended their patronage to other religious sects. Some of the Gupta rulers and their chiefs were the worshippers of Siva.

Sun God was also worshiped during the Gupta period. The Mandasor inscription dated 436 AD of the time of Kumaragupta records that a guild of silk weavers built a temple for Sun. Mihirakula, the Huna Chief, was a devout worshipper of Surya. He built a Sun Temple on the Gopa Mountain to increase his religious merit. There were other temples at Mandasor, Gwalior, Indore and Asramaka, dedicated to the sun God Surya and built during the Gupta rule. The images of Surya have been found in various parts of North India, including Assam.

Worship of Shakti was also popular. She is known by various names such as Uma, Parvati, Durga, Kali, Maheswari etc. In the Markandeya Purana the exploits as the destroyer of demons are recorded. With the passage of time Shakti became associated with Siva and became his consort. A feudal lord under Chandragupta II dug a cave near Sanchi where an image of Mahishamardini, a form of Shakti, was established. Shakti worship in India can be traced to the worship of the Mother Goddess of the Harappan people.

Jainism:

In addition to the popularity of various cults and creeds of Hinduism Jainism had many adherents. Not only Jain philosophy but also Jain religion was enriched. A religious council at Valabhi was called in 453 AD. Many Jain temples were built during the Gupta period. During the time of Skandagupta idols of 5 Tirthankaras were established a Kahaum in Gorakhpur district. Fa-hien records that Jain mode of worhip in their Jain temples were expensive. The grand procession of images was also a costly affair and a popular form of worship of the Jaina deities.

Buddhism:

Buddhism flourished during this age. Paharpur, Ajanta, Nagarjunakonda, Kashmir, Afghanistan and Punjab were the strong holds of Buddhism. Mathura, Kosambi, Kasi and Sarnath were the important centres of Buddhism. The Buddhist Stupas and Viharas in Andhra, Ajanta and Ellora were very famous. The University of Nalanda, the seat of Buddhist studies attracted students from various foreign countries. Its intellectual and moral standard won the admiration of all. Many Gupta rulers like Narasimhagupta, Buddhagupta were ardent followers of Buddhism according to the testimony of Hiuen Tsang

Tolerance:

Samudragupta, who was an ardent Vaishnava, had Vasubandhu, a Buddhist of the Mahayana School as one of his advisors. Kumaragupta was a patron of the Buddhist University at Nalanda. The kings favoured Vaishnavism, Saivism and Buddhism. The Gupta rulers are not intolerant towards other religion.

Conclusion:

The Siege of Bijapur began in March 1685 and ended in September 1686 with a Mughal victory. The siege began when the Mughal Emperor Aurangzeb dispatched his son Muhammad Azam Shah with a force of nearly 50,000 men to capture Bijapur Fort and defeat Sikandar Adil Shah, the then ruler of Bijapur who refused to be a vassal of the Mughal Empire. The Siege of Bijapur was among the longest military engagements by the Mughals, lasting more than 15 months until the Mughal Emperor Aurangzeb personally arrived to organize a victory.

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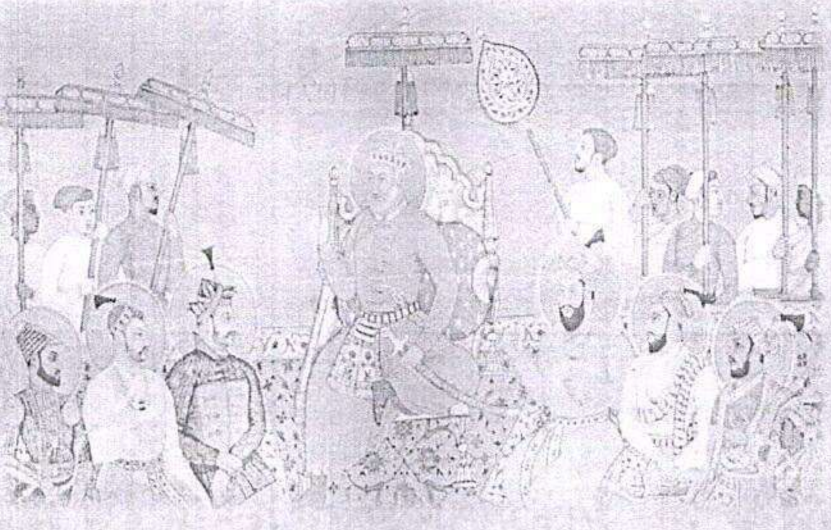

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ಉಪನ್ಯಾಸಕಿ (ಇತಿಹಾಸ ವಿಭಾಗ)
ಕರ್ನಾಟಕ ಕಲಾ, ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾ ವಿದ್ಯಾಲಯ ಬೀದರ

ಮಧ್ಯಕಾಲೀನ ಯುಗದ ಸಮಾಜವನ್ನು ವಿಶಾಲವಾಗಿ ಹಿಂದೂಗಳು ಮತ್ತು ಮುಸ್ಲಿಮರು ಎಂದು ವಿಭಜಿಸಲಾಗಿತ್ತು. ಅಷ್ಟೇ ಅಲ್ಲದೇ ಜೈನರು, ಬೌದ್ಧರು & ಸಿಖ್ಖರು ಸೇರಿದ್ದರು ಆ ಸಮಾಜದಲ್ಲಿ ಹಿಂದೂ ಸಮಾಜದ ಮೇಲ್ವರ್ಗದವರು ಬ್ರಾಹ್ಮಣರಾಗಿದ್ದು, ಅಂತರ್ಜಾತಿ ವಿವಾಹ ಅಸ್ತಿತ್ವದಲ್ಲಿರಲಿಲ್ಲ. ಅಲ್ಲದೇ ಮಧ್ಯಕಾಲೀನ ಸಮಾಜದಲ್ಲಿ ಇನ್ನೂ ಅನೇಕ ಮಿಶ್ರವರ್ಗಗಳು, ಬೇರೆ ಬೇರೆ ಜಾತಿಗಳು & ಉಪಜಾತಿಗಳು ಇದ್ದವು ಮೇಲ್ವರ್ಗದ ಹಿಂದುಗಳು ಹೆಚ್ಚು ಸಂಪ್ರದಾಯವಾದಿಗಳಾಗಿದ್ದರು.

ಮಧ್ಯಕಾಲೀನ ಯುಗದ ಸಮಾಜದಲ್ಲಿನ ಮುಸ್ಲಿಮರನ್ನು ಎರಡು ಪ್ರಮುಖ ವಿಭಾಗಗಳಾಗಿ ವಿಂಗಡಿಸಲಾಗಿದೆ ಅವುಗಳೆಂದರೆ,

☐ ಅರೇಬಿಯಾ, ಪರ್ಷಿಯಾ, ಅಫಘಾನಿಸ್ತಾನ್, ಅಬಿಸ್ಸಿಯಾ ಮುಂತಾದ ರಾಷ್ಟ್ರಗಳಿಂದ ವ್ಯಾಪಾರ, ವಾಣಿಜ್ಯ ಅಥವಾ ಉದ್ಯೋಗಕ್ಕಾಗಿ ಬಂದಂಥವರು ಒಂದು ಮುಸ್ಲಿಂ ವರ್ಗ.

☐ ಸ್ಥಳೀಯಹಿಂದೂಜನಸಂಖ್ಯೆಯಿಂದ
ಮತಾಂತರಗೊಂಡವರುಮತ್ತುಅವರ
ವಂಶಸ್ಥರ ಮತ್ತೊಂದು ಮುಸ್ಲಿಂ ವರ್ಗ.

ಭಾರತವು ವಿದೇಶ ವ್ಯಾಪಾರಿಗಳಿಗೆ ಮತ್ತು ಪ್ರಯಾಣಿಕರಿಗೆ ಮುಕ್ತವಾಗಿದ್ದರಿಂದ, ಯೂರೋಪಿನ ವಿವಿಧ ರಾಷ್ಟ್ರಗಳಿಂದ ಬಂದಂಥ ಪೋರ್ಚುಗೀಸರು, ಬ್ರಿಟಿಷರು, ಪಾರ್ಸಿಗಳು & ಚೀನಿಯರು ಮುಂತಾದ ವಿದೇಶಿಗರು ಕೂಡ ಮಧ್ಯಕಾಲೀನ ಯುಗದ ಸಮಾಜದಲ್ಲಿರುವುದು

ಕಾಣಬಹುದು. ಮಧ್ಯಕಾಲೀನ ಯುಗದ ಸಮಾಜದ ಇತಿಹಾಸವು ಹೆಚ್ಚಾಗಿ ರಾಜರು ಚಕ್ರವರ್ತಿಗಳ ಯುದ್ಧದ ಕಥೆಯಿಂದ ಆಕ್ರಮಿಸಲ್ಪಟ್ಟಿದೆ, ಅಬುಲಫಜಲ್ ಮತ್ತು ಇತರ ಯೂರೋಪಿನ ಪ್ರಯಾಣಿಕರ & ಬರಹಗಾರರ ಉಲ್ಲೇಖದಂತೆ ಮೊದಲಅವಧಿಯಲ್ಲಿ ಸಮಾಜವು ಊಳಿಗಮಾನ್ಯ ಸ್ವರೂಪದಲ್ಲಿದ್ದು, ಶ್ರೀಮಂತರು ಮತ್ತು ರಾಜ್ಯದ ಅಧಿಕಾರಿಗಳು ಸಮಾಜದಲ್ಲಿ ಉನ್ನತ ಗೌರವಕ್ಕೆ ಅರ್ಹರಾಗಿದ್ದರು. ಹೀಗೆ ಸಮಾಜದಲ್ಲಿ ಉನ್ನತ ಸ್ಥಾನ ಮತ್ತು ಜೀವನ ಮಟ್ಟ ಹೊಂದಿರುವ ರಾಜರು, ಚಕ್ರವರ್ತಿಗಳು, ಗಣ್ಯರು, ಶ್ರೀಮಂತರು ಐಷಾರಾಮಿ ಜೀವನ ನಡೆಸುತ್ತಿದ್ದು, ಪರಸ್ಪರ ಅಸೂಯೆಯಿಂದ ಬಾಳುತ್ತಿದ್ದರು.

ಮಧ್ಯಕಾಲದ ಸಮಾಜದಲ್ಲಿ ಮಧ್ಯಮವರ್ಗದವರ ಜೀವನ ಮಟ್ಟವು ಚಿಕ್ಕದಾಗಿದ್ದು, ಗಣ್ಯರು & ರಾಜ್ಯದ ಅಧಿಕಾರಿಗಳಿಗಿಂತ ತೀರಾ ಕೆಳಮಟ್ಟದ್ದಾಗಿತ್ತು. ಆದರೆ ಈ ಕಾಲದಲ್ಲಿ ಭಾರತದ ಪಶ್ಚಿಮ ಕರಾವಳಿಯ ವ್ಯಾಪಾರಿಗಳು ಅಸಾಧರಣವಾಗಿ ಶ್ರೀಮಂತರಾಗಿದ್ದು, ಅವರ ಜೀವನ ಮಟ್ಟವು ಉತ್ತಮವಾಗಿತ್ತು. ಶ್ರೀಮಂತ & ಮಧ್ಯಮವರ್ಗಕ್ಕೆ ಹೋಲಿಸಿದರೆ, ಸಾಮಾನ್ಯ ಜನರ ಸ್ಥಿತಿ ಅಂತ್ಯಂತ ಶೋಚನೀಯವಾಗಿತ್ತು. ಮೊಘಲರ ಆಳ್ವಿಕೆಯಲ್ಲಿ 7 ವರ್ಷಗಳ ಕಾಲ ಭಾರತದಲ್ಲಿ ವಾಸವಾಗಿದ್ದ "ಪೈಲಾರ್ಟ್" ಎಂಬ ವ್ಯಾಪಾರಿಯು 'ಕಾರ್ಮಿಕರು, ದಿನಸೀಗಾರರು & ಸೇವಕ ವರ್ಗದವರು ಸಮಾಜದ ಈ ವಿಭಾಗಗಳು, ನಾಮಮಾತ್ರ ಸ್ವತಂತ್ರರಾಗಿದ್ದು, ವಾಸ್ತವದೇ ಅವರ ಸ್ಥಿತಿ ಗುಲಾಮರ ಸ್ಥಿತಿಯಾಗಿತ್ತು.' ಎಂದಿದ್ದಾರೆ. ಸಾಮಾನ್ಯ ಜನರ ಮತ್ತು ರೈತರ ಮೇಲೆ ಹೆಚ್ಚಿನ ದಬ್ಬಾಳಿಕೆಯಿದ್ದು, ಅವರಿಂದ ಎಷ್ಟು ಸಾಧ್ಯವೊ!, ಅಷ್ಟು ಹಣವನ್ನು ಕಂದಾಯದ ನೆಪದಲ್ಲಿ ವಸೂಲಿ ಮಾಡುತ್ತಿದ್ದರು. ಮಧ್ಯಕಾಲಿನ ಭಾರತದ ಸಮಾಜದಲ್ಲಿ ಬಾಲ್ಯವಿವಾಹ, ಬಹುಪತ್ನಿತ್ವ, ವರದಕ್ಷಿಣೆ ವ್ಯವಸ್ಥೆ, ಹಾಸುಹೊಕ್ಕಾಗಿ ಹರಡಿತ್ತು.

ಮಧ್ಯಕಾಲಿನ ಭಾರತದ ಸಾಮಾಜದ ಅಕ್ಬರನ ಆಳ್ವಿಕೆಯು ಮಹತ್ವದಾಗಿದ್ದು, ಈತನ ಕಾಲದಲ್ಲಿ ಸ್ವಲ್ಪ ಮಟ್ಟಿಗೆ ಸಮಾಜದಲ್ಲಿ ಧಾರ್ಮಿಕ ಸಹಿಷ್ಣುತೆ, ಹಿಂದೂಗಳಿಗೆ ಗೌರವ, ಮತ್ತು ಆರ್ಥಿಕ ಸಮಾನತೆಯನ್ನು ಕಾಣಬಹುದಾಗಿದೆ. ಅಲ್ಲದೇ ಸಮಾಜದಲ್ಲಿನ ಗುಲಾಮರ ವ್ಯಾಪಾರವನ್ನು ತಡೆಯಲು

ಪ್ರಯತ್ನಿಸಿದ ಏಕೈಕ ಮಧ್ಯಕಾಲೀನ ಯುಗದ ಸುಲ್ತಾನ ಅಕ್ಬರ. ಈ ಸಮಾಜದ ಮೇಲ್ವರ್ಗದವರು ಉದ್ದನೇಯ ಕೋರ್ಟ & ಲಘುಪ್ಯಾಂಟ ಧರಿಸುತ್ತಿದ್ದು. ಅನೇಕರು ಸೊಂಟದ ಸುತ್ತಲೂ ರೇಷ್ಮೆ ಅಥವಾ ಹತ್ತಿ ಬಟ್ಟೆಯನ್ನು ಧರಿಸುತ್ತಿದ್ದರು. ಬಡ ಹಿಂದೂಗಳು ಧೋತಿಗಳನ್ನು ಧರಿಸಿದರೆ, ಬಡ ಮುಸ್ಲಿಂಮರು ಪೈಜಾಮ ಮತ್ತು ಉದ್ದನೇಯ ಅಂಗಿಯನ್ನು ಧರಿಸುತ್ತಿದ್ದರು. ಸುಗಂಧ ದ್ರವ್ಯ ಮತ್ತು ತೈಲಗಳನ್ನು ಹಿಂದೂ ಮತ್ತು ಮುಸ್ಲಿಂ ವರ್ಗದ ಸ್ತ್ರೀ ಪುರುಷರಿಬ್ಬರು ಬಳಸುತ್ತಿದ್ದರು. ಹಿಂದೂ ಮಹಿಳೆಯರು ಸೀರೆ ಧರಿಸಿದ್ದರೆ. ಮುಸ್ಲಿ ಮಹಿಳೆಯರು ಪೈಜಾಮ ಮತ್ತು ಉದ್ದನೇಯ ಅಂಗಿ ಧರಿಸುತ್ತಿದ್ದರು. ಹಾಗೂ ದ್ವೀದಳ ಧಾನ್ಯಗಳಿಂದ ತಯ್ಯಾರಿಸಿದ ಸಾಬೂನನ್ನು ಉಪಯೋಗಿಸುತ್ತಿದ್ದರು.

ಚದುರಂಗ. ಜೂಜು. ಬೇಟೆಮತ್ತು ಪೋಲೋ ಮುಂತಾದ ಆಟಗಳು ಉನ್ನತ ಶ್ರೇಣಿಯ ಜನರಲ್ಲಿ ಜನಪ್ರಿಯವಾಗಿದ್ದವು. ಕುಸ್ತಿ. ಬೇಟೆ ಆಡುವುದು. ಸಂಗೀತದ ಆಯೋಜನೆ ಆ ಕಾಲದ ಮನರಂಜನೆಗಳಾಗಿದ್ದವು. ಹಿಂದೂ ಹಬ್ಬಗಳಾದ ದಸರಾ ದೀಪಾವಳಿ. ಮುಸ್ಲಿಂ ಹಬ್ಬಗಳಾದ ರಂಜಾನ. ಈದ-ಮೀಲಾದ್ ಮುಂತ್ತಾದವು ಮಧ್ಯ ಯುಗದ ಸಮಾಜದಲ್ಲಿ ಆಚರಿಸುತ್ತಿದ್ದ ಪ್ರಮುಖ ಹಬ್ಬಗಳಾಗಿವೆ ಈ ಸಮಾಜದಲ್ಲಿ ಮಹಿಳೆಯರ ಸ್ಥಾನಮಾನವು ಅತ್ಯಂತ್ಯ ಕೀಳಮಟ್ಟದಲ್ಲಿದ್ದು. ಸಮಾಜದಲ್ಲಿ ಯಾವುದೇ ಸ್ಥಾನ ಮಾನ ಇರದೇ ಪರದಾ ವ್ಯವಸ್ಥೆ ಅಸ್ತಿತ್ವದಲ್ಲಿತ್ತು.

ಒಟ್ಟನಲ್ಲಿ ಮಧ್ಯಕಾಲೀನ ಯುಗದ ಭಾರತದ ಸಮಾಜವು ಮುಸ್ಲಿಂ ಪ್ರಧಾನ ಸಮಾಜವಾಗಿದ್ದು. ಹಿಂದೂಗಳಿಗೆ ಯಾವುದೇ ರಾಜಕೀಯ. ಸಾಮಾಜಿಕ ಸ್ಥಾನ ಮಾನಗಳಿರಲಿಲ್ಲ. ಶ್ರೀಮಂತರು ಶ್ರೀಮಂತರಾಗಿಯೇ ಬಡವರು ನಿರ್ಗತಿಕರಾಗಿಯೇ ಬದುಕುತ್ತಿದ್ದು. ಸ್ತ್ರೀಯರ ಮತ್ತು ಗಲಾಮರು ಸ್ಥಿತಿ ಚಿಂತಾಜನಕವಾಗಿತ್ತು. ಈ ಯುಗದ ಸಮಾಜದಲ್ಲಿ ಮುಸ್ಲಿಂ ಅರಸರ ಆಳ್ವಿಕೆ ಇದ್ದುದ್ದರಿಂದ ಹಿಂದೂಗಳು ಸ್ವತಂತ್ರ ಹರಣರಾಗಿ ಪರತಂತ್ರರಾಗಿ ಬದುಕುವಂತಾಗಿತ್ತು.

- ಆಧಾರ ಗ್ರಂಥಗಳು:-

1. ಡಾ: ಬಿ.ಪಿ. ಹೂಗಾರ-"ಮಧ್ಯಕಾಲೀನ ಭಾರತದ ಇತಿಹಾಸ".
2. ಡಾ: ಇಂದುಮತಿ ಪಾಟೀಲ-"ಮಧ್ಯಕಾಲೀನ ಭಾರತದ ಇತಿಹಾಸ".
3. ಡಾ: ಕೆ. ಸದಾಶಿವ -"ಮಧ್ಯಕಾಲೀನ ಭಾರತದ ಇತಿಹಾಸ".
4. ಫಾಲಾಕ್ಷ-"ಮಧ್ಯಕಾಲೀನ ಭಾರತದ ಇತಿಹಾಸ".

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Prof. Nanda Merwyn David
Prof. Jagadevappa Chakki
Prof. Gireesh Meeshi

“ಬಾಲಕಾಮಿಕತನ ತಡೆಗಟ್ಟುವ ವಿಧಾನಗಳು”

ಗಾಯಿತ್ರಿ ಆರ್. ನೆಲ್ಗೆ
Asst. Prof. HOD
Dept. of Sociology
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Bidar.

“ಇಂದಿನ ಮಕ್ಕಳೆ ನಾಳಿನ ಪ್ರಜೆಗಳು. ಈ ಮಕ್ಕಳೆ ಮುಂದಿನ ಭವ್ಯಭಾರತದ ನಿರ್ಮಾಣದರೂವಾರಿಗಳು ಹೌದು. ಈ ಮಕ್ಕಳಿಗೆ ಉತ್ತಮ ಆಹಾರ, ಶಿಕ್ಷಣ, ಆರೋಗ್ಯವನ್ನು ಒದಗಿಸಿಕೊಟ್ಟು ಸಧೃಢರನ್ನಾಗಿ ಬೆಳೆಸಿದಾಗ ಮಾತ್ರ ಇದು ಸಾಧ್ಯ. ಆದರೆ ಇಂದು ನಮ್ಮ ದೇಶದಲ್ಲಿ ಅದೆಷ್ಟೋ ಮಕ್ಕಳು ಮೂಲಸೌಕರ್ಯಗಳ ಕೊರತೆಯಿಂದಾಗಿ ಚಿಕ್ಕದಿನಿಂದಲೇ ದುಡಿಮೆಯಲಿ ತೊಡಗಿಸಿಕೊಳ್ಳುವುದನ್ನು ನಾವು ನೋಡುತ್ತಿದ್ದೇವೆ. ಚಿಕ್ಕಮಕ್ಕಳು ಬಾಲಕಾರ್ಮಿಕರಾಗಿ ದುಡಿಯುತ್ತಿರುವುದು ಒಂದು ದುರಂತವೆ ಎಂದು ಹೇಳಬಹುದು.

ಸಾಮಾನ್ಯವಾಗಿ ದುಡಿಯುವಂತಹ ಮಗುವನ್ನು ‘ಬಾಲ ಕಾರ್ಮಿಕ’ ಎಂದು ಕರೆಯುತ್ತೇವೆ. ನಮ್ಮ ದೇಶದ ಸಂವಿಧಾನದ 24 ವಿಧಿಯು ಹದಿನಾಲ್ಕು (14) ವರ್ಷಕ್ಕಿಂತ ಕಡಿಮೆ ವಯಸ್ಸಿನ ದುಡಿಯುವ ಮಕ್ಕಳನ್ನು ಬಾಲಕಾರ್ಮಿಕರೆಂದು ಸ್ಪಷ್ಟಪಡಿಸಿದೆ. ಇಂತಹ ಬಾಲಕಾರ್ಮಿಕರು ಭಾರತದೇಶದಲ್ಲಿ ಗಣನೀಯ ಸಂಖ್ಯೆಯಲ್ಲಿದ್ದಾರೆ. 2011 ರ ಜನಗಣತಿಯ ಪ್ರಕಾರ 5 ರಿಂದ 14 ವರ್ಷದ ಬಾಲಕಾರ್ಮಿಕರ 10.13 ಮಿಲಿಯನ್ರಷ್ಟಿದ್ದಾರೆ. 5 ರಿಂದ 18 ವರ್ಷ ವಯೋಮಾನದ ಬಾಲಕಾರ್ಮಿಕರು 33 ಮಿಲಿಯನ್‌ರಷ್ಟಿದ್ದಾರೆ.

ಆರ್ಥಿಕ ದುರವ್ಯವಸ್ಥೆಯಿಂದಾಗಿ ಅನೇಕ ಮಕ್ಕಳು ಅಪ್ರಾಪ್ತವಯಸ್ಸಿನಲ್ಲೇ ತಮ್ಮನ್ನು ತಾವು ದುಡಿಮೆಯಲ್ಲಿ ತೊಡಗಿಸಿಕೊಳ್ಳುವುದು ಅನಿವಾರ್ಯವಾಗಿದೆ. ಭಾರತದಲ್ಲಿ ಇಂದು ಮಕ್ಕಳು ಅಸಂಘಟಿತ ಮತ್ತು ಸಂಘಟಿತವಲಯಗಳಲ್ಲಿ ದುಡಿಯುತ್ತಿದ್ದಾರೆ. ಕೃಷಿಕಾರ್ಯ, ಬೀಡಿತಯಾರಿಕೆ, ಗಣಿಕೈಗಾರಿಕೆ, ಹೋಟೆಲ್, ಗ್ಯಾರೇಜ್, ಹಣ್ಣು–ತರಕಾರಿ ಮಾರಾಟ, ಕೈಗಾರಿಕೆ, ಕಾರ್ಖಾನೆ ಮುಂತಾದ ಕಡೆಗಳಲ್ಲಿ ಮಕ್ಕಳು ದುಡಿಯುವುದನ್ನು ನಾವು ನೋಡಬಹುದಾಗಿದೆ ಮತ್ತು ಕೆಲವು ಕಡೆ ಮಕ್ಕಳು ಜೀತಾದಳುಗಳಾಗಿಯೂ ದುಡಿಯುತ್ತಿದ್ದಾರೆ.

ಮಕ್ಕಳು ಬಾಲಕಾರ್ಮಿಕರಾಗಿ ಅತ್ಯಂತ ಭಯಾನಕ ಕಾರ್ಯಪರಿಸ್ಥಿತಿಗಳಲ್ಲಿ ಮತ್ತು ಅನಾರೋಗ್ಯಕರವಾದ ಪರಿಸರದಲ್ಲಿ ದುಡಿಯುತ್ತಿರುವುದರಿಂದಾಗಿ ಅವರು ಅನೇಕ

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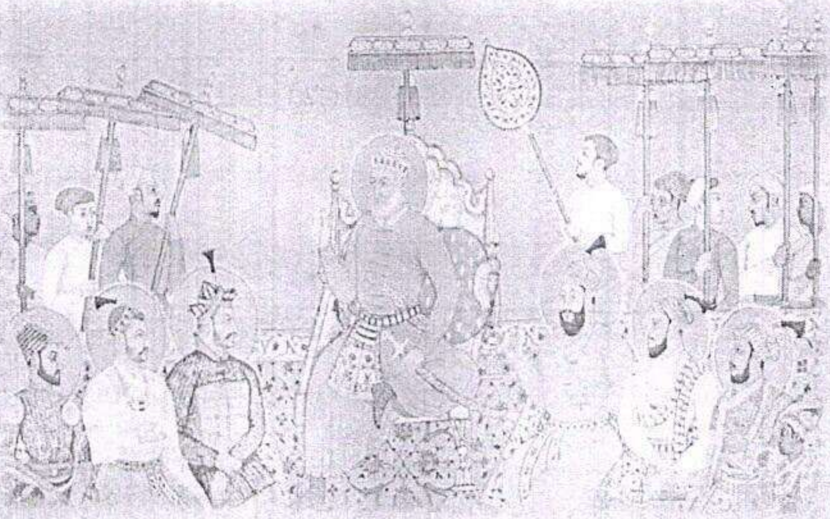

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प्राचीन काल से आधुनिक काल : धार्मिक इतिहास

प्रा.गीता पोस्ते
हिन्दी विभाग
कर्नाटक कला, वाणिज्य, विज्ञान
महाविद्यालय, बीदर

किसी भी देश के विकास को जानने के लिए उसके इतिहास को जानना बहुत ही जरुरी है। इतिहास क्या है? इतिहास की क्या परिभाषा है? इस संबंध में अलग–अलग विद्वानों ने अलग–अलग तरीके से अपनी बात को रखा है, इस कारण इतिहास की कोई भी सर्वमान्य परिभाषा निश्चित नहीं की जा सकी है। इतिहास मनुष्य और समस्त मानव जाति द्वारा की गई उन्नति का विवरण जानने के लिए एक मील के पत्थर का काम करता है। समाज के उज्ज्वल भविष्य के लिए हमें अतीत का इतिहास जानना बहुत जरुरी है। 'इतिहास' शब्द की उत्पत्ति 'इति–ह–आस' इन तीन शब्दों से मानी गई है। इसका अर्थ है–'निश्चित रुप से ऐसा हुआ।'

प्राचीन काल में भारत विभिन्न धर्मों की जन्मभूमि रहा है। हिंदू धर्म, जैन धर्म तथा बौद्ध धर्म यहाँ के प्रमुख धर्म थे। इन सभी धर्मों के लोग सदैव एक साथ मिलकर रहा करते थे। भारत के विभिन्न शासकों ने सदा धार्मिक असहनशीलता की नीति का अनुसरण किया। धर्म को अंग्रेजी में रीलिजन और उर्दू में मजहब कहते है लेकिन यह उसी तरह सही नहीं है जिस तरह की दर्शन को फिलॉसफी कहा जाता है। दर्शन का अर्थ देखने से बढकर है। उसी तरह धर्म को समानार्थी रूप में रिलिजन या मजहब कहना हमारी मजबूरी है। मजहब का संप्रदाय होता है। उसी तरह रिलिजन का समानार्थी रूप विश्वास हो सकता है लेकिन धर्म नहीं। हालांकि मत का अर्थ होता है विशिष्ट विचार कुछ लोग इसे संप्रदाय मानने लगे है, जबकि मत का अर्थ होता है आपका किसी विषय पर विचार। धर्म का अर्थ है कि जो

सबको धारण किए हुए है अर्थात 'धारमति–इति धर्मः!' अर्थात जो सबको संभाले हुए है।

आदिकाल की धार्मिक परिस्थिति देखते है कि इस काल में वैदिक और पौराणिक धर्म के अनेक रूपों के साथ बौद्ध और जैन धर्म के अनेक रूपों के साथ बौद्ध और जैन धर्म भी अपने वास्तविक आदर्शों से दूर हट गये। शंकराचार्य के प्रबल प्रहारों से बौद्ध धर्म को अत्याधिक आघात पहुँचा और वह अब जन्त्र–मन्त्र–तन्त्र की सिद्धियों के चक्र में ही पड़कर रह गया। उसने महायान, वज्रयान और मन्त्रयान आदि कई रूप धारण किये। इस युग में कामुकता और चमत्कार को खूब बढ़ावा मिला। बौद्धों के अतिरिक्त वैष्णवों के पांचरात्र शैवों के पाशुपत, कालमुख आदि सम्प्रदायों में भी बौद्ध सम्प्रदायों की पूजा पद्धति का अनुकरण होने लगा। जैन सम्प्रदाय में भी इसी तांत्रिक वामाचार पद्धति का प्रचार–प्रसार हुआ। इस प्रकार समाज का बहुत बड़ा क्षेत्र उस वामाचार एवं विकृत धर्म का क्रीडा क्षेत्र बना। नाथ योगियों ने बहुत कुछ वज्रयानियों की तांत्रिक उपासना पद्धति को अपनाया किन्तु आगे चलकर गुरु गोरखनाथ ने इस सम्प्रदाय में योग की प्रतिष्ठा की, जिसमें संयम और आचार के लिए महत्वपूर्ण स्थान है। निःसंदेह उस समय का धार्मिक वातावरण अत्यंत कलुषित हो गया था। अपभ्रंश में लिखित सिद्धों और नाथ पंथियों का साहित्य बौद्ध धर्म के विकृत संप्रदायों की प्रतिक्रियाओं का परिचय है। इस समय इस्लाम धर्म भी अपने अनुयायियों की विजय प्राप्ति तथा आतंक फलस्वरूप पनपने लग गया था, पर इसका प्रभाव आदिकालीन साहित्य पर नहीं पडा। निःसंदेह इस युग में धार्मिकता की विडम्बना और भीतरी कलह का युग रहा। ज्योतिष, दर्शन आदि विषयों पर टीका–टिप्पणी लिखी जाती रही। धीरे–धीरे आदिकाल की धार्मिक प्रतिभा का न्हास होते गया। भक्तिकाल का धार्मिक इतिहास देखते समय हमें मालूम हुआ कि, दिल्ली पर तुघलक और लोधी वंश के शासकों ने राज्य किया और द्वितीय 1583 से 1700 इस कालखंड में मुगल वंश के बाबर हुमायूँ अकबर जहाँगीर तथा शाहजहाँ ने अपना शासन चलाया। इस काल में धार्मिक परिस्थिति संघर्षमय रही। निःसंदेह इस काल में कट्टर साम्प्रदायिक मुस्लिम शासकों द्वारा हिन्दू जनता पर घोर अन्याय–अत्याचार होता रहा।

भक्तिकाल की धार्मिक परिस्थिति को हम तीन भागों में बता सकते है–

1) बौद्ध धर्म

2) वैष्णव धर्म

3) सुफी धर्म

महात्मा बुद्ध के निर्वाण के पश्चात बौद्ध धर्म दो सम्प्रदायों में विभक्त हुआ। हीनयान और महायान। हीनयान में सिद्धांत पक्ष की दार्शनिक जटिलता थी, तो महायान में व्यवहार पक्ष की प्रधानता थी। हीनयान में जटिलता टिकी रही। महायान में पवित्रता को ही निर्वान का साधन माना गया और उसमें सभी वर्गों के लोगों को सम्मिलित होने की आज्ञा मिली। हीनयान कट्टरता के कारण संकुचित होता चला गया और महायान उदारता के कारण विकृत होता गया। महायान सम्प्रदाय ने जनता के असंस्कृत वर्ग को जन्त्र–तंत्र अभिचार तथा चमत्कार के मार्ग से वशीभूत किया गया। इसी कारण उसका नाम मंत्रयान पडा। इसके साथ वाममार्ग भी चल रहा था। जिसमें स्त्रियों को वश में करने के लिए विविध प्रकार के जन्त्र–मन्त्र, अभिचार आदि का प्रयोग किया जाता था। मंत्रयान ने वाममार्ग की मद्य, मांस, मैथुन, मुद्राओं को अपना लिया। मंत्रयान से वज्रयान निकला और उसमें चौरासी सिद्ध दीक्षित हुए। सिद्धों और नाथों की मुख्य रुढियाँ सन्त की धार्मिक भूमि बनी।

भक्ति की लहर दक्षिण से आई। शंकराचार्य ने बौद्ध धर्म के विरोध में अद्वैतवाद का प्रचार किया। इसकी प्रतिक्रिया में अनेक दार्शनिक सम्प्रदाय चल निकले जिनमें विष्णू के अवतारों राम और कृष्ण की कल्पना हुई। रामानन्द ने भक्ति के द्वार सबके लिए खोला और जन–भाषा में अपने सिद्धांतों का प्रचार किया।

भक्तिकाल में सगुण भक्ति का विशेष प्रचार हुआ। राम लोक–रक्षक के रूप में पूजे गए और कृष्ण का लोकरंजक रुप सर्वाधिक प्रिय रहा। लोकरंजकता के कारण कृष्ण–लीला भक्तों का आकर्षण केंद्र बनी। कृष्ण–लीला तथा गोपीयों के राग–विहार, किडाए आदि कृष्ण–भक्त कवियों के काव्य में आध्यात्मिक धरातल पर प्रकट हुए, लेकिन रीतिकाल तक पहुंचते–पहुंचते राधा–कृष्ण और गोपियों ने अपना आध्यात्मिक अर्थ खो दिया और वे लौकिक अर्थों में नायक–नायिका, सखी, दूती आदि बन गए। ऐसा क्यों हुआ? इसका एक करण है कृष्ण–भक्ति के प्रचारक महाप्रभु वल्लभाचार्य द्वारा कृष्ण–भक्ति के लिए पुष्टिमार्ग का प्रवर्तन। पुष्टिमार्ग प्रेममार्ग है। दाम्पत्यभाव का प्रवेश हो जाने के कारण कृष्ण–भक्ति सरस हो गयी

थी। अष्टछाप के कवियों ने राधा और कृष्ण के प्रेम को कांत रीति के रुप में प्रस्तुत किया। रीतिकालीन विलासितापूर्ण वातावरण ने ऐसे सरस प्रसंगों को अपनाने में कोई हिचक नहीं दिखलाई। रीतिकाव्य के कृष्ण विभिन्न रियासतों के स्वामी खुद ही है और कृष्ण–राधा के प्रेम में नारी के प्रति इन सामंतों की रुप लालसा ही प्रकट हुई है।

आदिकाल या वीरगाथा काल में युद्ध की प्रवृत्ति प्रमुख थी। भक्तिकाल में धर्म प्रमुख हो गया और रीतिकाल में सामन्तों के दरबार प्रमुख हो गए। पर रीतिकाल के बाद जनता, लोक–समाज, राष्ट्रीयता और देश–गौरव सहसा प्रमुख हो उठे। इसलिए काल की दृष्टि से जिसे हम आधुनिक काल मानते हैं, उनमें बृहत्तर जन–समाज और राष्ट्र की चेतना परिपूर्ण रुप में व्यक्त हुई है, उसमें देश के विगत गौरव का इस तरह आख्यान किया गया है, जिससे निराश जनसमूह को प्रेरणा मिलती है। उसमें धर्म, दर्शन, राजनीति, मनोविज्ञान, सामूहिक, अधिकार और कर्तव्य, विज्ञान आदि के सम्बन्ध में पर्याप्त तर्क–वितर्क का साहित्य मिलता है। उसमें व्यक्ति की निजी भावनाओं, संवेदनाओं और विचारों की अभिव्यक्ति मिलती है। इस तरह आधुनिक काल का साहित्य बहिर्जगत और अन्तर्जगत दोनों पर ही बल देकर विकसित हुआ है और हो रहा है।

धार्मिक कर्मकाण्ड, सामाजिक रुढि, शासन–व्यवस्था और अंग्रेजी साम्राज्यवाद के विरोध से आधुनिक साहित्य का प्रारम्भ माना गया है। इस दृष्टि से भारतेन्दु युग (सन् 1850 से 1900) के साहित्यकारों ने नवीन परम्परा का सूत्रपात किया। अपने साहित्य के द्वारा उन्होंने भारत के प्राचीन गौरव का स्मरण किया और जनचेतना के प्रसार में योग दिया। साहित्य के माध्यम से यह काम करने के लिए भारतेन्दु युग में कई पत्र–पत्रिकाओं का प्रकाशन हुआ।

संदर्भ

1) हिन्दी साहित्य का इतिहास–शिवकुमार शर्मा
2) हिन्दी साहित्य का आलोचनात्मक इतिहास–रामचंद्र शुक्ल
3) हिन्दी साहित्य का इतिहास–गणपतीचंद्र गुप्त
4) प्राचीन भारत का इतिहास–अलोक गुप्त

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ಜನಪದ ಕಲೆಗಳು ಮತ್ತು ಪರಿಶಿಷ್ಟ ಸಮಾಜ

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ಕರ್ನಾಟಕ ಕಲಾ ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ

ಕನ್ನಾಡಿನ ಶಿರಭಾಗದಲ್ಲಿರುವ ಜಿಲ್ಲೆಯೇ ಬೀದರ, ಇದು ಸಮ್ಮಿಶ್ರ ಸಂಸ್ಕೃತಿಯ ನೆಲೆವೀಡಾಗಿದೆ. ಕನ್ನಡ, ಉರ್ದು ಮತ್ತು ಮರಾಠಿ ಭಾಷೆಯಲ್ಲಿ ನಿರರ್ಗಳವಾಗಿ ಮಾತನಾಡುತ್ತಾರೆ. ಪೂರ್ವಕ್ಕೆ ತೆಲಂಗಾಣ, ಉತ್ತರಕ್ಕೆ ಮಹಾರಾಷ್ಟ್ರ ರಾಜ್ಯದ ಗಡಿಯನ್ನು ಹೊಂದಿದೆ. ಆರ್ಥಿಕವಾಗಿ ದುರ್ಬಲರಾಗಿರುವ ಪರಿಶಿಷ್ಟ ಜಾತಿ ಹಾಗೂ ಪರಿಶಿಷ್ಟ ಪಂಗಡದವರಿಂದ ವ್ಯಾಪಿಸಿಕೊಂಡಿರುವ ಈ ಬೀದರ ಜಿಲ್ಲೆಯ (ಧರಿನಾಡು) ಜಾನಪದವು ಶ್ರೀಮಂತಿಕೆಗೆ ಹೆಸರಾಗಿದೆ. ಈ ಜಿಲ್ಲೆಯ ಸಾಂಸ್ಕೃತಿಕ ಹಿರಿಮೆ ಗರಿಮೆಗಳನ್ನು ತಿಳಿಯಲು ಇಲ್ಲಿನ ವೈವಿಧ್ಯಮಯವಾದ ಜನಪದ ಕಲೆಗಳೇ ಸಾಕ್ಷಿಎನ್ನಬಹುದು.

ಈ ಜಿಲ್ಲೆಯ ಪರಿಶಿಷ್ಟರು ತಮ್ಮ ಜನಪದ ಕಲೆಯನ್ನು ಉಳಸಿಕೊಂಡು ಬೆಳಸಿಕೊಂಡು ಬಂದಿರುತ್ತಾರೆ. ಇವರ ಕೊಡುಗೆಯನ್ನಂತೂ ಮರೆಯುವಂತೆಯೇ ಇಲ್ಲ. ಜನಪದ ಕಲೆಗಳ ಸಂಸ್ಕೃತಿಯನ್ನು ಪ್ರಾಮಾಣಿಕವಾಗಿ ದುಡಸಿಕೊಂಡು ಅದರ ರಾಯಭಾರಿಗಳಾಗಿದ್ದಾರೆ. ಹೀಗಾಗಿ ಈ ಜಿಲ್ಲೆಯ ಪರಿಶಿಷ್ಟ ಜಾತಿ ಮತ್ತು ಹೊರತುಪಡಿಸಿ ಅವರ ಜಾನಪದವೊಂದನ್ನೆ ಬೇರೆ ಇಟ್ಟು ಪರಿಗಣಿಸುವುದು ಕಷ್ಟದ ಕೆಲಸವೆನ್ನಬಹುದು. ಈ ವರ್ಗದವರು ಜಾತ್ಯತೀತ ಮನೋಭಾವವನ್ನು ಬೆಳಸಿಕೊಂಡಿದ್ದಾರೆ. ಇದರ ಹಿಂದೆ ಜಾನಪದದ ಬೆಸುಗೆಯನ್ನು ಕಾಣುತ್ತೇವೆ. ಜಾತ್ರೋತ್ಸವಗಳು, ಮೋಹರಂ ಉತ್ಸವ, ಹೋಳಿ ಹಾಗೂ ಯುಗಾದಿ ಹಬ್ಬದ ಸಂಭ್ರಮದಲ್ಲಿನ ಕೋಲಾಟ ಆಗಿರಬಹುದು. ಎಲ್ಲರೂ ಕೂಡಿಯೇ ಭಾಗವಹಿಸುವುದು ಕಾಣುತ್ತೇವೆ. ಇದೆಲ್ಲ ಗಮನಿಸಿದರೆ ನಮ್ಮ ಜನಪದರು ಹಿಂದಿನಿಂದಲೂ ಜಾತಿಯ ಗಡಿಗಳನ್ನು ದಾಟಿ ಭಾವೈಕ್ಯತೆಯ ಒಗ್ಗಟ್ಟನ್ನು ಮೆರೆದಿದ್ದಾರೆ. ಎನ್ನಬಹುದು.

ಜನಪದ ಕಲೆಗಳ ಉಗಮಕ್ಕೆ ಎಲ್ಲ ಜನಾಂಗಗಳ ಸಾಮೂಹಿಕತೆ, ಕಾರಣ ಎಂದರೂ ಅವುಗಳನ್ನು ತಮ್ಮ ಬದುಕಿನ ಭಾಗವಾಗಿ ಪರಿಶಿಷ್ಟರೂ ಉಳಸಿಕೊಂಡು ಬಂದಿರುವುದನ್ನು ಯಾರೂ ಅಲ್ಲಗಳೆವಂತಿಲ್ಲ. ಹಲಗೆ ಕುಣಿತ, ಹುಲಿ ಕುಣಿತ, ಲಂಬಾಣಿ ಕುಣಿತ, ದೊಂಬರಾಟ, ಡೊಳ್ಳು ಕುಣಿತ, ಗೊಂದಲಿ ಮೇಳ, ಬುಡಬುಡಕಿ, ಅಂಟಿಗೆ ಪಂಟಿಗೆ ಹಾಡುಗಳು, ಕರಡಿ ಮಜಲು, ಜಗ್ಗಲಿಗೆ ಮೇಳ, ಹಾವಾಡಿಗರು, ತಾಸೆ

ಔರಾದ ಒಂದು ಸಂಶೋಧನಾತ್ಮಕ ಪರಿಚಯ

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ಕರ್ನಾಟಕ ಕಲಾ ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ

ಇದು ಮೂಲತಃ ಆಮ್ರವಾಟಿ(ಸಂ) ಮಾವಿನ ತೋಪು ಎಂದಿರಬಹುದು. ಇಲ್ಲಿ ಅಮರೇಶ್ವರ ಗ್ರಾಮ ದೇವತೆಯಾಗಿದ್ದು ಪೂರ್ವ ಚಾಲುಕ್ಯರ ಶಾಸನಗಳಲ್ಲಿ ಇದು ಅಮರವಾಡಿ–700 ಎಂದು ಕರೆಯಲ್ಪಟ್ಟಿದೆ. ಅಮರೇಶ್ವರವಾಟಿಕಾ > ಅಮರವಾಟಿಕಾ(ಸಂ) > ಅವರವಾಡ(ಪ್ರಾ) > ಅವರಾದ(ಪ) > ಔರಾದ(ಗ್ರಾಮ್ಯ) ಇದನ್ನು ಅವರಾದ – ಬಾರಾಹಳ್ಳಿ ಎಂದರೆ, ಸುತ್ತಲಿನ ಹನ್ನೆರಡು ಹಳ್ಳಿಗಳು. ಇದರ ಅಧೀನವಾಗಿರುವಲೆಂದು ಜನಪದ ನಿಷ್ಪತ್ತಿ ಹೇಳಲಾಗುತ್ತದೆ. ಆದರೆ ಇದು ಅಸಂಗತವಾದುದು. ಈ ಅವರಾದ ಬೋರುಳ ಗ್ರಾಮದ ಹತ್ತಿರವಿರುವುದರಿಂದ ಇದು 'ಅವರಾದ–ಬೋರುಳ' ಎಂದಿದೆ. ಸ್ಥಳೀಯ ಕನ್ನಡ ಭಾಷಿಕರು ಬೋರುಳ ಎನ್ನುವುದನ್ನು ಬಾರಾಳ ಎಂದು ಉಚ್ಚರಿಸುವುದರಿಂದ ನೈಜಾಮ ಕಾಲದಲ್ಲಿ ಇದನ್ನು ಬಾರಾಹಳ್ಳಿ ಎಂದು ಅರ್ಥೈಸಲಾಗಿದೆ.

ಔರಾದ(ಬಾರಾಹಳ್ಳಿ) ಎಂದು ಕರೆಸಿಕೊಳ್ಳುತ್ತ ಔರಾದ(ಬಾ) ಎಂದು ಕರೆಯುತ್ತಿದ್ದಾರೆ. ಔರಾದ(ಬಿ)ಯು ಬೀದರ ಜಿಲ್ಲೆಯ ಇತಿಹಾಸದಲ್ಲಿಯೇ ಬರುತ್ತದೆ. ನಿಜಾಮನ ಕಾಲದಲ್ಲಿ ಔರಾದವು ಸರ್ಫ್–ಎ–ಖಾಸಾ ಜನವಾಡ ಭಾಗದಲ್ಲಿ ಸೇರಿತು. 1950ರಲ್ಲಿ ತಾಲೂಕಾಗಿ ಪುನರ್ ಸ್ಥಾಪಿಸಲಾಯಿತು. ಸಂತಪುರವು ತಾಲೂಕು ಎಂಬ ಕೂಗು ಕೇಳುವಷ್ಟರಲ್ಲಿ ಕೆಲ ಇಲಾಖೆಗಳ ಕಛೇರಿಗಳು ಸಂತಪುರದಲ್ಲಿ ಉಳಿದು ಔರಾದ(ಬಿ)ಯು ತಾಲೂಕಾಗಿ ಕಾರ್ಯನಿರ್ವಹಿಸುತ್ತಿದೆ. ಇದಕ್ಕೆ ಅಮರವಾಡಿ, ಅವರವಾಡಿ, ಬಾರಾಹಳ್ಳಿ, ಅವರಾದಿ, ಅವರಾದ(ಬಾ), ಔರಾದ(ಬಿ) ಹೀಗೆ ಬದಲಾಗುತ್ತ ಕರೆಯಲ್ಪಡುತ್ತದೆ. ಗ್ರಾಮ ದೇವತೆ ಅಮರೇಶ್ವರಲಿಂಗ ದೇವಾಲಯವು ಭವ್ಯವಾದ ಸಾಕ್ಷಿಯಾಗಿದೆ. ಗ್ರಾಮದ ಭೌಗೋಳಿಕ ವಿಸ್ತೀರ್ಣವು 1901 ಹೆಕ್ಟೇರ್ ಇದೆ. ಗ್ರಾಮೀಣ ಔರಾದ ಹೊರತುಪಡಿಸಿ, ಕಪ್ಪು ಕಲ್ಲಿನ, ಕೆಂಪು ಮಿಶ್ರಿತ ಕಪ್ಪು ಕಲ್ಲಿನ ಭೂಮಿ ಇದಾಗಿದೆ. ಕಪ್ಪು ಮಣ್ಣಿನ ಮತ್ತು ಮಸಾರಿ(ಉಸುಕು, ಸುಣ್ಣದಳ್ಳ ಮಿಶ್ರಿತ) ಮಣ್ಣಿನ ಭೂಮಿ ಹೊಂದಿದೆ. ಬಸವನತಾಂಡಾಮಡ್ಡಿ ಇನ್ನಿತರ ಸಣ್ಣಪುಟ್ಟ ಮೊರಡಿಗಳು ಹೆಸರಿಲ್ಲದಂತಿವೆ. ರಕ್ಷಿತಾರಣ್ಯ, ಗಾಯಮಾಳ ಇದೆ. ತೋಪುಗಳು, ತೋಟಗಾರಿಕೆ ಇಲಾಖೆಯಿಂದ ದತ್ತಕ ರೀತಿಯಲ್ಲಿ ನಡೆಸಲ್ಪಡುತ್ತವೆ. ಇಲ್ಲಿ ಆಕಳು, ಎತ್ತು, ಎಮ್ಮೆ, ಕೋಣ, ಕತ್ತೆ, ಕುದುರೆ, ಆಡು, ಕುರಿ, ನಾಯಿ, ಬೆಕ್ಕು ಮೊದಲಾದ ಸಾಕುಪ್ರಾಣಿಗಳಿವೆ. ಕೋಳಿಗಳು ಮುಖ್ಯ ಸಾಕುಪಕ್ಷಿಗಳಾಗಿವೆ. ನರಿ, ಮೊಲ, ತೋಳ, ಜಿಂಕೆ, ಕಾಡುಹಂದಿ, ಮಂಗ, ಕೋತಿ ಮೊದಲಾದವು ಕಾಡುಪ್ರಾಣಿಗಳಿವೆ. ಕಾಗೆ, ಗುಬ್ಬಿ, ನವಿಲು, ಪಾರಿವಾಳ, ಗೊರವಂಕ, ಗಿಳಿ, ಕೋಗಿಲೆ, ಹದ್ದು, ಬೆಳ್ಳಕ್ಕಿ, ನೀಲಕಂಠ, ಕರಿಗುಬ್ಬಿ, ಕೊಕ್ಕರೆ, ಮರಕುಟಿಗ ಹಕ್ಕಿ ಮೊದಲಾದ ಕಾಡುಪಕ್ಷಿಗಳಿವೆ. ಔರಾದ ತಾಲೂಕಿನ ಈ ಪಟ್ಟಣ ಪ್ರದೇಶದಲ್ಲಿ ಸ್ವಲ್ಪ ಮಳೆ ಪ್ರಮಾಣವು ಹೆಚ್ಚಿಗಿರುತ್ತದೆ. ಸರಾಸರಿ ವಾರ್ಷಿಕ ಮಳೆಯು 890 ಮಿ.ಮೀ, ಬೇಸಿಗೆಯ ಬಿಸಿಲು ಸರಾಸರಿ 39^0ಸೆ. ಚಳಿಗಾಲದ ಚಳಿಯು 18^0ಸೆ. ಇರುತ್ತದೆ. ಗ್ರಾಮದ ಪಶ್ಚಿಮ ದಿಕ್ಕಿನಿಂದ ದೊಡ್ಡಳ್ಳ ಹರಿದು ಪೂರ್ವಕ್ಕೆ ನಾರಾಯಣಪುರ ಗ್ರಾಮ ಮತ್ತು ಔರಾದ ನಡುವೆ ಸಾಗಿ ಹೋಗುತ್ತದೆ. ಇದರ ಮೇಲೆ ಕೆರೆಯನ್ನು ನಿರ್ಮಿಸಲಾಗಿದೆ. ತೆರೆದ ಬಾವಿಗಳು, ಕೊಳವೆ ಬಾವಿಗಳು, ಎರಡು ಕರೆಗಳು ಇವೆ. ನೀರು ಪೂರೈಕೆಗಾಗಿ ನಲ್ಲಿಗಳ ವ್ಯವಸ್ಥೆ ಇದೆ.

ಸಾಮಾಜಿಕ ರಚನೆಯಲ್ಲಿ ಲಿಂಗಾಯತರ ದೊಡ್ಡ ಸಮುದಾಯವಿದೆ. ಸಣ್ಣ ಸಮುದಾಯದಲ್ಲಿ ಮರಾಠಾ, ಪರಿಶಿಷ್ಟ ಜಾತಿ, ಪರಿಶಿಷ್ಟ ಪಂಗಡ, ಮುಸ್ಲಿಂ, ಕ್ರಿಶ್ಚಿಯನ್, ಲಮ್ಮಾಣಿ, ಕುರುಬರು, ವಡ್ಡರು ಇತ್ಯಾದಿ ಜನರಿದ್ದಾರೆ.

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ಜಾತ್ರೋತ್ಸವಗಳು

ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ
ಮುಖ್ಯಸ್ಥರು ಕನ್ನಡ ಸಾಹಿತ್ಯ ವಿಭಾಗ,
ಕರ್ನಾಟಕ ಕಲಾ ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ

ಕರ್ನಾಟಕದ ನಾಲ್ಕು ಪ್ರಾಂತಗಳಲ್ಲಿ ಹೈದ್ರಾಬಾದ ಕರ್ನಾಟಕ ಒಂದು. ಇಲ್ಲಿ ಹಿಂದು, ಮುಸ್ಲಿಂ, ಸಿಖ, ಕ್ರೈಸ್ತ ಮುಂತಾದ ಜನರು ವಾಸವಾಗಿದ್ದಾರೆ. ಕನ್ನಡ, ಹಿಂದಿ, ತೆಲಗು ಮತ್ತು ಮರಾಠಿಯಲ್ಲಿ ಮಾತನಾಡುವರು. ಹಬ್ಬ ಹರಿದಿನಗಳು ಮಾಡುವರು. ಜಾತ್ರೋತ್ಸವಗಳನ್ನು ನಡೆಸುವರು. ಹಿಂದುಗಳು ಜಾತ್ರೆಗಳಲ್ಲಿ ಮುಸ್ಲಿಂರು, ಸಿಖರು ಭಾಗವಹಿಸುವರು. ಮುಸ್ಲಿಂರ ಉತ್ಸವಗಳಲ್ಲಿ ಹಿಂದುಗಳು ಕ್ರೈಸ್ತರು ಪಾಲ್ಗೊಳ್ಳುವ ವಾಡಿಕೆ ಇದೆ. ಗುಲ್ಬರ್ಗಾ ಶರಣಬಸವೇಶ್ವರ, ಅಫ್ಜೂರ ಅಲ್ಲಮಪ್ರಭು, ಖಾಜಾಬಂದೇನವಾಜ, ಬೀದರಿನ ಬೆನಕನಳ್ಳಿ ಎಲ್ಲಮ್ಮ, ಗುರುನಾನಕ, ಕೊಪ್ಪಳದ ಗವಿಸಿದ್ಧೇಶ್ವರ, ನಾರದಗಡ್ಡೆ ಮತ್ತು ಕಲ್ಮಲಾ ಕರಿಯಪ್ಪ ಶಿವಯೋಗಿ ಮುಂತಾದ ಜಾತ್ರೆ ಉರುಸಗಳಲ್ಲಿ ಎಲ್ಲ ವರ್ಗದ ವರ್ಣದ ಜನರನ್ನು ಕಾಣುತ್ತೇವೆ. ಹೆಚ್ಚಾಗಿ ಈ ಪ್ರದೇಶದ ಜಾತ್ರೆಗಳು ರಾಷ್ಟ್ರೀಯ ಭಾವೈಕ್ಯತೆಯ ಪ್ರತೀಕವಾಗಿವೆ.

ಈ ಪ್ರಾಂತದ ಯಾವುದೇ ಜಾತ್ರೆಗಳು ನಡೆಯಲಿ ಆಯಾ ದೇವಾಲಯದ ಸುತ್ತಮುತ್ತಲಿನ ಹಳ್ಳಿಯ ಮುಖಂಡರ, ಪೂಜಾರಿಗಳ, ಜಾತ್ರೆ ಸಮಿತಿಯವರ ಪಾತ್ರ ಮುಖ್ಯವಾಗಿರುತ್ತದೆ. ನಿರ್ದಿಷ್ಟ ಸಮಯದಲ್ಲಿ ಜಾತ್ರೆ ಜರುಗುವಂತೆ, ಎಲ್ಲ ಹಂತದ ವ್ಯವಸ್ಥೆ ನೋಡಿಕೊಳ್ಳುತ್ತಾರೆ. ಕರಪತ್ರ ಪ್ರಕಟಿಸಿ ಪ್ರಚಾರ ಮಾಡುತ್ತಾರೆ. ಚಂದಾ ಹಣದೊಂದಿಗೆ ದವಸ ಧಾನ್ಯಗಳು ಸಂಗ್ರಹಿಸುತ್ತಾರೆ. ದೇವಾಲಯಕ್ಕೆ ದುಂಬು-ಧೂಳು ಹೊಡೆದು ಸುಣ್ಣ ಬಣ್ಣ ಬಳಿಯುತ್ತಾರೆ. ತಳಿರು ತೋರಣ ಕಟ್ಟುತ್ತಾರೆ. ದ್ವಾರಗಳು ಹಾಕುತ್ತಾರೆ. ವಿದ್ಯುತ್ ದೀಪಗಳು ಧ್ವನಿವರ್ಧಕಗಳ ಅಳವಡಿಸಿ ಜಾತ್ರೆ ನಡೆಸುತ್ತಾರೆ. ಈ ಪ್ರದೇಶದ ಜಾತ್ರೆಗಳು ಜರುಗುವಾಗ ಈ ಕೆಳಕಂಡ ಪ್ರಮುಖ ಪದ್ಧತಿಗಳ ಸಾಮಾನ್ಯ ಸ್ವರೂಪ ಪಡೆದುಕೊಳ್ಳುತ್ತವೆ.

ಜಾತ್ರೆ ಜರುಗುವ ಸಮಯ:

ತಮ್ಮ ತಮ್ಮ ಕುಟುಂಬದ ಸದಸ್ಯರೊಂದಿಗೆ ಕ್ಷೇತ್ರ ದರ್ಶನ ಮಾಡುವುದು ಇಷ್ಟ ದೇವರಿಗೆ ಹರಕೆ ಸಲ್ಲಿಸುವುದು ಮನರಂಜನೆಯ ಕಾರ್ಯ ಕಲಾಪಗಳಲ್ಲಿ ಭಾಗವಹಿಸುವುದು, ದನಕರುಗಳನ್ನು ಕೊಂಡು ಮಾರುವುದು, ಗೃಹ ಬಳಕೆಗೆ ಅಗತ್ಯವಾದ ವಸ್ತು ಸಾಮಗ್ರಿಗಳನ್ನು ಖರೀದಿಸುವುದು, ಬಂಧು ಮಿತ್ರರನ್ನು ಭೇಟಿಯಾಗುವುದು. ಇವೇ ಮೊದಲಾದ ಚಟುವಟಿಕೆಗಳಿಗೆ ಉತ್ತಮ ಅವಕಾಶ ಜಾತ್ರೆಗಳಲ್ಲಿ ದೊರಕುವುದು.

ಜಾತ್ರೆ ನಡೆಯುವ ಕಾಲ ಮತ್ತು ಸ್ಥಳ ಹೆಚ್ಚು ಪ್ರಶಸ್ತವಾಗಿರಬೇಕಾದ್ದು ಅತ್ಯವಶ್ಯಕ. ಸಂಕ್ರಾಂತಿ ಹಬ್ಬದ ವೇಳೆಗೆ ಕೊಯಿಲು ಕಾಲ ಮುಗಿದಿರುವುದು. ಆ ವೇಳೆಗೆ ಧಾನ್ಯ ಸಂಗ್ರಹಣೆಯ ಕೆಲಸವೂ ಬಹುಮಟ್ಟಿಗೆ ಪೂರ್ಣಹೊಂದಿರುತ್ತದೆ. ಅಲ್ಲಿಂದಾಚೆಗೆ ಮುಂದಿನ ಮಳೆಯ ಪ್ರಾರಂಭವಾಗುವವರೆಗೂ ಜನರಿಗೆ ಸಾಕಷ್ಟು ವಿರಾಮವಿರುವುದು. ದುಡಿಯುವ ರಾಸುಗಳಿಗೂ ಕೆಲಸದ ಹೊರೆ ಹೆಚ್ಚಾಗಿರುವುದಿಲ್ಲ. ಚಳಿಗಾಲ ಮುಕ್ತಾಯದ ಹಂತದಲ್ಲಿರುವುದರಿಂದ ಹವಾಗುಣ ಹಿತಕರವಾಗಿರುವುದು. ಆ ಕಾಲದಲ್ಲಿ ನೀರಿನ ಸೌಕರ್ಯವೊಂದಿದ್ದರೆ ಬಯಲು ಪ್ರದೇಶದಲ್ಲೇ ಬೀಡು ಬಿಡಬಹುದು. ಮರಗಳ ನೆರಳಿನಲ್ಲೋ, ಗುಡಾರಗಳಲ್ಲೋ, ಎಳೆಂಟು ದಿನಗಳು ಕಳೆಯುವುದು ಕಷ್ಟವಾಗಲಾರದು. ಜಾತ್ರೆಗಳು ನಡೆಸಲು ಬೇಸಿಗೆಯು ಹೆಚ್ಚು ಪ್ರಶಸ್ತವಾದ ಕಾಲವಾಗಿರುವುದು. ಇದನ್ನರಿತ ನಮ್ಮ ಪೂರ್ವಿಕರು ಜಾತ್ರೆಗಳನ್ನು ಹಾಗೂ ರಥೋತ್ಸವಗಳನ್ನು ಬಿಸಿಲು ಕಾಲದಲ್ಲಿ ನಡೆಸುವ ಪದ್ಧತಿಯನ್ನು ರೂಢಿಗೆ ತಂದಿರಬೇಕು. ಈ ನಾಡಿನಲ್ಲಿ ಚಳಿಗಾಲದಿಂದ ಮಳೆಗಾಲ ಪ್ರಾರಂಭದವರೆಗೆ ಜಾತ್ರೆಗಳು ಜರುಗುತ್ತ

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V.S. Naipaul's, A Flag on the Island: A Critical Appraisal

Md. Asif Ali & Umakant S. Patil

V.S. Naipaul is one of the famous writer in the world. He was born in Trinidad in 1932. He had gone to England for higher education and after four years at University College, Oxford, he starts to write and since then he has not accepted no other profession. He has published more than 30 books on fiction and nonfiction including novels and short stories. A Flag on the Island is one of them. In this collection, Naipaul brings together several short fiction. The stories describe the collection of expatriate from different regions- India, China, Africa, and also describe the whites who have emigrated. They are all victims of the social changes on the Island. A Flag on the Island consists of eleven stories.

The first story My Aunt Gold Teeth set incunupiain country Caroni. She is the narrator'saunt. Noone knows her real name. Everyone knows calling her Gold Teeth. She had married early and her husband was well-to-do. He is Pandit having scholarly

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behavior. He is a man of substance. She is also famous for knowing her personality. She is short, scarcely five feet and she is very fat. She is a religious woman and most of the days observing fast. In remaining days, she eats little because she belongs to orthodox Hindu family. She knows the taboos of Hinduism. Though she is forty, she does not have children.

Here Gold Teeth means power of rituals. Though she eats little and prayed much. Her father is best known Pandit, during his time. She is equally respecting Christianity. She takes her husband to her mother's house, who is venerable lady. She is living in port-of- Spain, because of her husband's ill health. Day by day he is becoming weak. One day early morning he died. The whole story revolves round the character of Gold Teeth, her dilemma, culture, crisis and religious uncertainty.The tittle is apt because the writer does not introduce her name elsewherein the story.

The Raffle is the second story. It set in Trinidad. It is the story of Mr. Hinds. He is a teacher by profession. His is having the respectable post. His behavior with the students is not good. For small reason beating to students with tamarindstick. He isa good and all he is kind hearted. He is a middle aged man. He is always fresh, clean and his dress is ironed. He wears brown coloured suit, a cream-colored shirt and wine coloured tie. There is a rumor that he drinks heavily at weekends. In Trinidad teachers are not paid as per the government scale. Theirs's is under Payment, their salary is insufficient because of this, he is taking private tuition classes and he has also breeding animals and maintained poultry farm. He is having mastery over his teaching. Therefore, he is in the heart of the student. And students are also proud of him. Because of his corporal punishment students never complained to the higher authority. Though parents knows about his punishment and then neverinterfered between students and teachers. But it is wonder to say that he has never beenbeaten because of his nature. Hinds is first a doctor then a teacher. His duty reminds Goldsmiths The Village School Master. In this respect Sudha Rai comments, "The exploitation of the child by adults especially within the colonial School system, where two way communication generates the more serious implications of the story whipped for the first time by the school master… the school altogether."[1] The tittle is appropriate to see that the whole story is based on the narrator.

A Christmas Story is the third story. It sets in Miguel Street. It is the story of Naipaul's himself. He is narrator in the story. It is neither a story or nor a novel. It is like a novella. Because it is a very long story. The narrator here is detached from the next culture. After embracing Christianity, he changes his name Randolph. He has changed his name by the presbyteries of the Canadian mission. His previous name was Chunnilal Winton. It seems to say that he has been confined to certain setofideologiesin which progress and development means Christianity and other cultures are uncivilized and backward but at the same time even after the conversation. Shefeels alienated from and nostalgic to the religion. He therefore say:

> "My life thereafter was a lonely one. I was cut myself off from my family unless in the event of real trouble there would be people to whomI could turn now I was deprives of this solace". (CS. P: 47)

Sudha Rai makes remarkable comments, "Naipaul grapples with the treatment of the perils of hybridity in the Colonial situations. Though the use of flashback, the story traces the events in the life of Randolph (chunnilal) who despite his commitment to the teaching profession…He is"[2]

Firstperson narrative technique is employed. It is aflashback story. The title is apt because of the celebration of the Christian community.

The Mourners is the fourth story. It set in Miguel Street. It is the story of Ravi. The narrator in this story is Ramesh. Ravi is the son of a doctor. He is tall, pale and handsome. His mother, Miss. Sheila having an attractive personality. Ravi is the lover of snapshots. He is by professional photographer. He has maintained album to keep snapshot. He is lover of nature like Salim Ali. They are arranged categorically after his death, his mother has kept that album well preserved. Because she is watching her son in that album thinking that her son is alive. It is superficially having with hypocritical manner and emotion. Ramesh, once visits Miss. Sheila. Who is mourning the death of her son, Ravi. Her hypocritical nature is exposed seeing him. In this respect Walsh says, "The pointless frazil of self-indulgencesof the rootless people as also the tourist in the Island."[3] The title is apt to show the mourning of the death of Ravi.

The Night Watchman's Occurrence Bookis the fifth story. It sets in C- Hotel. It is the story of night Watchman. There are thirty two rooms in that Hotel. These hotel provides both boarding and lodging facilities. When the story opens C-Hotel is visible. The hotel timing is between 7 a.m. to 12 p.m. seeser always is the night watchman. The Night Watchman's Occurrence Bookis kept in the C- hotel. It maintains the record of the incomers and outgoers and also the attendance of those tourist who are temporary staying there. Mr. Cavander, careless, non-cooperative and always nodding. Inthis respect, he has been suspended several times. Nowhe has been dismissed from the service. In his place, Hilliyard has been appointed. This Watchmen has also been removed from the service after receiving the complaint from Mr. Wills because of his honest behavior occurrence book is in the form of dairy. It exposes the relationship between the night watchman, Hilliyards and the hotel Manager and white guest. The tittle is aptto tell the duty consciousness of night watchman and their responsibility satiric irony is used in this story.

The Enemy is the sixth story. It sets in cunupia. It is the story of a child. Here, narrator himself is a child. His mother not only hates him but also hates his father. She is always saying that, he is his father's son not her mother because of his father's inheritance qualities, after his father sudden death, her mother has not changed. She continuousto hate him.She says to him, "Go ahead and do what you doing. You is your's fathers child, you hear not mine". (TE. P: 62). When his father was ill and on the bed, she went to her mother's leaving her husband alone.

He flatly refused to go with her. He is pleased to hear his decision. He gives him box full of crayons. He is spending his time choosing crayons. His father is a driver. There are two types of drivers -slave -driver and free- driver. His father belongs to the second category. He is giving service to people who are going to sugar factory and bringing them back after the factory hours. In this respect, Sudha Rai comments, "The story develops the marital conflicts of Naipaul's own parents stemming from the culturally sanctioned divide between the mother side" and "the father side of the parent have left the child unattended by them"[3]. Tragic irony is employed in this story. The title is suitable because heatedness is dwelt between father and son.

Green and Yellow is the seventh story. It set in a building. It belongs to Mrs. Cooksey. There are several tenants residing in her building. Welsh couple are one of them. They have preserved a bird called Bluey. It is Smokey blue. It quarrels with unclipped Wings.Welshfamily has purchased a cage according to its size. Cooksey have no children. Now they are old, there is no hope of querulous begetting children. Mrs. Cooksey does not have attachment with tenants. Among, the tenants she likes Welsh family is temporarily leaving for her daughter's house while leaving. She has given their bird to them. Before that Mrs. Cooksey have already two birds -Green and yellow, Bluey symbolizes the native of the Island.Greenie bird symbolizesa foreign settlement. Yellow represents a new culture. Among three yellow is powerful, when it enters earlier two birds become weak. There becomes a cultural clash between Green and yellow, in which greenie loses, and the land is colonized by yellow. But the region of yellow also does not last for long. She is calm and alone in the cage.Her isolation symbolizes culturalalienation. The title is apt to reveal cultural class in the form of three Birds.

The Perfect Tenants is the eight story. It sets in an apartment in Anglia. That apartment belongs to Mrs. Cooksey. She is land lady. Darkin family is one of them. Her family is favorite to Mrs. Cooksey. She and her husband's behavior is an example for others. They are not permanently residing in that building. They are coming once in a week. They never attend phone calls. Theirsis a respectable family. Mrs. Darkin is about forty. She is tall and thin. She is always smiling, Mr. Darkinis an electrician. He is as old as his wife. He is an athletic. At present they are in trouble because, he falls down from a ladder. The result of this is his arm has totally fractured. Other generous Person in that building is Po-Po. He is taking too much care to him.One night Mr. Darkin knock the door of one after another including owner's door stating that her husband's condition is critical. It is also learnt that her husband is suffering from appendix. Within a fraction of second all assembled and takes him to the hospital. Because of their cooperation and doctor's help, he is out of danger and totally recovered then they vacated the flat. The third person narrative technique is employed. The title is apt to show mutual cooperation among themselves.

The Heart is the ninth story. It sets in Jameson Street. It is the story of Hari. He is ten years old boy. His heart is weak. The doctor has advised him to take care about his health. He should not exhaust his body. Heis fat. His interesting game is cricket. He always keep expensive fountain pens. But they are stolen. He is an ordinary student in the class. Behind his compound, there is a dog of Alsation breed. Who is living with our oldlady. She has protected from the dog. He asks his father to bring bi- cycle for going to school. The result of this riding bicycle, there is a light heart pain.

Againdoctor advised him to take a week rest on the eve of his birthday, his mother has given him a puppy. He is found of that dog. His father has given him camera on his subsequent birthday. The day by day the dog is becoming weak and when it was crossing the dog, it comes under the car and died. His father is telling to go to Lari "Go after him. His heart is weak" (TH. P:110) and not to tell the death of a dog. The title is apt because the own story narrates over the weak heart of a boy.

The Bakers Story is tenth story. It sets in Trinidad. It is the story of a Bakers. He belongs to Grenada. He has come to Trinidad for business purpose. Heis one of the ten children of his parents.Occasionally, he is going to his native. Thistime he has brought his mother with him, hereher mother starts stitching uniform working under a Chinese shop. In his shop Baking items are being prepared. He is also working under the Chinese owner. Baker's story is about the struggle of Grenadadian Bakers in Trinidad. Though, he is a professional bakers, he is the victim of the ideology that where black are only to serve others. But theycannot own their Bakery. Thestory also presents the antagonism among blacks from different races, culture, and Nations. Sudha Rai has rightly observed "In the early phase of colonial history, economic survival takes precedence over more dignified needs……. to become a rich man, despite the price he pays for it"[4]. The title is apt toshow the life of a Baker.

A Flag on the Islandis the title story. It sets in Island Trinidad. It is the story, which reveals the condition of Trinidad's Past and present. The narrator is an American soldier. His name is Frankie. It is his second visit to that place. This time he has come as a tourist. During his visit, he sees to say that past cannot be reclaimed. Yashoda Bhat has rightly observed, "Naipaul, the novelist is stepped in historicism, like other third world writers. The writer of the post-colonial world shows the pasthistory as receding and new history, which the writer of the new world projects…this principle."[5]

There are two parts in this story- The first and the second part. The first part explores about the soldier, who is in Island during the war. Second part deals with the same soldier, who has come as a Tourist. As a tourist, he stays on the Island due to threatened behavior. It is a flashback story. It is apt to show about the description of Island. It seems to say that financial backwardness and an awareness of the past make its in habitants of the Americans. Though they are housing the American for their own livelihood, they feel it a noble work to work for the Americans. It is an identity at present the flag declares but the lives of the people have become more unreal because they are living being up to a tourist image of themselves.

Notes and Reference:

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2. Ibid., p.82.
3. Ibid., p.94.
4. Ibid., p.99.
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अंतिम दशक के हिन्दी महिला उपन्यासों में नारी की समस्याएँ

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पिछले दो दशकों में प्रकाशित उपन्यास साहित्य में हमारा साक्षात्कार ऐसी नारी जीवन से होता है, जो अपने सामने उपस्थित चुनौतियों को दृढतापूर्वक स्वीकार करती है और अपने निर्णय के लिए किसी पुरुष का मुंह नहीं जोहती । मैत्रेयी पुष्पा की इदन्नमम् की 'मंदाकिनी' या 'चाक' की 'सारंग' तथा 'झूला नट' की शीला अल्म कबूतरी की अलमा जिन्दगी में कई उतार चडाव को झेलने के बावजूद भी अपना साहस नहीं छोडती लेखिका प्रभा खेतान की 'छिन्नमस्ता' की प्रिया चित्रामुदगल के उपन्यास की 'आंवा' की नमिता तथा मृदुला गर्ग की 'कठगुलाब' की स्मिता और समता कालिया के उपन्यास की 'एक पत्नी के नोट्स' की कविता आदि ऐसे स्त्री पात्र है जो अपनी अस्मिता व अधिकारों के प्रति समग्र है । वे न केवल सामंती परिवेश, रूढ़, परम्पराओं को तोडती है, बल्कि मनुष्य के रूप में अपने अस्तित्व की स्थापना करने के लिए भी प्रतिबद्ध है, कठगुलाब की नाईका मारियम्मा के बारे में लेखिका कहती है 'समाज शास्त्रीय मारियाना जानती थी कि हर औरत एक पूरे समय औरत समाज का प्रतिनिधित्व करती है । पर एक मास के शरीरवाली मारियाना नाम की औरत यह भी जानती थी कि उसकी तरह हर औरत औरों से कुछ अलग एक विशिष्ट प्राणी है । चाहे वह कितनी अपूर्ण और मामूली क्यों न हो तभी तो इंसन है विशिष्ट है अलग है।'

समकालीन उपन्यास की नायिकाएँ, मात्र साहित्यिक पात्र नहीं है, बल्कि वह सम्पूर्ण स्त्री जाति का प्रतिनिधित्व करती हुई, नारी जीवन की समस्याएँ एक प्रतिबन्धों को भोगे यथार्थ को रेखांकित करती है ।

'छिन्नमस्ता' उपन्यास की प्रिया का जीवन आधुनिक नारी के संकल्प का दस्तावेज है, कथा सतीसर उपन्यास में राजीसेठ ने कथा मात्र लली की न होकर एक गतिशील औरत की कहानी है जो ललती ने कात्या तक संघर्शपूर्ण सफल तल्य करती है और नारी में नारी के प्रति साहानुभूति का भाव भर, उन्हे स्वाभिमान से दीप्त बनाती है।

समाज में नारी शोषण की समस्या अति प्राचिन है । नारी सदैव पुरुषों की अधीनस्थता और अत्याचार को झेलने के लिए विवश रही हैं, भारतीय समाज में स्त्री को स्थिति वैधिक काल से ही शोषित व पीडित रही हैं । किन्तु मध्यकाल में नारी की स्थिति और भी दैनीय बन गयी । भारत पर विदेशी आक्रमणों के अत्याचारों से वह उत्तरोत्तर अधिक दासता के बन्धनों में जकडते चली गयी । समाज की बदलती स्थिति के कारण नारी पर जो प्रतिबन्ध लगे उनका लक्ष्य नारी की सुरक्षा था, किन्तु कालानंतर में वे प्रतिबन्ध पुरुष समाज द्वारा संचालित होने लगे, यह दमन और शोषण का प्रभाव उसके (नारी) के जीवन के हर पक्ष में दिखायी देता है ।

आज आधुनिक दौर में सिद्धान्तः स्त्री–पुरुष में भेद–भाव समाप्त हो गये हैं । परन्तु व्यवहार में स्त्री–पुरूष में पक्ष–पात की स्थिति मौजूद है । समय के साथ–साथ समाज में काफी प्रगति की परन्तु स्त्री विषयक संस्कार समाज में पुरातन पंथी और जडवादी ही बने रहे । स्त्री जीवन के प्रति समाज में नारी की स्थिति के प्रति अपने विचार व्यवहार करते हुए "जान स्ट्रयड मील" अपनी पुस्तक 'सबजेक्शन आफ उमेन' में लिखते हैं– 'आज के युग में विवाह ही एक मात्र ऐसा क्षेत्र है जहाँ दास–प्रथा अब भी मौजूद है' ।

आप के नारी संघर्ष, समाज में सहमानद का दर्जा प्राप्त करने के लिए ही चल रहा है । जिस समाज में नारी के सहज विकास की सम्भावना न हो वह समाज स्त्री के योग्य नहीं होता । विचारकों एवं रचनाकारों ने प्रारंभ से ही नारी शोषण के प्रति तिखी प्रतिक्रिया व्यक्त की है । इस क्षेत्र में अनेक महिला कथाकारों ने नारी शोषण को अपने लेखन का प्रमुख विषय बनाया । महिला लेखिकाएँ इस दिशा में पुरुष लेखकों की अपेक्षा अधिक प्रतिक्रियावादी दिखाई देती है । उतरशती का सम्पूर्ण महिला लेखन महिला कथा–साहित्य नारीवादी दृष्टिकोण को ही अपने विचारों में समाहित कर समृद्ध किया है ।

सामाजिक विसंगतियों के कारण नारी का कोई स्वतंत्र अस्तित्व नहीं था । अधिकार ही न और महत्वहीन जीवन के काअण ही, नारी शारीरीक और मानसिक दोनों स्तरों पर शोषण का शिकार हुई । स्त्री को लोकतारिक समाज में कुछ सीमा तर, राजनीतिक, सामाजिक और आर्थिक अधिका प्राप्त हुए, फिर भी उसकी मूल स्थिति में विशेष अंतर नहीं है । इस समस्या का केन्द्र नारी के भीतर छिपी असुरक्षा की भावना तथा उसके आक्षित होने की नियति में है । यह कारण है की आज के समाज और व्यवस्था के बीच नारी उन्ही विसंगतियों का सामना करती दिखाई देती है ।

नारी जागरण के बाद भी, आज भारतीय नारी शोषण के अनेकों रूपों को सह रही है । पुरुष सदैव नारी पर आसक्त रहा है । फ्लस्वरूप नारी को भोग्य वस्तु समझने की उसकी (पुरुष) की मनोवृत्ति मध्य युगीन मानसिकता की याद दिलाती है । भारतीय समाज स्त्री को माता, पत्नी, बहु, बेटी........ आदि कई रूपों में अनेक दायित्वों का निर्वाह करना पडता है । समाज और राष्ट्र के सर्वंगीण विकास की प्राथमिक अवस्था परिवार है । दोनों का निर्माण परिवार से ही होता है । इसीलिए मानव समाज में इसका महत्वपूर्ण स्थान है । मनुष्य की स्वाभाविक प्रवृत्तियों और भौतिक आवश्यकताओं में परिवार संस्था को जन्म दिया– एल मर वैरेन्स के शब्दों में– ‘ अनेक प्रेरकों, आवश्यकताओं और क्रियाओं के फलस्वरूप मानव–प्रजाति ने अत्यंत सुन्दर सामाजिक संगठन, सामाजिक विश्वासों रीतिरीवाजों, विचारों और संस्थाओं का निर्माण किया है । इन सब का पोषण समाज द्वारा होता है, जो इन्हे एक पीढी से दूसरी पीढी को हस्तांत्यरित करने के लिए इच्छुक रहता है ।’ इसी तरह मानव प्रजाति की सबसे प्राथमिक एवं मूलभूत संस्था परिवार है जिसका निर्माण मनुष्य की इच्छाओं की पूर्ती के लिए हुआ है ।

परिवार, समाज की एक आधारभूत एवं सार्वभौमक संस्था है । हम परिवार के अलावा समाज की निरंतरता एवं सातत्य की कल्पना भी नहीं कर सकते । क्योंकि, परिवार संतानोत्पति द्वारा मृत व्यक्ति का रीक्त स्थान भर देता है । इसी तरह मृत्यु और अमरत्व दो विरोधी अवस्थाओं का सुन्दर समन्वय परिवार में होता है । यही कारण है कि पूरे विश्व में परिवार का अनन्य साधारण महत्व है ।

सामाजिकरण की प्रक्रिया परिवार में ही होती है । व्यक्ति विकास के लिए आवश्यक सामाजिक गुणों की शिक्षा सबसे प्रथम परिवार से शुरू होती है । इसलिए

परिवार को सामाजिक जीवन की शाश्वत पाठशाला कहा गया है– परिवार में प्रेम, बंधुता, सह जीवन, सहयोग, सहनशीलता, कर्तव्य आदि सामाजिक गुणों का विकास होता है । साथ ही सेवा, त्याग, श्रद्धा, कर्तव्य निष्ठा, प्रामाणिकता, निस्वार्थ वृत्ति आदि नैतिक गुणों के संस्कार परिवार में किए जाते हैं । यही संस्कार परिवार तथा समाज की भी रक्षा करते हैं और उसे प्रत्येक पीढी में नवीन शक्ति से अग्रसर करते है ।

इसी तरह मानव समाज की संपूर्ण संरचना परिवार पर आधारित है । एक प्रमुख सामाजिक इकाई के रूप में विद्यमान है । परिवार, समाज की एक महत्वपूर्ण संस्था है । परिवार की व्यापकता एवं उदात भावना से केवल भारतीय ही नहीं बल्कि विश्व साहित्य भी प्रभावित हुआ है । इस प्रकार परिवा का महत्व प्रतिपादित किया गया है । परिवार अनिवार्य है ।

स्वाधीनता प्राप्ति के पश्चात भारतीय समाज में मानव मूल्यों का विघटन हुए तीव्र गति से हुआ । समाज में धन, संपत्ति का महत्व बढता गया । भौतिक सुखों को किसी भी किमत पर खरीदने के लिए मनुष्य, मानवीय मूल्यों की उपेक्षा करने लगा । यहीं से उसका पतन प्रारंभ हुआ । इस क्रम में उपभोगतावादी संस्कृति का उदय हुआ । यह उपभोगतावादी संस्कृति पूंजीवादी अर्थव्यवस्था की ही देन है । पूंजीवादी अर्थव्यवस्था ने समाज में मानव संबंधों को बहुत प्रभावित किया है । अधिक धनोंपर्जन की प्रवृत्ति व्यक्ति को भ्रष्ट मार्ग पर ले गई । सम्पति के लिए संबंधों को नकार जाने लगा । भौतिक सुख–समृद्धि ने मानव संबंधों में शिथिलता उत्पन्न कर दी मानव संबंधों में खोखले पन और खालीपन का आभास होता है । आज संबंधों की पहचान केवल आर्थिक स्थितियों के अनुरूप होती जा रही है । स्वाधीनता के बाद देश की राजनीतिक, सामाजिक व आर्थिक स्थिति में जो परिवर्तन आया, उससे भारतीय नारी को बन्द कमरों से सार्वजनिक क्षेत्र में स्थापित किया । अब परिवर्तित समाज तथा अर्थ व्यवस्था में परिवार का पोषण केवल एक व्यक्ति की आय से संभव नहीं इसीलिए मध्यवर्गीय परिवारों में घर की स्त्रीयों को भी कामकाज करके अतिरिक्त आमदानी का स्त्रोत ढूंढना पडता है । इस तरह नए युग की जीवन शैली ने स्त्री को अनिवार्य रूप से कामकाजी बना दिया है ।

परिवार में बढते हुए आर्थिक दबाव ने स्त्री की मानसिकता को बदला है यही करण है कि अधिकांश पुरुष स्त्री के कामकाजी स्वरूप को धीरे–धीरे स्वीकार करते जा

रहे है । ऐसी स्थिति में स्त्री की आर्थिक स्थिति उसकी आर्थिक उपलब्धियों का लाभ, परिवार प्राप्त करता है । साथ ही सारा परिवार उससे यह भी अपेक्षा करता है कि वह अपेन घरेलू दायित्वों को भी पूर्ण निर्वाह करें इस तरह नारी को परिवार के प्रति दोहरे कर्तव्य को पूरा करना पडता है । नारी घर और बाहर दोनों मोर्चों पर सक्रिय और व्यस्त रहती है । महिलाओं ने जहां पारिवारिक दायित्वों को पूरा करने के हेतु धनोपार्जन का अभिलाषा प्रबल है वहिं अपनी स्वतंत्रता स्थापित करने की उमंग भी उनमें प्रचुर मात्रा में दिखाई देती है । इस प्रकार आर्थिक रूप से स्वतन्त्र होने के के बावजूद भी स्त्री पारिवारिक तथा व्यवसायिक या सामाजिक दोनों धरातलों पर शोषण का शिकार है । उसकी आर्थिक पराधीनता का लाभ उठाकर पुरुष सहकर्मी उसका शोषण करता है, नारी इस शोषण से आत्मरक्षा करने मं असमर्थ दिखाई देती है ।

निष्कर्षतः हम कह सकते हैं कि अंतिम दशक के इन विवेच्य महिला उपन्यासकारों ने अपने उपन्यास के माध्यम से नारी जीवन व शोषण का यथार्त चित्रण प्रस्तुत किया है । विभिन्न प्रकार की पारिवारिक समस्याओं का सामना करती नारी तथा आर्थिक अभाव के कारण घर व परिवार बडती समस्या भटकाव तथा परिवार व समाज में नारी शोषण का उल्लेख अंतिम दशक के महिला उपन्यासों में प्रस्तुत है ।

सहायक ग्रंथ सूची:

1. चाक – मैत्रेयी पुष्पा
2. छिन्नमस्ता – प्रभा खेतान
3. कठगुलाब – मृदुला गर्ग
4. आवां – चित्रा मुदगल

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OPTICAL RECOGNITION OF OLD HANDWRITTEN MUSIC SYMBOLS BASED ON TEXTURE DESCRIPTORS

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ABSTRACT

Optical music symbol recognition facilitates to transcribe the music sheet into machine-readable format so that it can be used for various applications by converting it into midi format. Most of the works in the past have focused on the recognition of printed music symbols and a few on online music symbols. Earlier methods work very well for printed music symbol recognition. However, their performance is limited to clean and binarized documents. Handwritten music symbol recognition is explored a little as it has several challenges such as variation in writing styles, document degradation, noise etc. In this paper, we have investigated the performance of well-known texture descriptor namely Histogram of Oriented Gradients (HOG) for the Old Handwritten Music Symbol Recognition on the publicly available dataset. Support Vector Machine and K-Nearest Neighbor Classifiers were employed for the music symbol classification with K –Fold Cross Validation Technique. We have achieved encouraging results and shown the comparative analysis of various sizes of cell of computing HOG.

Key words: Graphics Recognition, K-NN, OMR, SVM, Texture Features.

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1. INTRODUCTION

Automatic recognition of graphical components has received enough attention during the last four decades due to its important industrial applications. It involves the recognition of structural floor plans, logos and trademarks, maps, electronic circuit diagrams, mathematical symbols, and music sheets, etc. Optical Music Recognition (OMR) facilitates the conversion of scanned music sheets to be converted into a computer-readable format so that they are easy to listen to,

Classification of Historical Documents Based on LBP and LPQ Techniques

Pushpalata Gonasagi, Shivanand S Rumma, Mallikarjun Hangarge

***Abstract:** Historical documents are important source for knowing culture, language, social activities, educational system, etc. The historical documents are in different languages and evolved over centuries and transformed to present modern language, classification of documents into various eras, recognition of words etc. In this paper, we have proposed a new approach to automatic identification of the age of the historical handwritten document images based on LBP (Local Binary Pattern) and LPQ (Local Phase Quantization) algorithm. The standard historical handwritten document images named as MPS (Medieval Paleographic Scale) dataset which is publicly available is used to experiment. LBP and LPQ descriptors are used to extract the features of the historical document images. Further, documents are classified based on the discriminating feature values using classifiers namely K-NN (K-Nearest Neighbors) and SVM (Support Vector Machine) classifier. The accuracy of historical handwritten document images by K-NN and SVM are 90.7% and 92.8% respectively.*

***Keywords:** LBP, LPQ, K-NN, SVM, Document Age, Historical Document.*

I. INTRODUCTION

The historical documents are scientifically and culturally significant to the society. Since from the last decade, the experts digitize the historical documents and stored in the computer which we can accessed through the online anytime and anywhere. The digitized documents are enable us to access the information such as analyzing the documents, recognize the characters, words, retrieve the information, searching the information etc. Automatically identification of the age of document images using image processing and pattern recognition techniques is an important role. It helps historians, forensic science, institutional etc for fixing the authorship of the documents, establishment of the originality of the documents, solution to the questioned documents etc. The historical handwritten documents are studied by the archaeologists to identify the significant characteristics and their creators in order to date the documents [1]. The documents lose their accessibility as sources, if documents were not having an accurate date of origin of the documents. The printed historical document images are used to estimate the unknown publication date from their scanned page images [2]. Most of the documents have not carried any explicit date information [3] which is difficult to decipher the authentic documents without knowing when they were composed. Usually historical documents have not carried the date before the period of 1600 CE [4]. If the historical documents don't have dates it is impossible to fix the authorship. So far very few works have been focused to identify the age of documents and remains it is a challenging problem. There is a lack of publicly available on the Kannada historical documents, so we have considered the online available standard historical handwritten document images for experiment and this dataset is in Medieval Dutch language. The documents are having different eleven classes from 1330 CE to 1550 CE. The age gap between the eleven classes of the historical document is 25 years.

The association of the rest of paper is as per the following: We have reviewed on literature survey in section II. After that presents proposed method, introduction of historical handwritten documents, pre-processing and feature extraction techniques in section III. Then experiment and its results are discussed in section IV. Finally, section V provides the conclusion and future work.

II. RELATED WORK

We have reviewed many research works on identification of the age of the document. But here we have mentioned few literature survey reviews for documents age identification. Sheng He et al. [5] discussed the scale-invariant features using MPS dataset. This system is used to form the stroke elements which enclosed the primary stroke of documents and proposed Evaluation of Self organizing (EOS) map to find the evolution of usual elements along the time for handwritten characters of the MPS dataset. They achieved an accuracy of 85.1% using KNN classifier. Sheng He et al. [6] explored the fragments of stroke and local contour. These strokes and local contour features are extracted and studied to determine for dating the historical documents. The strokes and local contour fragments explored using rotation invariant and scale features. These features are encoded into training code books using bag of words through classical model. They have achieved the 14.9 mean absolute errors which is optimal results. Halder et al. [7] article revealed the determination of ink age of printed documents. This system extracts the set of color features which are average intensities, pixel profile and kurtosis to analyze the ink age of the Google life magazine cover pages published in between 1930 to 1970 with having five decades different. They designed neural net and trained to determine the ink age of unknown samples and achieved an accuracy of 74.5%. Raghunandan et al. [8]

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explored the method for classifications of handwritten documents using foreground and background information of identify the original and forgery documents. They have been analyzed Fourier Co-efficient to differentiate the documents as original and forgery. They have extracted the contrast features of the handwritten documents using Fourier Co-efficient to classify the documents as old and new. They have achieved an accuracy of 78.5% for new documents and 77.5% for old documents. Barboza et al. [9] demonstrated the method for estimating an age of the document using background information of RGB components of scanned document images. The documents were used by considered birth, wedding and other certificates during 20th century i.e period from 1913 to 1952. The document images considered age gap of one year from 1913 to 1952. They have applied the Gaussian distributions to normalized color components of the documents and considered the normalized color components for estimating the age of documents. Sheng He et al. [10] discussed PSD (Polar Stroke Descriptor). PSD are generated using rotation invariant local strokes features and also they have represents the stroke lets. The PSD and stroke lets are used to representing the stroke length in each direction with high-dimensional features for dating the historical documents. The documents are classified using K-NN classifier. They have achieved an accuracy of 60.7%. Fernando et al. [11] explored a model to date the historical color photographs. They have utilized the color components derivatives and angle features to extract the features of the photographs. They have used linear and nonlinear SVM classifier and achieved an accuracy of 85.5%.

III. PROPOSED METHOD

The objective is to present a new approach for identification of age of historical document images. The quality of the historical documents are degraded as increasing the age of documents and also depending on storage condition, humidity, environment and accessing the historical documents. Hence features are extracted using LBP and LPQ techniques from the historical document images. Further, we have classified the documents based on the different classes of historical handwritten document images using traditional classifiers using K-NN and SVM such as first class of historical document images belongs to 1300 class or remaining classes of the historical document images. The process of flow of proposed method is shown as block chart in **Fig. 1**.

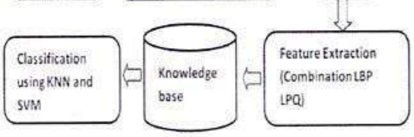

Historical Documents Images
Pre-processing (gray scale, filter, text block)
Database
Feature Extraction (Combination LBP LPQ)
Knowledge base
Classification using KNN and SVM

Fig.1 Block chart of the proposed method

A. Data Collection

Dataset: The standard dataset [12] are considered for the experiment. It contains historical handwritten document images during the period from 1300 CE to 1550 CE. The documents are charters which are particular sort of unequivocally dated documents broadly utilized within period of Medieval Ages to demonstrate a certain legitimates, financial activities, transactions had carried out. The historical document images are collected from four cities. The four cities are Leiden, Arhem, Leuven and Gronigen. The documents are explored numerous corners of the Medieval Dutch dialect. Besides, all the documents established and they have been written documents inside one of four cities. They took a few decades to notice that there is a gradual change in the scripts in handwriting habits. The historical handwritten document images include documents written around medieval years from 1300 CE to 1550 CE. Total eleven years of documents are considered for experiment. These eleven years of historical document are type of eleven classes and contained scanned documents in Portable Pix Map (PPM) format. The 1300±5, 1325±5, 1350±5, 1375±5, 1400±5, 1425±5, 1450±5, 1475±5, 1500±5, 1525±5, 1550±5 with more or less five years of the documents are having limitations of the respective classes of the historical document images. The historical handwritten document images are contained currently **2858** documents as shown in **Table 1**. The text block of the historic handwritten document images are formed **4870**. The total numbers of fully covered texts from the text blocks are **2827** as shown in **Table 2**.

B. Pre-processing

Historical document images are not in condition to use directly for identification of the age of documents even though good scanners are available. The scanned historical document images are in high resolutions and also the presence of the unwanted marks due to ink blot, fading, poor quality of paper, noise are leads for misclassification of the historical document images. Hence we have performed the pre-processing step. In the pre-processing step, scanned color handwritten document images are converted into grayscale document images. Then we have applied Wiener filter for removal of blur from document images. The computational cost of LBP is high when features are extracted from high-resolution of the texture of the historical document images and hence this technique may unacceptable in practical image processing. So we have segmented the historical document images into text blocks of 512X512 sizes and retain only those text blocks which are completely covered text. The total number of handwritten document images and text blocks are discussed in the section III (A). The sample image of text block is shown in **Fig. 2.**

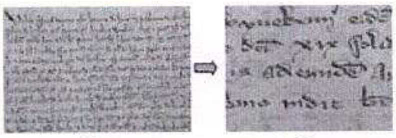

(a) (b)

Fig. 2 (a) Sample original handwritten document image of 1300 CE (b) sample text block image on (a)

Table 1: Historical handwritten document images

Classes	1300	1325	1350	1375	1400	1425	1450	1475	1500	1525	1550
Pages	95	164	199	267	311	323	386	259	372	241	241

Table 2: Text blocks of historical handwritten document images

Classes	1300	1325	1350	1375	1400	1425	1450	1475	1500	1525	1550
Text blocks	281	281	146	192	234	272	304	199	298	298	322

C. Feature Extraction

The quality of the document images are measured using the texture of the document images. LBP and LPQ are the most efficient techniques to capture the texture of the document images and robust to the blur document images. Therefore, the features are extracted from the text blocks using the combination of the LBP and LPQ. For each text block 315 features are extracted. All eleven classes of the text block features are extracted and store as a knowledge base. The features are discriminating in a nature from one class to another class. The mathematical expression of LBP and LPQ techniques are as follows:

Local Binary Pattern: From [13,14], it is an efficient and straightforward texture descriptor that represents pixels of document images by threshold each neighborhood pixel and output is represented as a binary number. The extension of the LBP technique called as Uniform Local Binary Pattern and accessed to minimize the feature vector in terms of size. Uniform LBP is a rotation invariant descriptor. It is defined as pattern contains maximum two bitwise transitions from 0 to 1 or 1 to 0. The bitwise pattern is circularly traversed. If a binary pattern is 01110000 (2 transitions), then it is uniform and binary patterns 10001001 (4 transitions) and 010001010 (6 transitions) are not uniform. The Uniform binary patterns are utilized to compute LBP labels in order to that every uniform pattern has a separate label. By considered neighborhood parameters $p=8$ and $r=1$, it forms totally 256 patterns, among these pattern, uniform binary pattern are 58 and every non uniform binary pattern are codes with a single label. Therefore total 59 features are occurred.

From equation (1), the operator $LBP_{(p,r)}$ is used to study the local image texture in special domain. The symbol (p, r) is utilized for neighborhood pixels by indicating the p as sampling point in the direction of circle of radius r. Where gv_c be the gray value of the center pixel, gv_p be the gray value of p equal spaced neighboring pixels towards the direction of a circle of radius $(r > 0)$.

$$LBP_{(p,\ r)} = \sum_{p=0}^{p-1} f(gv_{p-}gv_c).2^P \qquad (1)$$

$$where \qquad f(k) = \begin{cases} 1, & k \geq 0 \\ 0, & k < 0 \end{cases}$$

Where 2^P is binomial factor which assigned to each sign of $f(gv_p\text{-}gv_c)$. From the definition of LBP operator, it is invariant versus any monotonic transformation of grayscale. It can be attained with sign of the differences instead of their exact values $(gv_p\text{-}gv_c)$.

The pattern which having maximum two transitions is measure as uniformity U. The uniform rotation-invariant texture and gray scale descriptor is expressed as in equation (2).

$$LBP^{u}_{(p,r)} = \begin{cases} \sum_{p=0}^{p-1} s(gv_p - gv_c) & if \quad U(LBP_{(p,r)}) \leq 2 \\ p+1, & Otherwise \end{cases} \qquad (2)$$

Where

$$U\,LBP_{(p,\ r)} = \left| s(gv_{p-1} - gv_c) - s(gv_0 - gv_c) \right| + \sum_{p=1}^{p-1} \left| s(gv_{p-1} - gv_c) - s(gv_0 - gv_c) \right|$$

Local Phase Quantization (LPQ): From [15, 16], LPQ technique is extremely good tolerant to noise and outperforming for sharp and blurred document images. In another words LPQ descriptor is based on local phase spectrum which help to discriminates the underlying texture by distribution of different code words in the image region. So that it is an invariant property for the blur document images. The mathematical expression of the LPQ which yields blur image between original image $f(p, q)$ and blur image $g(p, q)$

$$g(p,q) = f(p,q) * h(p,q) + \eta(p,q) \qquad (3)$$

Where $h(p, q)$ is the PSF (Point Spread Function) and $\eta(p, q)$ is additive noise. The symbol '*' indicates the two dimensional convolution. The relationship between $f(p, q)$ and $g(p, q)$ excluding noise within the Fourier frequency domain is expressed as in equation (4).

$$G(x,y) = F(x,y).H(x,y) \qquad (4)$$

Where $G(x, y)$, $F(x, y)$, and $H(x, y)$ are the Fourier Transforms of $g(p, q)$, $f(p, q)$, and $h(p, q)$ respectively.
From equation (5), we have generated the phase information.

$$\angle G(x,y) = \angle F(x,y) + \angle H(x,y) \qquad (5)$$

Where $\angle G(x, y)$, $\angle F(x, y)$, and $\angle H(x, y)$ are the phases of $g(p, q)$, $f(p, q)$, and $h(p, q)$ respectively.

If PSF is centrally symmetric, then the phase of $h(p, q)$ has only two values. It can be expressed as shown in equation (6).

$$\angle H(x,y) = \begin{cases} 0, & if \quad H(x,y) \ge 0 \\ \pi, & Otherwise \end{cases} \tag{6}$$

Thus, the phase information is invariance between $G(x, y)$ and $F(x, y)$ can express as in equation (7).

$$\angle G(x,y) = \angle F(x,y), \qquad for \quad all \quad H(x,y) \ge 0 \tag{7}$$

From equation (7), blur intensities absolutely holds between $g(p, q)$ and $f(p, q)$ from a phase perspective. The phase information is insensitive to centrally symmetric blur. LPQ executes using Short-Term Fourier Transform (STFT) to extracting phase information of every pixel. STFT is computed from the corresponding $M \times M$ neighborhood centered at the pixel as express in equation (8).

$$G(x,y) = \sum_{p \in N_p} \sum_{q \in N_q} g(p,q)\; e^{\frac{-j2\pi(xp+yq)}{M}} \tag{8}$$

Where Np and Nq are representing the neighborhood regions. By calculating at frequency points $x1 = (a, 0)$, $x2 = (0, a)$, $x3 = (a, a)$, and $x4 = (a,-a)$ using STFT, then LPQ extracts phase information. Where 'a' is a small value with relatively scalar which satisfies the equation (7) and assuring blur-insensitive. The obtained results are expressed by organizing as in equations (9) and (10).

$$W = [G(x1), G(x2), G(x3), G(x4)] \tag{9}$$

and

$$Z = [RE\{W\}, IM\{W\}] \tag{10}$$

Where $RE\{W\}$ and $IM\{W\}$ represent real and imaginary parts of W. Blur-insensitive textural information are collected to encode the elements in Z as in equation (11).

$$b = \sum_{n=1}^{8} m_i . 2^{i-1} \tag{11}$$

Where m_i is the quantization for ith component in Z, given by equation (12).

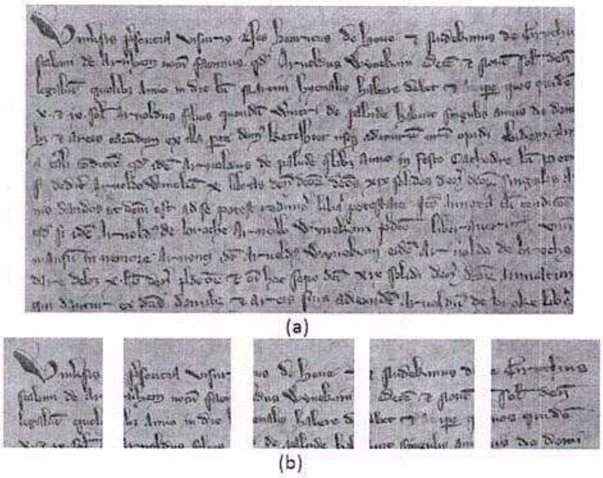
$$m_i(p) = \begin{cases} 1, & Z_i(p) \ge 0 \\ 0, & Otherwise \end{cases} \tag{12}$$

Finally, 256 dimensional features are generated which are encoded values of b within image using formation of histogram.

LBP-LPQ descriptors: The features extracted from the LBP are 59 values and LPQ are 256 values. After combining the both descriptors values, it generated total 315 features values of each text block images of handwritten document images

IV. EXPERIMENTAL RESULTS AND DISCUSSION

The proposed system is evaluated by using handwritten text block images. The experiment is carried out using Image Processing Tool Matlab R2017a version. The experiments are carried out on the dataset as discussed in the section III (A). The Historical handwritten document images are collected during period 1300 CE to 1550 CE from the various cities as discussed in the section III(A). The original historical handwritten document images are color document images. The sample image is shown in **Fig. 4(a).** These documents are converted into grayscale document images and enhanced by the Wiener filter method. The enhanced document images are segmented into 512 x 512 text blocks and retained only text blocks which are covered by full text as discussed in section III(B) and sample images are shown in **Fig. 4(b).** As discussed in the section III(C), features are extracted by applying the combination of LBP and LPQ methods to all eleven classes of the text blocks. Total 315 features are generated for each block images of the class and stored them as a knowledge base. Finally, we have identified the age of text blocks of handwritten document images by using classifier namely K-NN [17] and SVM [18]. The outcome of the experiment is measured in terms of the classification rate. The accuracy of the classification of the proposed method using K-NN and SVM is shown in **Table 3.** The SVM classifier has shown high results compared to KNN classifier. We have attained the average accuracy of 90.5% using K-NN classifier and 92.8% using SVM classifier. It can be realized from the confusion matrix of K-NN and SVM classifiers are shown in **Table 4** and **Table 5** respectively. We have compared our results with the recently published work in the literature [5] is shown in **Table 6.** It reveals that proposed method is performing better than the reported method.


(a)

(b)

Fig. 4 (a) Sample original historical handwritten document image of class 1300 CE (b) Text block sample of segmentation of size 512×512 on (a).

V. CONCLUSION AND FUTURE WORK

In this paper, we have presented a new algorithm for automatic identifying of the age of the given historical document image based on the texture attributes using a hybrid method by combining LBP and LPQ methods. The traditional KNN and SVM classifiers are

Table 3: The accuracy for classification of the proposed method using classifier (K-NN and SVM)

Classes (Handwritten documents in the period(CE))	KNN Classifier		SVM Classifier	
	Classification rate of document identification (%)	Error rate (%)	Classification rate of document identification (%)	Error rate (%)
1300	94.3	5.7	94.3	4.7
1325	94.0	6.0	94	6.0
1350	91.8	8.2	95.9	4.2
1375	89.6	10.4	91.2	8.8
1400	92.8	7.2	92.3	7.7
1425	90.4	9.6	91.2	8.8
1450	94.1	5.9	95.4	4.6
1475	83	17.0	91	9.0
1500	87.2	12.8	88.3	11.7
1525	81.5	18.5	92	8.0
1550	96.9	3.1	95.7	4.3
Average Accuracy	**90.5**	**9.5**	**92.8**	**7.2**

Table 4 Confusion matrix using K-NN classifier

Years	1300	1325	1350	1375	1400	1425	1450	1475	1500	1525	1550
1300	**265**	3	2	1	1	6	2	1	-	-	-
1325	8	**264**	-	2	2	1	1	2	-	-	1
1350	7	1	**134**	-	-	-	1	-	1	3	-
1375	1	1	-	**172**	2	-	3	7	2	2	2
1400	-	3	-	3	**217**	1	3	4	-	1	2
1425	6	3	-	4	1	**246**	1	8	-	3	-
1450	2	2	-	2	1	4	**286**	3	2	1	1
1475	2	4	-	5	6	5	1	**165**	5	4	2
1500	-	4	-	1	4	4	8	5	**260**	11	1
1525	2	6	-	6	4	1	3	12	8	**243**	**13**
1550	-	2	1	-	-	2	1	-	3	1	**312**

Table 5: Confusion matrix using SVM classifier

Years	1300	1325	1350	1375	1400	1425	1450	1475	1500	1525	1550
1300	**265**	5	-	-	-	6	2	2	-	1	-
1325	6	**264**	-	1	4	3	-	1	1	-	1
1350	-	-	**140**	-	1	1	-	-	1	3	-
1375	1	4	-	**175**	4	-	2	5	-	1	-
1400	-	1	-	7	**216**	2	5	-	3	-	-
1425	5	1	-	-	1	**248**	7	6	4	-	-
1450	-	-	3	2	-	2	**290**	2	-	3	2
1475	-	2	-	-	2	4	2	**181**	4	4	-
1500	-	-	-	1	3	-	10	9	**263**	9	3
1525	-	1	-	1	4	-	3	6	4	**274**	**5**
1550	-	-	-	-	-	2	2	2	6	2	**308**

Table 6: Comparison for performance of the proposed method

Author	Dataset	Accuracy (%)
Sheng He [5]	MPS dataset	85.1%
Proposed Approach	MPS dataset	92.8%

used to classify eleven classes based on their originality of the classes to which it's belong. The proposed features extraction method is simple, low computational requirements and high quality description of huge datasets. We have explored the LBP and LPQ descriptors which help in finding the difference between the classes of the historical document images. In the other words, generated discriminative features values of all classes and classifying the documents most efficiently. It is helpful to historians to fix the period or origin of the documents. The future task would to be validating the proposed method by reducing the age gap of historical handwritten document and based on writing styles of handwritten documents.

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Key Concepts in Language and Multimedia

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This paper proposes to enlighten on the ways to use web resources for effective communication of knowledge, idea, concepts. In the teaching of English language & literature, web resources have come to play a significant role in the context of development in technology & various modes of communication. Although, the multimedia resources are used in many of our colleges and Universities indicating an improvement in the teaching of English language & Literature, they have not yet reached and are not being used universally in our country at least at present. The reasons for the scanty used of the multimedia such as combination of text, Graphics, sound, video, animations, may be various & It itself becomes a separate topic for discussion and enlightenment on it.

This paper confines itself to a few basics to the understanding of the concept of multimedia and its used in the teaching of English language & literature. No doubt, multimedia affords communication of thoughts, Ideas, concepts in a more effective way and paves the way for an efficient useful and result oriented medium for imparting knowledge and transferring information. It has many advantages over the traditional methods of delivering instruction. To name a few, the learner uses shorter learning time and retains information very easily.

Multimedia, in a general sense, is inferred "as the combination of various digital media types : text, images, sound & video into a integrated multi-sensory interactive application for presentation to convey a message for information to an audience" (Agnew, Kellerman & Meyer, 1996).

The conventional system contained the use of text as the basic material evolving itself into a gradual improvement. In the system, there is not much scope for student participation and involment which resulted into dullness, lack of interest which continued & repeated year after year with the use multimedia in the teaching & learning of English language & literature, greater success has been achieved in respect of imparting and giving instruction to the stakeholders.

To be clear about the term 'media', we have to be clear about what constitutes media language. Does it mean only that constitutes modern & electronic or has there always been media of one kind or another ? For example, slate, megaphones, we have all realized that communication always relies on some given infrastructure of technology or industry. It means communication always involves a medium or media . This view further leads to some other questions. Do people use language differently than in every day face to face interaction? Is the language differently used in different media? Is the change in language increased or distorted from its patterns by massive influence of media language, idioms, styles and formats. Above all, another questions arises whether the circulations of messages in media form is always a good thing or not. The use of media dates back to the invention of writing, printing, Telephone, Typewriter, Radio, Television, Mobile, Internet, Animation. Twitter, and the many new additions.

My effort is to enable an understanding of the term media and sometimes the confusing ways in which the term is used. An Anthropologist called Ruth Finnegan locates the modern idea of media in the larger context of human's "Use of a wide range of Signs and artefacts as means of Communication". It is another way of envisaging human communication and its resources which means the consideration of the technologies and the materials forms that humans have developed and used in their process of interconnecting. These are more significant than many accounts of communicating.

The term media is much used nowadays. However, it is elusive concept it often means the mass-media, press, Radio & Television but also sometimes the cinema, recording of popular music and some computer mediated forms. In wider historical sweeps, distinctions have been drawn between, print & electrical media, with the recent edition of electronic computer based media, sometimes the oral medium of speech etc., some other writers used media to refer to concrete forms like coins, maps, graffiti.

The International Encyclopedia of communication lists under media nearly 30 forms of varying levels of generality including sculpture, photographs, motion pictures, murals, radio, television, book, map, stamps, portraits, writing & telegraphy.

Media in the widest sense, "People can interact by mediational means" (Scollan). Media is not just a matter of journalism, television for computer communication. For scollan it means "virtually everything is a

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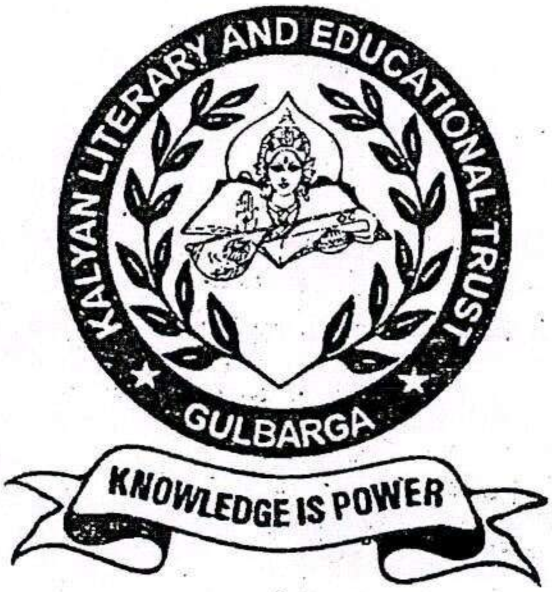
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Malgudi is the Breath of Narayan's Heart: A Critical Study

S. Anitha & Umakant S. Patil

Abstract:

In all novels of narayan, Malgudi is shown with its developments from the past to the present. Narayan initially does not show Malgudi of the present. Malgudi, like human beings, comes up from time to time with many conflicts and divisions of its community. Malgudi changes as India changes from Agricultural hub to the 20th century industrial society. The transitional period affected Narayan's life, which redies him to prepare a platform where he can begin the Journey of Malgudi of South India. The community in Malgudi comprises a very conservative atmosphere, and there exists a smaller group of a new generation. This new generation is always in conflict with the agrarian society and the result of which is the tussle between them. Narayan focuses much on the development of the characters who go through many places away from Malgudi.

S. Anitha: Ph.D. Research Scholar, Shri Venkateshwara University, Gajraula, Amroha (UP) India.
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Keywords: Malgudi, Customs, Indian tradition, Generations, Memphi hills, Sarayu, Modern Civilization.

Malgudi is the place which plays a vital role in R.K. Narayan novels. For Narayan, Malgudi is not just a geographical place or imaginary place, for him, it is the breath of his heart. He likes his characters in the novel. He picturises not only their manners but also fashion, sprit, habits, activities, educational scenario, the status of the economy and condition of the people under the traditional and religious atmosphere. Thus he presents his characters realistically. Even a person of another country can understand the whole of Indian by reading his novels.

Narayan, as a realist, has a minute observation capacity, especially he observes a variety of customs, traditions, rituals, and beliefs. The foundation of Indian tradition is family. Narayan has great concern for family relationships and love between relatives. His all most all characters like Krishnan, Raju, Maragayya, Sampath are of a typical Hindu joint family. They are very much in a close bond with their family members. Modernity might have hit all the spheres of life, but it has failed in destroying the strength of the Indian joint family system. Narayan leaves no stone unturned in depicting the beauty of the bondage which a traditional Indian family has for all members.

Indian Family for R.K. Narayan is not just a bunch of people, but it is a kind of interconnection between the hearts of the members of a family. Everybody is an independent entity with his or her rights. Their actions, feelings, and thought processes connect one another, but when they do not try to link or bridge the gap between them, it ultimately ends up in a loss. However, due to the advent of modernity and artificiality, the Indian joint family system s breathing its last. Nevertheless, time with its tide changes everything and creates a gap between the old and the new generations. It is because of the attitude, thoughts, and activities, the gap between the old and the new widens, and its consequence s micro families. One ca[illegible]ee the contention between the old and the new in many of Narayan's novels. Families can be intact only

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The Role Of Women In The History Of India
(Ancient-Modern)

Jyothsna Premkumar
Karnatak Arts,Science & Commerce College Bidar

"A man without a woman is in only half a man"

Introduction:

"All The World Is A Stage Hete All Men And Women Are Merely Actors And Actresses, They Have Their Entrance And Exists"

From this quotation one can clearly understand that every human being has equal Rights, privileges, position, status,, duties etc. Here on the earth the male and female are the two basic components of our human society depending upon earth other and next of them Constitutes about half of the population but since the ancient period, in India women have not been given equal rights, privileges with men They are suffering since vedic age.Therefore, it is necessary to analyze the status of women in the history of ancient and modern age. During the epic period the history of female may be regarded as an golden age women had been accorded an honorable status in the society, most if the female characters in Ramayana and MAHABHARAT were well respected

In ancient India the positions of women does not appear to have been a very happy one. Their freedom was extremely limited. The general view appears to be that they had to be under the care of parents in their childhood under the protection of their husbands in their youth and in the old age they had to be under the control of their sons but during the Buddhist period while accepting the biological and physical difference between period while accepting the biological and physical differences between the two sexes it doesn't consider men and women to be equally useful to the society.

In the medieval period, Polygony and purdah systems were practiced during the muslim period, women were restrained through the 'Purdah' system and the movement outside was checked. Thus the Purdah system affected their education. It also made women to be dependent on men for external work. Many siants like, Chaitanya , Nayak, Meera, Kabir, Ramdas, Tulsi and Tukaram propogated in favor of women's right to freedom to women and resulted in securing some social freedom too. First the Purdah system was abolsihed later so on. It is seen that Razia Sultan, fought like a man during her region but society did not allow her to have the position of a man.

Many social reformers like Rajaram Mohan Roy, Eshwar Vidhya Sagar, Mahanshi Karve, Swamy Vivekananda etc. Protested against the sati system Purdah system, child marriage and showed interest towards women rights in the society some women also organized many programs regarding education, political affairs,rights for women in society such as Bhagini, Nivedita, Anne Besant, Marget, cousin Sarojini Naidu, Pandit Ramabai, etc.....

Women had equal rights in social and religious field but had limited rights in economic field.
As we all know that, The Rig-Vedic period was a free society. The Aryans evidently preferred male child to female child. However, females we're free as their male counterparts. Girls studied the Veda and fine arts. Women never observed purdha in Vedic period. They enjoyed freedom in selecting their mates. But divorce was not permissible to them as comparing to modern period. Women got equal chances, rights and privileges not only within the house but in the society. Women can stand with men all walks of life.

During the ancient period of Indian history female had no rights for freedom to economic production and occupation bit in the modern age women are getting the economical and occupation freedom. She can work with man. In the present society and earning more than men status of Indian women during the British rule lowered like, sati system, child marriage education for girls etc.

The status of women In the ancient period, there were no such equal rights, position, privileges as modern age during ancient period sometimes women got a little breath for their rights but were disappointed soon. During the Rig-Vedic society was a free society. The Aryans evidently preferred male child to female child. Girls studied Veda and fine arts. Women never observed Purdah Veda period but divorce was not permissible to them as comparing to modern age thought women were suffered they had rights, chances, privileges on in the house but not outside in the society as modern age British government influenced the women education and in 1824 organization of "CHRIST MISSION" established a school for girls in Bombay then Lord Dalhousie the governor of British also game much scope for the women education in India during modern age.

One such pioneer I would like to add i.e MOTHER TERESA

MOTHER TERESA

Mary Teresa commonly known as Mother Teresa and honoured in the Catholic Church as Saint Teresa of Calcutta, was an Albanian-Indian Roman Catholic nun and missionary. Mother Teresa grew famous for humbly ministering to lepers, the homeless and the poorest of the poor in the slums of Calcutta (otherwise known as Kolkata), India. She was proclaimed a saint by the Catholic Church in 2016.

On her arrival in India, she, began by working as a teacher; however, the widespread poverty of Calcutta made a deep impression on her, and this led to her starting a new order called "The missionaries of charity".The primary objective of this mission was to look after people ,who nobody else was prepared to look after. Mother Teresa felt that serving others was a fundamental principle of the teachings of Jesus Christ. She often mentioned the sayings of Jesus.

One of her quote said that:

"love cannot remain by itself –it
has no meaning. Love has to be
put into action, and that action is service".-Mother Teresa

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The Role And Status Of Women In India

Shivrani Jaising Thakur
Karnataka Arts, Science & Commerce College Bidar

The role and status of women in India is a very hot issue that is passionately debated every day, as ever more women become conscious of the inequalities and bias they suffer from. All around the world, women are an untapped "resource" to fight poverty and violence. And even though their potential has been very clearly revealed time and again in difficult circumstances (world wars, independence movements) men have too often lost sight of it in times of stability.

"The best thermometer to the progress of a nation is its treatment of its women. There is no chance for the welfare of the world unless the condition of women is improved. Woman has suffered for aeons, and that has given her infinite patience and infinite perseverance.

The idea of perfect womanhood is perfect independence. There is no hope of rise for that family or country where there is no estimation of women, where they live in sadness." (Swami Vivekananda)

The above quoted lines, famously uttered by a 19th century Indian monk way before India woke up to its present status of being an independent and recognised nation-state, addresses an insight which informs the development discourse all over the world today

India's struggle for freedom is one such instance in history where women had stepped out of their regular roles as home-makers, mothers and wives to shoulder the responsibility of sculpting the concept of a new nation amidst the conflict between the people and the colonial state.

While they were at it, they had stood shoulder to shoulder with their men-folk to rally the masses to the cause, face bullets, picket shops, and participate in propaganda making. They embodied self-sufficiency as Gandhi had first visualised through the skill of spinning using a "charkha" (spinning machine for household spinning of cloth).

The worth of a civilization can be judged from the position that it gives to women. Of the several factors that justify the greatness of India's ancient culture, one of the greatest is the honoured place ascribed to women. Manu, the great law-giver, said long ago, 'where women are honoured there reside the gods'. According to ancient Hindu scriptures no religious rite can be performed with perfection by a man without the participation of his wife. Wife's participation is essential to any religious rite. Married men along with their wives are allowed to perform sacred rites on the occasion of various important festivals. Wives are thus befittingly called 'Ardhangani' (betterhalf). They are given not only important but equal position with men.

But in the later period the position of women went on deteriorating due to Muslim influence. During the Muslim period of history they were deprived of their rights of equality with men. They were compelled to keep themselves within the four walls of their houses with a long veil on their faces. This was definitely due to Islamic influence. Even today in some Islamic countries women are not allowed to go out freely. The conservative regimes of Iran and Pakistan, for example, have withdrawn the liberties given to women folk by the previous liberal governments. Even in India the Muslim women are far more backward than their Hindu, Christian and Sikh counterparts. The sight of Muslim women walking with long 'Burkas' (veils) on their person is not very rare. The women are, as a matter of fact, regarded as captive and saleable commodities in Muslim families. One man is allowed to have so many wives with the easiest provision of divorce. The husband can divorce a wife just by saying 'I divorce you' under the provision of Muslim laws. This is what the emperors did hundred years back and the men are doing it even now in almost all Islamic countries. Even in this last phase of the twentieth century rich and prosperous men of Islamic countries keep scores of wives in their harems. It was natural outcome of the Muslim subjugation of India that woman was relegated to a plaything of man, an ornament to decorate the drawing room. Serving, knitting, painting and music were her pastimes and cooking and cleaning her business.

But all this should not lead us to conclude that the women should look down upon domestic life. The main sphere of action for them who have not taken up jobs outside should be essentially a happy home which is their real kingdom and where their sweet manners and mature advices as wife, mother, sister and daughter make tremendous effects on the male members of the family. The progress of a nation depends upon the care and skill with which mothers rear up their children. The first and foremost duty of Indian women should, therefore, be to bring forth noble generations of patriots, warriors, scholars and statesmen. Since child's education starts even in the womb and the impressions are formed in the mind of a child while in mothers arms women have to play a role of vital importance. They have to feel and realise at every step of their life that they are builders of the fate of our nation since children grow mainly in mothers arms. They should also discourage their husbands and sons from indulging in bribery and other corrupt practices. This they can do only when they learn the art of simple living by discarding their natural desires for ornaments and a living of pomp and show. In many cases families have been running in deficit due to the extravagance of the housewives in maintaining a high standard of living. The result is that the earning male members of the family are forced to fill up the gap in the budget by corrupt practices. Corruption has been so far the greatest impediment in way to India's progress. Minus corruption India would have been one of the most developed nations of the world.

There is no denying the fact that women in India have made a considerable progress in the last fifty years but yet they have to struggle against many handicaps and social evils in the male dominated society. The Hindu Code Bill has given the daughter and the son equal share of the property. The Marriage Act no longer regards woman as the property of man. Marriage is now considered to be a personal affair and if a partner feels dissatisfied she or he has the right of divorce. But passing of law is one thing and its absorption in the collective thinking of society is quite a different matter. In order to prove themselves equal to the dignity and status given to them in the Indian Constitution they have to shake off the shackles of slavery and superstitions. They should help the government and the society in eradicating the evils of dowry, illiteracy and ignorance among the eves. The dowry problem has assumed a dangerous form in this country. The parents of the girls have to pay thousands and lacs to the bridegrooms and their greedy fathers and mothers. If promised articles are not given by the parents of brides, the cruel and greedy members of the bridegrooms' family take recourse to afflicting tortures on the married women. Some women are murdered in such cases. The dowry deaths are really heinous and barbarous crimes committed by the cruel and inhumane persons. The young girls should be bold enough in not marrying the boys who demand dowry through their parents. The boys should also refuse to marry if their parents demand dowry. But unfortunately the number of such bold and conscientious boys is very few. Even the doctors, engineers, teachers and the administrative officers do not hesitate in allowing themselves to be sold to the wealthy fathers of shy and timid girls. Such persons have really brought disgrace to their cadres in particular and society in general. The government should enact stringent laws to afflict rigorous punishment on dowry seekers, women's murderers and rapers.

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ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ
ಮುಖ್ಯಸ್ಥರು, ಕನ್ನಡ ಸಾಹಿತ್ಯ ವಿಭಾಗ,
ಕರ್ನಾಟಕ ಕಲಾ ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ

ಬಿದಿರಿಕೋಟೆ ಎನ್ನುವುದು ಸಮುದ್ರಪಾತಳಿಯಿಂದ 715ಮೀ. ಎತ್ತರದ ಕೆಂಪು ಗಟ್ಟಿಯಾದ ಶಿಲೆಯ ಮೇಲೆ ನಿಂತಿರುವ ಒಂದು ಸ್ಥಳ ಇದನ್ನು ಧರಿ(ದಿಜಿ) ಎಂದು ಕರೆಯುತ್ತಾರೆ. ಈ ಧರಿ(ಬೆಟ್ಟದ)ಯ ಉತ್ತರ ದಿಕ್ಕಿನ ಇಳಿಜಾರಿನಲ್ಲಿ ಪ್ರಾಚೀನಕಾಲದ ಬೊಮ್ಮಗೊಂಡನ ಕೆರೆ ಇದೆ. ಈ ಕೆರೆಯ ದಂಡೆಯ ಮೇಲೆ ಬೀದಿರ ಮೆಳೆ ಇದ್ದು ಸ್ಥಳವನ್ನು 'ಬಿದಿರಕೋಡು' ಎಂಬ ದ್ರಾವಿಡ ಮೂಲದ ಹೆಸರಿನಿಂದ ಕರೆಯಲ್ಪಡುತ್ತಿದ್ದಿರಬಹುದು. ಡಾ॥ಆರ್.ಎಂ.ಷಡಕ್ಷರಯ್ಯ ಅವರು ತಮ್ಮ ಮಾಂಜರಾನದಿಯ ಸಂಸ್ಕೃತಿ ಮಹಾಪ್ರಬಂಧದಲ್ಲಿ ಬೀದರ ಜಿಲ್ಲೆಯು ಮೊದಲು ಬಿದಿರುಮೆಳೆ ಹಾಗು ಇತರ ಮರಗಳಿಂದ ಕೂಡಿದ ದಟ್ಟವಾದ ಅರಣ್ಯವನ್ನು ಹೊಂದಿರುವ ಹೆಚ್ಚಿನ ಮಳೆ ಹೊಂದಿದ್ದ ಜೌಗು ಪ್ರದೇಶವಾಗಿತ್ತೆಂದು ಆನೆ, ಜಿಂಕೆ ಮುಂತಾದ ಕಾಡುಪ್ರಾಣಿಗಳಿಂದ ಕೂಡಿತ್ತೆಂದು ಐತಿಹಾಸಿಕ ಆಧಾರಗಳಿಂದ ಸಾಧಿಸಿ ತೋರಿಸಿದ್ದಾರೆ. ಈ ಬಿದಿರ ಕೋಡಿನಿಂದ ಪಶ್ಚಿಮಕ್ಕೆ 3–4ಕಿ.ಮೀ. ಅಂತರದಲ್ಲಿ ಬಿದಿರ ಕಾಯಕವನ್ನು ಮಾಡಿಕೊಂಡಿದ್ದ 12ನೆಯ ಶತಮಾನದ ಮೇದಾರ ಕೇತಯ್ಯ ಶರಣನ ಗ್ರಾಮ ಚಿದರಿ ಮತ್ತು ಅಲ್ಲಿ ಅವನ ಸಮಾಧಿಗಳಿವೆ. 18ನೆಯ ಶತಮಾನದ ಅಂಬಲಿಗೆ ಚೆನ್ನಮಲ್ಲನ ವೀರಸಂಗಯ್ಯನ ಚೌಪದಿಯಲ್ಲಿಯೂ ಬೀದರ ಪಟ್ಟಣವನ್ನು ಬಿದಿರೂರುಪುರ ಎಂದು ಕರೆಯಲಾಗಿದೆ. ಈಗಲೂ ಬೀದರಿನ ಬಿದಿರ ಬೇಲಿಗಳು ಸಾವಿರಾರು ಕಡೆ ಹುಲಸಾಗಿ ಬೆಳೆದಿರುವುದು ಕಂಡುಬರುತ್ತದೆ. ಪೌರಾಣಿಕ ಉಲ್ಲೇಖವಾಗಿರುವ ವಿದರ್ಭ, ಉರ್ದುವಿನ್ ಬೇ-ಡರ್(ಭಯವಿಲ್ಲದ) ಕನ್ನಡ ಬೇಡರು ಮುಂತಾದ ಊಹಾಪೋಹಗಳು ಬೀದರ ಅರ್ಥನಿಷ್ಪತ್ತಿಯ ಬಗ್ಗೆ ಮಾಡಲಾಗಿದ್ದು ಇವು ಐತಿಹಾಸಿಕ ಇವು ಐತಿಹಾಸಿಕ ಸತ್ಯದಿಂದ ದೂರವಾಗಿದೆ. ಕರ್ನಾಟಕದ ಸ್ಥಳನಾಮಗಳಲ್ಲಿ ಬಿದಿರೆ, ಬಿದರೂರು, ಬಿದನೂರು, ಮೂಡಬಿದಿರೆ, ಪಡುಬಿದಿರೆ ಮುಂತಾದ ಪ್ರಾಕೃತಿಕ ಸಸ್ಯವಾಚಕ ಸ್ಥಳನಾಮಗಳು ಹಜವಾಗಿ ಕಂಡುಬರುತ್ತವೆಯಾದುದರಿಂದ 'ಬಿದಿರು' ಸಸ್ಯವಾಚಕ ಶಬ್ದವೆ ಪರ್ಷಿಯನ್ ಉರ್ದು ಮುಂತಾದ ಭಾಷಾಪ್ರಭಾವ, ಅತಿಶಿಷ್ಟೀಕರಣ ಮುಂತಾದ ಪ್ರಕ್ರಿಯೆಗಳಿಂದಾಗಿ ಬೀದರ ಆಗಿದೆಯೆನ್ನುವುದು ಸ್ಪಷ್ಟವಾಗಿ ಕಂಡುಬರುತ್ತದೆ.

'ಬಿದಿರ ಕೋಡಿ'ನ ಹತ್ತಿರವಿದ್ದ ನೈಸರ್ಗಿಕ ಜಲಾಶಯಕ್ಕೆ ಒಡ್ಡು ಹಾಕಿ ತನ್ನ ಕುರಿಗಳಿಗಾಗಿ ವಿಶಾಲ ಕೆರೆಯನ್ನಾಗಿ ಮಾಡಿದ ವ್ಯಕ್ತಿ ಬೊಮ್ಮಗೊಂಡನಾಗಿರಬಹುದು. ಇಲ್ಲಿ ಮೊದಲು ಕಾಕತೀಯರು ಒಂದು ಸಣ್ಣ ಜಲದುರ್ಗವನ್ನು ರಚಿಸಿಕೊಂಡಿದ್ದು, ಇದು ಬಹಮನಿಯ ಕಾಲಕ್ಕೆ ರಾಜಧಾನಿ ಪಟ್ಟಣವಾಯಿತು.

ಬೀದರ ಇತರ ಗ್ರಾಮಗಳಂತೆ ಸ್ವತಂತ್ರ ಭೂಸೀಮೆಯನ್ನು ಹೊಂದಿರುವ ಗ್ರಾಮವಾಗಿ ಉಳಿಯಲಿಲ್ಲ. ಇದಕ್ಕೆ ಪ್ರತ್ಯೇಕ ಪೋಲಿಸ್ ಪಾಟೀಲ, ಮಾಲಿ ಪಾಟೀಲ್, ಕುಲಕರ್ಣಿ ಪ್ರತ್ಯೇಕ ಸರ್ವೆನಂಬರ್ ಇರುವ ಭೂಮಿ ಮುಂತಾದವುಗಳಾವುವು ಇಲ್ಲ. ಕೇವಲ ಬಹಮನಿ ಕಾಲದಲ್ಲಿ ರಾಜನು ಕಟ್ಟಿಸಿಕೊಂಡಿರುವ ತನ್ನ ನಿವಾಸದ ಸುತ್ತಲಿನ ಕೋಟೆಯೊಳಗಿನ ಆರ್ಕ(ಕಮಾನು) ಒಳಗಿನ ಖಿಲ್ಲೆಯಿಂದ ಸುತ್ತುವರಿದ ಸಾವಿರಾರು ಎಕರೆ ಭೂಮಿಯನ್ನು ಮಾತ್ರ ಬೀದರ ಎಂದು ಕರೆಯಲಾಗಿದೆ. ಈಗ ಇದು ಕೇಂದ್ರ ಸರಕಾರದ ಪ್ರಾಚ್ಯವಸ್ತು ಇಲಾಖೆಗೆ ಸೇರಿದೆ. ಈ ಖಿಲ್ಲೆಯ ಹೊರಗೆ ಅದರ ಸುತ್ತಲು ಇರುವ ಭೂಪ್ರದೇಶಗಳು ಸ್ವತಂತ್ರ ಜಾಹಗೀರು ಭೂಮಿ ಅಥವಾ ಪ್ರತ್ಯೇಕ ಆಡಳಿತಕ್ಕೊಳಪಟ್ಟ ಗ್ರಾಮ ಪ್ರದೇಶವಾಗಿವೆ. ಈಗ ಈ ಎಲ್ಲವು ಕೂಡಿಕೊಂಡಿರುವುದರಿಂದ ಕೋಟೆಯ ಒಳಹೊರಗಿನ ಭೂಪ್ರದೇಶ ಗ್ರಾಮಗಳೆಲ್ಲವನ್ನು ಸೇರಿಸಿಯೆ ಬೀದರ ಎಂದು ಕರೆಯಲಾಗಿದೆ.

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ಜನಪದ ಕಲೆ ಒಂದು ಅವಲೋಕನ

ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ
ಮುಖ್ಯಸ್ಥರು, ಕನ್ನಡ ಸಾಹಿತ್ಯ ವಿಭಾಗ,
ಕರ್ನಾಟಕ ಕಲಾ ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ

ಜನಪದ ಬದುಕಿನ ಇನ್ನೊಂದು ಸ್ವಾರಸ್ಯಪೂರ್ಣ ಕ್ಷೇತ್ರ ಜನಪದ ಕಲೆ. ಕಲೆ ಎಂದರೆ ನಮಗೆ ನೆನಪಿಗೆ ಬರುವುದು ಸೌಂದರ್ಯ. ಕಲೆಗಳ ಯಾವ ಪ್ರಕಾರ ತೆಗೆದುಕೊಂಡು ನೋಡಿದರೂ ಅಷ್ಟೆ. ಶಿಲ್ಪಕಲೆ ಮತ್ತು ಚಿತ್ರಕಲೆ ನೋಡಿ ಸಂತಸಗೊಳ್ಳಬಹುದು. ಇನ್ನಿತರ ಕಲೆಗಳಾದ ಹಾಡು, ಬಯಲಾಟ, ಭಜನೆ ಮತ್ತು ಕುಣಿತ ಮುಂತಾದವುಗಳನ್ನು ಕಿವಿಯಿಂದ ಕೇಳಿ, ಕಣ್ಣಿನಿಂದ ನೋಡಿ ಆನಂದಿಸಬಹುದು. ಈ ಆನಂದವೇ ಚೆಲುವಿಕೆ. ಒಟ್ಟಿನಲ್ಲಿ ಜನಪದ ಕ್ರಿಯಾಶಕ್ತಿಯ ಚುರುಕುಬುದ್ಧಿಯ ಅಭಿವ್ಯಕ್ತಿಯೇ ಜನಪದ ಕಲೆ ಎನ್ನಬಹುದು.

'ಸತ್ಯಂ ಶಿವಂ ಸುಂದರಂ' ಎನ್ನುವುದಾಗಲಿ, ಆಂಗ್ಲ ಕವಿ ಕೀಟ್ಸ್ ಹೇಳಿದ 'ಸತ್ಯವಾದುದೆಲ್ಲ ಸುಂದರ, ಸುಂದರವಾದುದೆಲ್ಲ ಸತ್ಯ' ಎನ್ನುವುದಾಗಲಿ ಕಲೆಗಳನ್ನು ಸೃಷ್ಟಿಸುತ್ತದೆ. ಅದರ ಮೇಲ್ಪದರವನ್ನು ಗುರುತಿಸುತ್ತದೆ. ನನ್ನ ವಿಷಯ ಜನಪದ ಕಲೆ ಕುರಿತಾದ್ದರಿಂದ ಹಳ್ಳಿ ಕಡೆ ಗಮನ ಹರಿಸೋಣ. ಹಳ್ಳಿ ಜನರು ಸಹೃದಯರು, ನಕ್ಕು ನಗಿಸುವ ಸ್ವಭಾವದವರು, ದೈವೀಭಕ್ತರು, ಕರುಣಾವಾಲರು, ಹೊಟ್ಟೆ ತುಂಬ ಉಂಡು, ಬೆವರು ಸುರಿಸಿ ಕೆಲಸ ಮಾಡುವರು. ರಾತ್ರಿ ಹೊತ್ತಾದಾಗ ದಿನದ ದಣಿವು ಕಳೆದುಕೊಂಡು ಹಾಡಿ–ಪಾಡಿ, ಕುಣಿದು ಕುಪ್ಪಳಿಸುವರು. ಈ ಪದ್ಧತಿ ಪ್ರಾಚೀನ ಕಾಲದಿಂದ ಬೆಳೆದುಬಂದಿದೆ. ಹಾಡುಗಾರಿಕೆ, ಕಥೆಗಾರಿಕೆ, ಚೌಡಿಕೆ, ಅಲಾಯಿ ಹೆಜ್ಜೆ, ಕರಡಿ ಮಜಲು, ಏಕತಾರಿ, ಗೀಗಿ, ಗೊಂಡರ (ಕಥೆಗಾರಿಕೆ), ಲಂಬಾಣಿ, ಹೋಲಿ, ಪುಗಡಿ ಡೊಳ್ಳು, ಹಲಗೆ, ನಂದಿಧ್ವಜ ಕುಣಿತ, ಪುರವಂತಿಕೆ, ಭಜನೆ, ಬಹುರೂಪಿ, ತೊಗಲುಗೊಂಬೆ ಹಾಗೂ ಸೂತ್ರದ ಗೊಂಬೆಯಾಟ, ಬಯಲಾಟ, ಡೊಂಬರಾಟ, ಹಾವುಗಾರಾಟ, ಸುಡಗಾಡ ಸಿದ್ದರಾಟ, ಕೋತಿಯಾಟ, ಕೋಳಿಗಳ ಕಾದಾಟ, ಕೋಣ ಹಾಗೂ ಎತ್ತಿನ ಕುಸ್ತಿ ಆಟ, ಕೋಲಾಟ ಮುಂತಾದವು ಅಚ್ಚ ಜನಪದ ಕಲೆಗಳೆನಿಸಿವೆ. ಇವುಗಳಲ್ಲಿ ಕೆಲವು ಪ್ರದರ್ಶನ ಕಲೆಗಳಾದರೆ, ಕೆಲವು ವೃತ್ತಿ ಮತ್ತು ಮನರಂಜಕ ಕಲೆಗಳು, ಕೆಲವು ಧಾರ್ಮಿಕ ಕಲೆಗಳು.

ಕೆಲವು ವರ್ಷಗಳ ಹಿಂದೆ ಇಂಥ ಕಲೆಗಳ ಪ್ರದರ್ಶನ ನಡೆದಾಗ ಅದೇನು ವೈಭವ? ಶ್ರೀಸಾಮಾನ್ಯರಲ್ಲದೆ, ಶ್ರೀಮಂತವರ್ಗದ ಹಳ್ಳಿಯ ಗಣ್ಯರು, ಕಲಾಕೋವಿದರಿಗೆ ಪ್ರೋತ್ಸಾಹಿಸುವುದರ ಜೊತೆಗೆ ಯೋಗಕ್ಷೇಮ ಕುರಿತು ವಿಚಾರಿಸಿ ಗೌರವದಿಂದ ಕಾಣುತ್ತಿದ್ದರು, ಹೊಗಳುತ್ತಿದ್ದರು. ಬೆಳಕಿಗೆ ತರುವಲ್ಲಿ ಪ್ರತಿಭೆ ಗುರುತಿಸುವಲ್ಲಿ ಮುಂದಾಗುತ್ತಿದ್ದರು. ವೇದಿಕೆ ಮಾಡಿಕೊಡುತ್ತಿದ್ದರು. ಒಟ್ಟಿನಲ್ಲಿ ಹೇಳುವುದಾದರೆ ಕಲಾಕಾರರಿಗೆ ಯಾವುದೇ ಕೊರತೆ ಅಂದಿರಲಿಲ್ಲ. ಹೀಗಾಗಿ ಜನಪದ ಕಲಾವಿದರು 'ಕಲೆಗಾಗಿ ಕಲೆ' ಎಂದು ತಮ್ಮ ಜೀವನ ಮೀಸಲಾಗಿಟ್ಟಿದ್ದರು.

ಹಬ್ಬ ಹರಿದಿನ ಉತ್ಸವಗಳಲ್ಲಿ ಕಲೆಗಳ ಪ್ರದರ್ಶನ ನಡೆಯುವುದು ದೊಡ್ಡಾಟ, ಸಣ್ಣಾಟ, ಬೀದಿಬಯಲಾಟ, ಕೋಲಾಟವ ಆಡುವುದೆ, ಮೊಹರಂದಂದು ಅಲಾಯಿಸುತ್ತ ಹಾಡಿ–ಕುಣಿದು ಕುಪ್ಪಳಿಸುವುದು, ಚಿಕ್ಕಮಗಳಿಗಾಗಿ ಮಾಟದಾಟಗಳು ಬೀದಿ ಕೇರಿಗಳಲ್ಲಿ ನಡೆಯುವುದು, ಶಕ್ತಿ ಪ್ರದರ್ಶನ ತೋರಿಸಲು ಜಂಗಿ ಕುಸ್ತಿ ಆಡುವುದು ಮನರಂಜನೆಗಾಗಿ ಬೆಂಕಿ ಹಾರುವುದು, ಹೆಣಸೋಗು ಹಾಗೆ ಹಲಗೆ ವಾದ್ಯದೊಂದಿಗೆ ಕುಣಿಯುವುದು ನಡೆಯುತ್ತಿತ್ತು. ಹೀಗಾಗಿ ಕಲಾವಿದರು ಖುಷಿಯಿಂದ ಜೀವನ ನಡೆಸುತ್ತಿದ್ದರು. ಬಗೆ ಬಗೆಯ ಕಲೆ ತೋರಿಸಿ ಪ್ರೇಕ್ಷಕರಿಂದ ಶಹಭಾಸಗಿರಿ ಪಡೆದುಕೊಳ್ಳುತ್ತಿದ್ದರು. ಹಳ್ಳಿಯಿಂದ ಹಳ್ಳಿಗೆ ಅಲೆದು ಕಲೆ ಪ್ರದರ್ಶಿಸಿ, ತಮ್ಮ ಪ್ರತಿಭೆ, ಕೀರ್ತಿ ಹೆಚ್ಚಿಸಿಕೊಂಡು ಸತ್ಕಾರ ಸನ್ಮಾನ ಮಾಡಿಸಿಕೊಂಡು, ಬಿರುದಾವಳಿ ಪಡೆದುಕೊಳ್ಳುತ್ತಿದ್ದರು. ಗಣ್ಯವ್ಯಕ್ತಿಗಳು ಪ್ರತಿಭಾವಂತ ಕಲಾವಿದರ ಬಗ್ಗೆ ವಿಶೇಷ ಕಾಳಜಿ ವಹಿಸಿ ಅವರ ಆಶೆ–ಆಮಿಷಗಳನ್ನು ಈಡೇರಿಸಿ ಕಲೆ

ಬುಲಾಯಿ ಹಾಡುಗಳು ಒಂದು ಪರಾಮರ್ಶೆ

ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ
ಮುಖ್ಯಸ್ಥರು ಕನ್ನಡ ಸಾಹಿತ್ಯ ವಿಭಾಗ,
ಕರ್ನಾಟಕ ಕಲಾ ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ

ಬೀದರ ಜಿಲ್ಲೆ ಜನಪದ ಸಾಹಿತ್ಯದ ನೆಲೆ-ಸೆಲೆ ಎಲ್ಲವೂ ಆಗಿದೆ. ಮಹಾರಾಷ್ಟ್ರ ಮತ್ತು ಆಂಧ್ರದ ಗಡಿಯನ್ನು ಹೊಂದಿಕೊಂಡ ಈ ಜಿಲ್ಲೆ ಸಮ್ಮಿಶ್ರ ಸಂಸ್ಕೃತಿಗೆ ಒಳಗಾಗಿರುವುದರಿಂದ ಇಲ್ಲಿ ಮಿಕ್ಸೆಡ್ ಜಾನಪದ ಸಾಹಿತ್ಯವನ್ನೇ ಕಾಣುತ್ತೇವೆ. ಹೆಣ್ಣು ಮಕ್ಕಳ ಹಾಡುಗಳು, ಗಂಡು ಮಕ್ಕಳ ಹಾಡುಗಳು, ಮಕ್ಕಳ ಹಾಡುಗಳು, ಜನಪದ ಕಲೆಗಳು ಇನ್ನೂ ಜೀವಂತವಾಗಿವೆ. ಇವುಗಳ ರಾಶಿ ಮಾಡುವ ಸಂಶೋಧಕರ ಕೊರತೆ ಹೆಚ್ಚಿದೆ. ಆದ್ದರಿಂದ ಜಿಲ್ಲೆಯ ಜನಪದ ಸಾಹಿತ್ಯ ನಶಿಸಿಹೋಗುತ್ತಿದೆ. ಹಾಗಾಗದಂತೆ ನೋಡಿಕೊಂಡು ಹೋಗಬೇಕಾದ್ದರಿಂದ ಅಲ್ಪ ಪ್ರಯತ್ನಕ್ಕೆ ಕೈಹಾಕಿ ಈ ಲೇಖನ ಬರೆಯಲಾಗಿದೆ.

ನಾರಿಯರ ಹಬ್ಬವೇ ನಾಗರಪಂಚಮಿ ಹಬ್ಬ. ಈ ಹಬ್ಬದ ಸಂದರ್ಭದಲ್ಲಿ ನಾರಿಯರು ಹಾಡುವ ಹಾಡುಗಳೇ ಭುಲಾಯಿ ಹಾಡುಗಳು. 'ಭುಲಾಯಿ' ಅನ್ನುವ ಪದ ಉರ್ದುವಿನ 'ಬಹಲಾವ್' ಶಬ್ದದಿಂದ ಬಂದಿರಬೇಕೆಂದು ಅನಿಸುತ್ತದೆ. ಬಹಲಾವ್ ಎಂದರೆ ಮನರಂಜನೆ ಎಂದರ್ಥ. ಮನರಂಜನೆಯ ಪ್ರತೀಕವಾದ ಬುಲಾಯಿ ಹಾಡುಗಳು ರಜಾಕಾರರ ಹಾವಳಿ ಪೌರಾಣಿಕ ಕಥೆಗಳು ಹಾಗೂ ಐತಿಹಾಸಿಕ ಕಥೆಗಳು ಘಟನೆಗಳಿಂದ ಕೂಡಿವೆ. ರಜಾಕಾರ್ ಎಂದರೆ 'ಸ್ವಯಂ ಸೇವಕ' ಎಂದರ್ಥ. 1948ರ ರಜಾಕಾರರು (ಮುಸ್ಲಿಂ ಸ್ವಯಂಸೇವಕರು) ಹಿಂದೂಗಳ ಮೇಲೆ ಮಾಡಿದ ದಾಂಧಲೆ ಕುರಿತಾದ ಹಾಡುಗಳೇ ರಜಾಕಾರರ ಹಾವಳಿ ಹಾಡುಗಳು. ಇಂಥ ವಿವಿಧ ಬಗೆಯ ಹಾಡುಗಳು ಬೀದರ್ ಜಿಲ್ಲೆ ಅಲ್ಲದೆ ಮಹಾರಾಷ್ಟ್ರದ ಕೆಲವು ಕಡೆಗಳಲ್ಲಿ ಹಾಡುವ ಪರಿಪಾಠ ಇನ್ನೂ ಇದೆ.

ನಾಗಾರಾಧನೆಯು ನಾಗಪಂಚಮಿ ಹಬ್ಬ. ಇದು ಶ್ರಾವಣ ಮಾಸದ ಶುದ್ಧ ಪಂಚಮಿಯಂದು ಆಚರಿಸುವಂಥದು. ಶ್ರಾವಣ ತಿಂಗಳಲ್ಲಿ ಸುತ್ತಮುತ್ತಲೂ ಹಸುರು ಬೆಳೆದು ನಿಂತಿರುತ್ತದೆ. ಈ ದಿನಮಾನಗಳಲ್ಲಿ ಹಾವುಗಳ ಕಾಟವೂ ಹೆಚ್ಚು. ಈ ವಿಷಯದ ಕುರಿತು ಒಂದು ಜನಪದ ಕಥೆಯಿದೆ. ಬಡಪಾಯಿಯಾದ ಅಣ್ಣ ತಂಗಿಯನ್ನು ತವರಿಗೆ ಕರೆತರಲು ಬಂದ. ತಂಗಿ ಶ್ರೀಮಂತ ಮನೆತನದ ಸೊಸೆ. ತಂಗಿಯನ್ನು ಕರೆದುಕೊಂಡು ಹೋಗುತ್ತಿದ್ದ ಅಣ್ಣನಿಗೆ ತಂಗಿಯ ಮೇಲಿದ್ದ ಚಿನ್ನದ ಆಭರಣಗಳ ಮೇಲೆ ದುರಾಶೆಯುಂಟಾಯಿತು. ಅವನ್ನೆಲ್ಲ ಕೊಡು ಎಂದು ಕೇಳಿದನಂತೆ. ಆಕೆ ಸಂತೋಷದಿಂದ ಕೊಡಲು ಒಪ್ಪಿದಳು. ಅದಕ್ಕೂ ತಾಳದೆ ಆಕೆಯನ್ನು ಕೊಂದುಬಿಡಲು ಯೋಚಿಸಿ ಕಲ್ಲುಬಂಡೆಯೊಂದನ್ನು ಎತ್ತಿದ. ಅದರ ಕೆಳಗಿದ್ದ ಹಾವೊಂದು ಅವನನ್ನು ಕಚ್ಚಿ ಕೊಂದಿತು. ಇದನ್ನು ಕಣ್ಣಾರೆ ಕಂಡ ತಂಗಿ ನಾಗದೇವನನ್ನು ಪ್ರಾರ್ಥಿಸಿ ಅಣ್ಣನನ್ನು ಬದುಕಿಸಿದಳು. ಅಂದು ಶ್ರಾವಣ ಶುದ್ಧ ಚೌತಿ. ಅಂದಿನಿಂದ 'ನಾಗರಪಂಚಮಿ' ಹೆಣ್ಣು ಮಕ್ಕಳಿಂದ ಆಚರಿಸಲಾಗುವ ನಾಗಾರಾಧನೆಯ (ನಾಗರಪಂಚಮಿ) ಹಬ್ಬದ ದಿನವಾಗಿ ಹಾಗೂ ತವರುಮನೆಗೆ ಹೆಣ್ಣು ತರುವ ಹಬ್ಬವಾಗಿ ರೂಪ ಪಡೆಯಿತೆಂಬ ದಂತಕಥೆ ಚಾಲ್ತಿಯಲ್ಲಿದೆ.

ಆ ನಾಗರಪಂಚಮಿ ಹಬ್ಬದ ಕಥೆಯ ಜೊತೆಗೆ ಇನ್ನೊಂದು ಕಾರಣವೂ ಇದೆ. ಗಂಡನ ಮನೆಯಲ್ಲಿ ಅನುಭವಿಸಿದ್ದ ಕಷ್ಟಗಳ ಭಾರವನ್ನು ತವರು ಮನೆಯಲ್ಲಿ ಹಾಡಿ ಪಾಡಿ ಕುಣಿದು ಕುಪ್ಪಳಿಸಿ ಉಯ್ಯಾಲೆಯಾಡಿ ಹಗುರು ಮಾಡಿಕೊಳ್ಳುವ ಭಾವವನ್ನು ಪ್ರತಿನಿಧಿಸುವ ನಾಗರಪಂಚಮಿ ಸಂದರ್ಭದ ಅನೇಕ ಹಾಡುಗಳಿವೆ.

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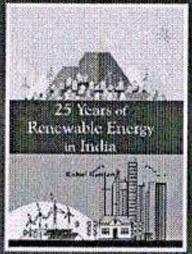
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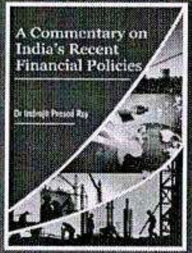
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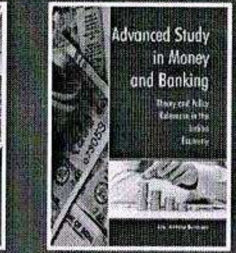
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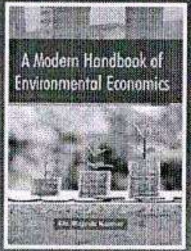
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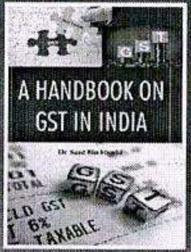
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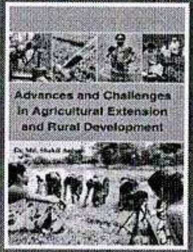
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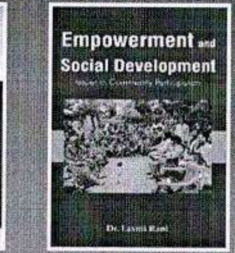
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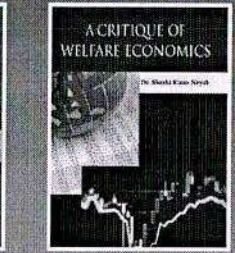
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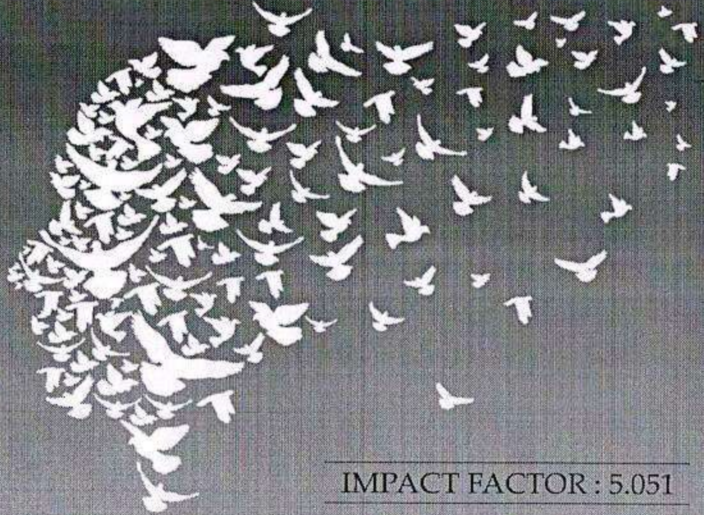
कला, मानविकी एवं वाणिज्य की मानक शोध पत्रिका



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नोट: पत्रिका में प्रकाशित लेखकों के विचार अपने हैं। उसके लिए पत्रिका/संपादक/संपादक मंडल को उत्तरदायी नहीं ठहराया जा सकता। पत्रिका से सम्बंधित किसी भी विवाद के निपटारे के लिए न्याय क्षेत्र दिल्ली होगा।

सम्पादकीय

लघु-मध्यम उद्यमों की परिभाषा की कवायद

एक लंबे समय से लघु उद्योगों की परिभाषा का विषय विवाद का कारण बना हुआ है। 1998 में जब अटल बिहारी वाजपेयी ने सत्ता का सूत्र संभाला था, उससे ठीक पहले तत्कालीन कांग्रेस सरकार ने लघु उद्योगों की परिभाषा में आमूलचूल परिवर्तन किया था। उससे पूर्व वे उद्योग जिनमें प्लांट और मशीनरी की लागत 60 लाख रूपए या उससे कम थी, लघु उद्योग कहलाते थे। लेकिन तत्कालीन सरकार ने इस सीमा को 60 लाख से बढ़ाकर अचानक 3 करोड़ (5 गुणा) कर दिया था। चुनाव से पूर्व वाजपेयी ने उसे अनुचित बताया था और उनकी सरकार आने पर उसे बदलकर 1 करोड़ करने का वादा किया था। इस वादे को निभाते हुए वाजपेयी सरकार ने लघु उद्योगों की परिभाषा को पुनः बदलते हुए, उसमें प्लांट और मशीनरी की लागत की सीमा को घटाकर 1 करोड़ कर दिया। लंबे समय तक यह विवाद थमा रहा। इस बीच वर्ष 2006 में एमएसएमई अधिनियम लागू किया गया, जिसके अनुसार एस.एस.आई (लघु पैमाने के उद्योगों) के स्थान पर एक नई परिभाषा एमएसएमई (माइक्रो, स्माल, मीडियम एंटरप्राइज) लागू हो गई। इसमें दो प्रमुख बदलाव आए।

एक, उद्योग के स्थान पर उद्यम शब्द का उपयोग प्रारंभ किया गया और दूसरा लघु के साथ-साथ मध्यम श्रेणी के उद्यम नाम का एक और वर्ग इसमें शामिल किया गया। तर्क यह था कि लघु उद्यमों को मिलने वाले लाभ जैसे सरकारी खरीद में प्राथमिकता, वित्त में रियायत आदि का लाभ छिन जाने के भय से लघु उद्यमों को विस्तार करने में झिझक होती थी। मध्यम श्रेणी के उद्यमों को भी परिभाषा में शामिल करने पर यह झिझक समाप्त हो जाएगी। नई परिभाषा के अनुसार सूक्ष्म (माइक्रो) उद्यम में प्लांट एवं मशीनरी में निवेश की सीमा 25 लाख, लघु उद्यम में यह सीमा 5 करोड़ और मध्यम श्रेणी के उद्यम में प्लांट एवं मशीनरी में निवेश की सीमा 10 करोड़ रखी गई।

यह परिभाषा अभी तक लागू रही है। लेकिन केन्द्र में नरेन्द्र मोदी सरकार के कार्यभार ग्रहण करने के बाद इस परिभाषा में बदलाव की कवायद चल रही थी। इस बीच एक नए एमएसएमई एक्ट हेतु तैयारी शुरू हुई। इस हेतु विधेयक अभी संसद में प्रस्तावित है। सरकार ने एमएसएमई की परिभाषा को बदलकर, सीमा को प्लांट एवं मशीनरी से बदल कर 'टर्न ओवर' के आधार पर करने का प्रस्ताव काफी दिनों से आधिकारिक हलकों से चल रहा था। लेकिन इसके विरोध के चलते, सरकार ने परिभाषा प्लांट एवं मशीनरी में निवेश और 'टर्न-ओवर' दोनों के आधार पर करना तय किया और इस हेतु 1 जून 2020 को एक अध्यादेश जारी कर सूक्ष्म, लघु और माध्यम उद्यमों के लिए निम्न परिभाषा निश्चित की है।

1. सूक्ष्म उद्यम वह है जिसमें संयंत्र और मशीनरी अथवा उपस्कर में एक करोड़ रूपए से अधिक का निवेश नहीं होता है, तथा उसका करोबार पांच करोड़ से अधिक नहीं होता है।
2. लघु उद्यम वह है जिसमें संयंत्र और मशीनरी अथवा उपस्कर में पांच करोड़ रूपए से अधिक का निवेश नहीं होता है, तथा उसका करोबार 50 करोड़ से अधिक नहीं होता है।

मध्यम उद्यम वह है जिसमें संयंत्र और मशीनरी अथवा उपस्कर में 50 करोड़ रूपए से अधिक का निवेश नहीं होता है, तथा उसका करोबार 250 करोड़ से अधिक नहीं होता है।

इस अधिसूचना को 1 जुलाई 2020 से लागू कर दिया गया है।

चूंकि कई उद्यम ऐसे रहते हैं, जहां संयंत्र, मशीनरी एवं उपस्कर तो कम होते हैं, लेकिन उनकी टर्नओवर काफी ज्यादा होती है। ऐसे में इस प्रकार के भारी कारोबार करने वाले उद्यम भी एमएसएमई की श्रेणी में आ जाते थे। इसलिए 'निवेश' और 'कारोबार' दोनों के समिश्रण से उस समस्या का समाधान तो हो गया है। लेकिन वर्तमान अध्यादेश के अन्य प्रावधानों के चलते यह विवादों के घेरे में है। लघु उद्योगों के कई संगठन इस अध्यादेश का पुरजोर विरोध भी कर रहे हैं।

इन संगठनों की पहली आपत्ति इस बात को लेकर है कि एमएसएमई की इस परिभाषा में विदेशी पूंजी प्राप्त उद्योगों को अलग नहीं किया गया है। देशीय लघु उद्यमों का मानना है कि ऐसे में बड़े विदेशी निवेशक लघु उद्यमों का स्थान हस्तगत कर लेंगे। उदाहरण के लिए यदि कोई विदेशी उद्यमी 50 करोड़ रुपए तक के निवेश और 250 करोड़ तक कारोबार के साथ मध्यम श्रेणी के उद्यम के लाभ हस्तगत कर सकेंगे और भारतीय उद्यमों को नुकसान होगा। उनका यह भी कहना है कि पूर्व की परिभाषा के अनुसार मात्र 0.007 प्रतिशत उद्यम ही मध्यम श्रेणी में थे। नई परिभाषा में तो लघु उद्यम कहलाएंगे क्योंकि 10 करोड़ से कम निवेश है। अब जो भी मध्यम लगेंगे वह सब नये लगेंगे। इसलिए वर्तमान के मध्यम दर्जे के उद्यमों को तो कोई लाभ नहीं मिलेगा, लेकिन बड़ी पूंजी के साथ नए उद्यमों को ही नई परिभाषा का लाभ होगा।

नए अध्यादेश पर दूसरी आपत्ति यह है कि इस अध्यादेश में पूर्व के एमएसएमई अधिनियम (2006) के अनुरूप मैन्युफैक्चरिंग और सेवा उद्यमों में भेद नहीं किया गया है। गौरतलब है कि एमएसएमई अधिनियम, 2006 के अनुसार सूक्ष्म उद्यमों में सेवा क्षेत्र में संलग्न उद्यमों की निवेश की सीमा मात्र 10 लाख रूपए थी, जबकि मैन्युफैक्चरिंगमें यह 25 लाख रूपए थी। लघु सेवा उद्यमों में निवेश की सीमा 2 करोड़ रूपए, मध्यम सेवा उद्यमों में यह 5 करोड़ रूपए ही थी। समझना होगा कि लघु मैन्युफैक्चरिंग उद्यम उनमें रोजगार सृजन के अवसरों के नाते जाने जाते हैं।समझना होगा कि सेवा क्षेत्र में रोजगार सृजन की संभावनाएं मैन्युफैक्चरिंग से बहुत कम होती है। इसलिए जब विषय रोजगार के लिए मैन्युफैक्चरिंग को बढ़ावा देने का हो तो सेवा क्षेत्र के उद्यमों को मैन्युफैक्चरिंग के समकक्ष रखना सही नहीं होगा। इसलिए ट्रेडिंग और असेम्बलिंग आदि सेवाओं को मैन्युफैक्चरिंग से भिन्न माना जाना ही सही होगा, अन्यथा मैन्युफैक्चरिंग के लिए प्रोत्साहन घटेगा।

नए अध्यादेश के संदर्भ में तीसरी अपत्ति यह है सूक्ष्म, लघु और मध्यम उद्योगों की परिभाषा को बदलने के संदर्भ में जहां लघु उद्यमों में निवेश (संयंत्र और मशीनरी अथवा उपस्कर में निवेश) की सीमा को 5 करोड़ से दुगना कर 10 करोड़ रूपए की गई है, लेकिन मध्यम श्रेणी के उद्यमों के लिए यह 10 करोड़ से बढ़ाकर 50 करोड़ (5 गुणा अधिक) कर दी गई है। यानि ऐसा प्रतीत होता है कि बड़े उद्यमों को भी एमएसएमई की श्रेणी में लाने का यह प्रयास है। इससे अभी तक के एमएसएमई का लाभ अब अपेक्षाकृत बहुत बड़े उद्यमों को भी मिलने वाला है। यह कुछ अटपटा और अजीब तो लगता ही है, वास्तवकि रूप से बड़ों को लाभ देने वाला है, क्योंकि वित्त, सरकारी खरीद आदि में अब बड़े उद्यमों की हिस्सेदारी बढ़ जाएगी, हालांकि कुछ मध्यम श्रेणी के उद्यमों की संख्या कुल उद्यमों का मात्र 0.007 प्रतिशत ही है।

इस अध्यादेश का एक अन्य महत्वपूर्ण पहलू जो ध्यान में आ रहा है कि एमएसएमई में विदेशी निवेश प्राप्त उद्यमों को भी शामिल रखा गया है। लघु उद्यम संगठनों का मानना है कि 50 करोड़ रूपए के बड़े निवेश वाले तथाकथित मध्यम श्रेणी के उद्यम, एमएसएमई के समस्त लाभों को हस्तगत कर लेंगे। इसलिए इन संगठनों की मांग है कि विदेशी निवेश प्राप्त उद्यमों को एमएसएमई परिभाषा शामिल नहीं किया जाना चाहिए।

एक अन्य आपत्ति यह है कि जब 'टर्न ओवर' यानि कारोबार का प्रश्न आता है तो उसमें से निर्यात के कारोबार को हटाकर देखा जाएगा। इस बात का कोई औचित्य नहीं है। क्योंकि यदि कोई बड़ा उद्यमी (या निर्यातक) जिसका संयंत्र और मशीनरी अथवा उपस्कर में तो निवेश कम है, लेकिन बड़ी मात्रा में निर्यात करता है तो वह देश के एमएसएमई के समकक्ष आ सकता है। उदाहरण के लिए यदि कोई फर्म 1000 करोड़ रूपए का निर्यात करती है और 250 करोड़ रूपए का कारोबार देश में करती है, लेकिन संयंत्र और मशीनरी में निवेश 50 करोड़ रूपए या कम है तो भी वह एमएसएमई की परिभाषा में आ जाएगी। यह अत्यंत अटपटा है।

हमें देखना होगा कि फर्मों को उसके आकार और कुल कारोबार के अनुसार ही वर्गीकृत किया जाना चाहिए। किसी भी हालत में निर्यात अथवा किसी और बहाने से बड़ी फर्मों को एमएसएमई की श्रेणी में लाया जाना, लघु उद्यमों को प्रश्रय देने के औचित्य को ही समाप्त कर देगा।

यानि कहा जा सकता है कि सरकार को वर्तमान नोटिफिकेशन पर नए सिरे से विचार कर सूक्ष्म, लघु और मध्यम दर्जे के उद्यमों को सही प्रकार से परिभाषित करना चाहिए, ताकि लघु उद्यमों को बढ़ावा देकर देश में रोजगार, वितरण में समानता, विकेन्द्रीकरण आदि के लक्ष्यों को भलीभांति प्राप्त किया जा सकता है।

संपादक

इस अंक में

भारतीय राष्ट्रीय आन्दोलन में छोटानागपुर प्रमण्डल के आदिवासियों द्वारा अंग्रेजों के खिलाफ 1857 के विद्रोह में योगदान: एक संक्षिप्त अवलोकन–डॉ॰ रवि शंकर 1
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नगरीय परिवार में पारिवारिक विलगाव: एक समाजशास्त्रीय अध्ययन–डॉ० शम्भू कुमार साहु 1408

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बिहार में असहयोग आंदोलन और शिक्षा–रश्मि रूपम 1411

राष्ट्रवाद के विकास में पंडित मोतीलाल नेहरू का योगदान–डॉ० रणजीत कुमार 1415

भारत में गरीबी के बदलते आयाम : एक अध्ययन–राकेश कुमार 1420

बदलते मूल्य एवं भारतीय दर्शन–सत्यप्रकाश तिवारी 1425

स्वामी दयानन्द सरस्वती के शैक्षणिक दर्शन के वर्तमान सन्दर्भ में समालोचनात्मक अध्ययन–शालू तिवारी 1429

आजाद हिन्द फौज: नेताजी, अंतर्राष्ट्रीय संबंध और सहयोग–पूजा शर्मा; डॉ० डी०एन० खुटे 1432

पत्रकारिता, राष्ट्रवाद तथा पंडित मोतीलाल नेहरू–डॉ० रणजीत कुमार 1439

जयप्रकाश नारायण और समाजवाद–डॉ० कुमार आलोक रंजन 1445

मोदलता की रचनाओं में व्यक्त दार्शनिकता का अध्ययन–डॉ० दिलीप कुमार झा 1451

नैषधीयचरितम् महाकाव्य में नल के व्यक्तित्व का मनोवैज्ञानिक अध्ययन–डॉ० अमृत कौशल 1459

भीड़ का मनोविज्ञान: हिंसा, हिंसक भीड़ और सोशल मीडिया–डॉ० मनोज कुमार सिंह 1464

अज्ञेय की साहित्यिक अवधारणाएँ–डॉ० अनिल कुमार 1467

संसदीय व्यवस्था, हिन्द स्वराज और गाँधी–डॉ० कुमारी विजेता 1471

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बिहार में असहयोग आंदोलन और किसान: सन्दर्भ और मुद्दे–डॉ० नेहा कुमारी 1489

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सविनय अवज्ञा आंदोलन और डॉ० राजेन्द्र प्रसाद–डॉ० विवेक कुमार 1498

समस्तीपुर शहरी क्षेत्र में गली व फुटपाथ के 10-14 वर्ष के बच्चों की संवेगात्मक स्थिति का एक अध्ययन–डॉ० पूनम कुमारी 1503

समकालीन हिन्दी कहानी की मूल प्रवृत्तियाँ–डॉ० विनय कुमार 1507

भारतीय दार्शनिक परंपरा में पर्यावरण–डॉ० बिरेन्द्र कुमार सिंह 1510

नैषधीयचरितम् महाकाव्य में प्रयुक्त विशिष्ट क्रियापद–डॉ० विवेक शर्मा 1513

अशोक एक महान सम्राट (268-232 B.C.)–डॉ० शिवेंदु आलोक 1522

दलितविमर्श: डॉ. अंबेडकर एक अध्ययन–डॉ० बाबुल कुमार 1528

बिहार की गोंड जनजाति पर आधुनिकीकरण का प्रभाव: एक भौगोलिक अध्ययन–डॉ० राकेश कुमार गोंड 1533

मधुबनी (मिथिला) से प्राप्त सूर्य की प्राचीन मूर्तियाँ: एक अध्ययन–डॉ० अखिलेश कुमार सिंह 1539

बाँका जिला में ग्रामीण बस्तियों का चरणबद्ध उद्धभव–डॉ० मनोज कुमार सुमन 1542

श्रमिक संत कवि रविदास : सामाजिक चेतना के प्रणेता–डॉ० रवि कुमार 1548

पिछड़ी जाति के प्रवासी मजदूरों में बेरोजगारी की समस्या एवं सामाधान (गया जिले के ग्रामीण क्षेत्र के विशेष सन्दर्भ में)–डॉ० संध्या कुमारी 1553

बिहार के प्राचीन इतिहास, संस्कृति एवं पुरातत्व की प्रासंगिकता–संजीत कुमार 1556
बौद्ध धर्म में भिक्षु एवं भिक्षुणी की भूमिका: एक अध्ययन–डॉ० उपेन्द्र कुमार 1559
नगरीय प्रसार: पटना नगर के संदर्भ में–डॉ० विकाश महतो 1563
प्राचीन बिहार में प्रचलित रोग एवं उनके उपचार: एक अध्ययन–डिम्पल 1568
नालंदा के प्रमुख अभिलेख और उसके विविध आयाम–डॉ० कृपा शंकर प्रसाद 1575
श्रीलाल शुक्ल के उपन्यासों में परिवार की टूटती-बनती अवधारणा–डॉ० प्रेम कुमार 1580
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निर्गुणधारा के कवियों की स्त्री-संबंधी धारणाएँ–राजेश कुमार राजन 1590
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वैदिककालीन आर्थिक जीवन : एक अध्ययन–राजेश कुमार सिंह 1598
ललितक उपन्यासमे चित्रित समाज–डॉ० गोपाल कुमार 1601
मिथिला का धार्मिक जीवन–डॉ० गुड़िया कुमारी 1606
कौटिल्य का कण्टक शोधन न्यायालय: एक अध्ययन–राम अवधेश कुमार यादव 1609
बिरसा मुंडा-एक करिश्माई विद्रोही और आदिवासी जननायक–बासुदेव शाह 1614
मध्यकालीन इतिहास में महिलाओ का स्थान–डॉ० मंजुली कुमारी 1617
संस्कृत साहित्य में परमात्मा की अवधारणा–डॉ० इंदु कुमारी 1624
बुढ़ापा और स्वास्थ्य सेवा सम्बन्धी आवश्यकताएं–डॉ० प्रज्ञा कुमारी 1627
नई शिक्षा नीति 2020: एक विश्लेषणात्मक अध्ययन–डॉ० जया 1631
व्यापार पूर्वानुमान : अर्थ, परिभाषा, प्रकार, आवश्यकता–डॉ० राकेश कुमार 1636
भारत छोड़ों आंदोलन का बिहार के समाचार पत्रों में अंकन–डॉ० अंगुरी बेगम 1639
भारतीय राजनीति में क्षेत्रियतावाद एवं भाषा का प्रश्न : एक अध्ययन–डॉ० सुधीर कुमार 1646
मातृ-शिशु-मृत्यु के कारण, निदान एवं इससे सम्बद्ध कल्याणकारी योजनाएं–डॉ० अस्मिता सिंह 1650
भारत छोड़ों आंदोलन: पृष्ठभूमि, प्रकृति एवं प्रभाव–डॉ० संजीव कुमार 1656
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भारत विभाजन पर आधारित हिंदी उपन्यास: एक अवलोकन–शरिफुज जामान; डॉ० रीतामणि वैश्य 1682
प्रेमन्द के साहित्य में जातीय एवं धार्मिक शोषण का स्वरूप–अंकिता कुमारी 1687

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भारतेन्दु और उनका युग–भोला प्रसाद यादव 1690

आधुनिक भारत, वैश्विक सम्बन्ध और सांस्कृतिक बदलाव–डॉ० सुनील कुमार 1695

शैलेंद्र शंकर के गीतों में जनक्रांति का उद्‌घघोष–डॉ० मनीषा मिश्रा 1698

श्रम के सौन्दर्य की अवधारणा और केदारनाथ अग्रवाल का काव्य–डॉ० कंचन गुप्ता 1702

उत्तर बिहार में बाढ़ से होने वाले क्षति का भौगोलिक अध्ययन–अमिता चन्दन 1707

अर्थशास्त्र मे वर्णित अंतरराज्यीय संबंध एवं गुप्तचर व्यवस्था–शिव कुमार सिंह 1712

बिहार में उद्योग और परिस्थितियां–डॉ० नवीन कुमार 1715

श्रीमदभगवतपुराण में ब्रह्मतत्त्व का अध्ययन–डॉ० वेद प्रकाश मिश्र; मधुमिता धाड.गडामाझी 1717

नवतुरियाक पृष्ठभूमिमे पारो–दीपक कुमार पटेल 1720

आधुनिक युग में सामाजिक पुनर्जागरण की प्रक्रिया–डॉ० प्रदीप कुमार सिंह 1724

वृंदावनलाल वर्मा के उपन्यासों में इतिहास और कल्पना–डॉ० विजय शंकर मिश्र 1735

समाजवादी परंपरा के अनुसार राज्य के स्वरूप के सिद्धांत–डॉ० सत्येन्द्र कुमार श्रीवास्तव 1738

राज्य का औचित्य और उद्देश्य–डॉ० कुमार रंजीत 1742

राजनीतिक प्रतिनिधित्व तथा भागीदारी के स्वरूप–डॉ० सरिता कुमारी 1746

प्रजातान्त्रिक भागीदारी–एक विवेचना–डॉ० सीता कुमारी 1749

उन्माद–सोनल कुमारी 1756

केन्द्र और राज्यों में बहुदलीय सरकारें–चंद्र विजय प्रकाश यादव 1760

वीर बहादुर सिंह पूर्वांचल विश्वविद्यालय, जौनपुर से सम्बद्ध वित्तपोषित व स्ववित्तपोषित महाविद्यालयों में कार्यरत् शिक्षकों की कार्य संतुष्टि का लिंगभेद के संदर्भ में तुलनात्मक अध्ययन –अजय कुमार यादव; डॉ० आशाराम 1765

शिक्षक एवं भाषा सृजनशीलता का अध्ययन–प्रज्ञा सिंह 1772

गाँधी दर्शन में ग्रामराज्य–दीक्षा 1777

हिन्दी साहित्य में सुभद्राकुमारी चौहान के काव्य में राष्ट्रीय भावना–डॉ० आर०पी० वर्मा 1780

शैक्षिक पर्यवेक्षण, निरीक्षण, परिवीक्षण एवं मूल्यांकन के रूप में प्राचार्य की भूमिका–रत्नेश कुमार जैन 1783

गाँधीवादी अहिंसक विचारधारा और विश्वशान्ति–डॉ० अनुजा रानी गर्ग 1793

सूफी मत: परम्परा एवं सिद्धान्त–डॉ० विश्वनाथ द्विवेदी 1798

ममता कालिया का उपन्यास 'नरक दर नरक': समसामयिक सामाजिक सन्दर्भों का दस्तावेज–डॉ० सुधा 1801

ममता कालिया के उपन्यासों में स्त्रीवादी आन्दोलन की अनुगूँज–डॉ० मनोज कुमार पाण्डेय 1805

विरह वेदना की कवयित्री- महादेवी वर्मा–डॉ० रश्मि कुमारी 1811

ममता कालिया के कथा - साहित्य में नारी-चित्रण–डॉ० नम्रता जैन 1815

तन्त्री वाद्यों की ऐतिहासिक पृष्ठभूमि–सुरेन्द्र कुमार; प्रो० (डॉ०) आरती श्योकन्द 1822

गणेश शंकर विद्यार्थी - पत्रकारिता और स्वाधीनता संघर्ष–डॉ० अनीता प्रकाश 1826

व्यावसायिक शिक्षा और महात्मा गांधी–डॉ० बृजेश कुमार पाण्डेय 1830

इंटरनेट पर गोपनीयता का अधिकार: साइबर खतरों के संदर्भ में एक अध्ययन–दीपेन्द्र नाथ पाठक 1834

पंचायती राज व्यवस्था में उभरता ग्रामीण नेतृत्व: जिला गाजियाबाद के विशेष संदर्भ में–अमित कुमार 1841

पंचायती राज व्यवस्था में उभरता ग्रामीण नेतृत्व: जिला गाजियाबाद का सांख्यिकीय अध्ययन–अमित कुमार 1847

जन आंदोलन के कवि: नागार्जुन–डॉ० ललिता कौशल 1854

राम की शक्ति पूजा: एक सार्वकालिक एवं सार्वदेशिक प्रासंगिक रचना–डॉ० रामलिंग भोसले 1860

'जंगल के फूल': संपोषित विकास की सहज दिशा–डॉ० सुजाता चतुर्वेदी 1864

लिंगभेद के सन्दर्भ में माध्यमिक स्तर पर अध्ययनरत विद्यार्थियों के मध्य विद्यालयी सामाजिक समावेषण: एक वर्णनात्मक अध्ययन–प्रो० पी० एस० त्यागी; सतीश बाबू 1871

ग्रामीण विकास कार्यक्रम और इंदिरा आवास योजना का योगदान: भरतपुर जिले के सन्दर्भ में–नवीन कुमार पहाड़िया 1877

ग्रामिण क्षेत्र के विविध वर्ग की महिलाओं का शिक्षा में सहभागिता - धुले (महाराष्ट्र) जनपद एक भौगोलिक अध्ययन–संजय बी० घोडसे 1883

पर्यटन उद्योग में रोजगार के अवसर - एक अध्ययन–डॉ० विजय ग्रेवाल; दीपिका यादव 1888

कविता के प्रतिमान और रामविलास शर्मा–आलोक कुमार सिंह 1892

स्नातक स्तर पर अध्ययनरत विद्यार्थियों के व्यक्तित्व का तुलनात्मक अध्ययन–बृजेश कुमार यादव; डॉ० बीना सिंह 1896

वर्तमान युग में योग का महत्त्व–डॉ० रीटा खन्ना 1900

स्कूलों में मानसिक स्वास्थ्य में सुधार : एक सांकेतिक अध्ययन–शिवानी 1906

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गीता पोस्ते

सहायक प्राध्यापिका, हिन्दी विभाग, कर्नाटक कला, विज्ञान एवं वाणिज्य महाविद्यालय, बीदर

भारतीय साहित्य में दार्शनिक चिंतन की पृष्ठभूमि पर्याप्त समृद्ध रहा है। आदि-ग्रंथ वेद से ही इसका विकास सूत्र स्पष्ट होने लगता है। तदुपरान्त साहित्य में इस चिंतन की एक परंपरा-सी दिखाई देती है जो दर्शन अनुभूत एवं साक्षात्कार सत्य की युक्ति-युक्त व्यवस्था के रूप में स्थापित है। तभी तो हिन्दी के छायावादी कवि सुमित्रानंदन पंत की अन्तर्मुखी दृष्टि स्वत: दर्शन का रूप धारण कर लेती है। दर्शन की ओर सहज प्रवृत्ति के कारण ही वह चाहता है कि 'अन्तर जग ही बहिर्जगत् बन जावें। बहिर्मुखी चेतना के सामने अन्तर्मुखी दृष्टिकोण को कुण्ठित होते देखकर वह चिंतित स्वर में कहता है-

बहिर्चेतना जाग्रत जग में, अन्तर्मानव निद्रित,
बाह्य परिस्थितियाँ जीवित, अन्तर्जीवन मूर्च्छित मृत।[1]

इसलिए कवि अन्तर्बाह्य जीवन पर विचार कर अन्तर्जीवन को परिष्कृत एवं परिमार्जित करने पर बल देता है। पंत में दर्शन के अनुरूप चिंतन की प्रवृत्ति है। द्रष्टा की दृष्टि-सूक्ष्मता के कारण ही वे अचिर में चिर के अन्वेषण को विश्व का महत्वपूर्ण दर्शन घोषित करते हैं। समग्र जीवन का दर्शन-मिश्रित काव्यात्मक मूल्यांकन करते हुए पंत लिखते हैं-

स्वर्ग शैशव स्वप्नों का जाल,
मंजरित यौवन सरस रसाल।
प्रौढ़ता, छाया वट सुविशाल,
स्थविरता, नीरव सायंकाल।।[2]

स्पष्टत: परम भावुक कवि तथा चिंतनशील पंत की काव्यधारा, उनके विकासशील कवि-मानस की उत्तरोत्तर बढ़ती हुई परिणति के चित्रों को उपस्थित करती है। शैशव से प्रौढ़ोत्तर तक की आयु में उनके कोमल ग्राहयित्री प्रतिभा से संपन्न मानस-चित्रपट पर अनेक वैविध्यपूर्ण चित्र अंकित होते रहे हैं। कवि की कारयित्री प्रतिभा ने इन सब चित्रों, बिम्बों और भावनाओं को अपनी कृत्तियों के पर्दे पर चलचित्रों की भाँति उपस्थित किया है। अत: उनके काव्यग्रंथ सहृदय पाठकों के लिए केलेडेस्कोप के समान नये तथा परिवर्तित होने वाली मान्यताओं और प्रभावों की छटा दिखलाते हैं। अपने काव्य में उपस्थित विविध दार्शनिक भावों के संदर्भ में कवि ने भारतीय व पाश्चात्य चिंतनधारा के महत्व को स्वीकार करते हु 'ज्योत्स्ना' के एक पात्र देवव्रत के स्वर में कहता है- ''जिस प्रकार पूर्व की सभ्यता अपने एकाकी आत्मवाद और आध्यात्म की सभ्यता अपने एकाकी प्रगतिवाद, विकासवाद और भूतवाद के दुष्परिणाम से विनाश के दलदल में डूब गयी। पश्चिम के जड़वाद की मांसल प्रतिमा में पूर्व के आध्यात्म प्रकाश की आत्मा भरकर एवं आध्यात्मवाद के अस्थिपंजर में भूत या जड़ विज्ञान के रंग रूपों को भरकर हमने आनेवाले युग की मूत्ति का निर्माण किया है।'' कवि मानवता का कल्याण चाहता है। तदर्थ वह अपने लिए यहाँ तक कहता है कि- ''भारतीय ही नहीं बल्कि मैं हूँ ग्रामीण हृदय के भीतर''[3], फिर भी यह सत्य है कि पंत में भारतीयता का अंश अन्य तीनों छायावादी कवियों की अपेक्षा कम है। संभवत: इसी कारण डॉ॰ नगेन्द्र ने कहा है कि- ''जहाँ दावा किया है वहाँ भी अभिव्यक्ति में अंत:करण का सहज वेग नहीं।''[4] पंत द्वारा अपने आपको शुद्ध भारतीय मान लेने पर भी उसमें जो संदेह उत्पन्न होता है वह इसी कारण कि वे बाह्य प्रभावों को शीघ्र ग्रहण करते

रहे हैं। पंत-काव्य के अनुशीलन से स्पष्ट है कि कवि अनेक विचारकों से प्रभावित रहा है। स्वयं कवि के शब्दों में- ''मैं अपने युग, विशेषत: देश की, प्राय: सभी महान विभूतियों से किसी न किसी रूप में प्रभावित हुआ है। वीणा-पल्लव काल में मुझ पर कवीन्द्र रवीन्द्र तथा स्वामी विवेकानन्द का प्रभाव रहा है, युगान्त और बाद की रचनाओं में महात्माजी के व्यक्तित्व तथा मार्क्स के दर्शन का, महात्माजी के देह-निधन के बाद की रचनाएँ जो युगपथ में संगृहित है, उनके प्रति मेरे हृदय की श्रद्धा का परिचायक है। कवीन्द्र रवीन्द्र के प्रति भी मेरी दो रचनाएँ युग पथ में प्रकाशित हो रही है। किन्तु इन सब में जो एक पूर्ण एवं संतुलित अंतर्दृष्टि का अभाव खटकता था, उसकी पूर्त्ति मुझे श्री अरविन्द के जीवन-दर्शन में मिली, और इस अन्तर्दृष्टि को मैं इस विश्व-संक्रांति-काल के लिए अत्यन्त महत्वपूर्ण तथा अमूल्य समझता हूँ। (मैंने अपने समकालीन लेखकों तथा विशिष्ट व्यक्तियों पर समय-समय पर स्तुति गान लिखने में सुख का अनुभव किया है। श्री अरविन्द के प्रति मेरी कुछ रचनाएँ, भेंट-रूप में, स्वर्ण किरण, स्वर्णधूलि तथा युगपथ में पाठकों को मिलेंगी।''[5]

इस प्रकार पंत की काव्य-चेतना के विकास में अनेक परिवर्त्तन दिखाई देते हैं। व्यक्तित्व एवं कृत्तित्व के माध्यम से अनेक मनीषियों में उन्हें प्रभावित किया है। उन समस्त प्रभावों को अपने में आत्मसात करते हुए कवि का साहित्यिक जीवन विकसित हुआ है। पंत-काव्य के विकास क्रम हैं जिसके आरंभ में सौन्दर्यभावना की प्रधानता है और अंत में चिंतन और बुद्धि की। किन्तु कोई भी रचना दार्शनिक विश्लेषण की सीमाओं से पूर्णत: बाहर नहीं है।

दार्शनिक प्रभाव के आधिक्य के कारण पंत के काव्य में बौद्धिकता का प्राचुर्य दिखाई देता है। उनकी वैचारिक दुरूहता साहित्यिक सरसता को पुष्ट नहीं करती। वस्तुत: काव्य में व्यक्त विचारधारा तभी सफल स्वीकार की जा सकती है जबकि पाठक उससे सहज भाव से तादात्म्य कर सके, वह उसे आरोपित प्रतीत न हो। पंत के काव्य में विद्यमान बौद्धिकता से पाठक सहज रूप से तादात्म्य नहीं कर पाता। कारण स्पष्ट है, एक विचार की प्रशंसा मात्र सहृदय पाठक को प्रभावित कर भी नहीं सकती। विचारक कवि पंत ने बौद्धिकता तथा हार्दिकता को यथार्थ मान लिया है। उनके अनुसार ''बौद्धिकता हार्दिकता का दूसरा रूप है, वह हृदय की कृपणता से नहीं आती।''[6] कवि की 'वही प्रज्ञा का सत्य स्वरूप, हृदय में बनता प्रणय व्यापार' उक्ति इसी विचार को पुष्ट करती है। कवि बच्चन ने इस बौद्धिकता को उपयुक्त स्वीकार किया है। उनके अनुसार ''जिसके लिए कवि अन्यथा लेखक ने साधना की है उसका आनंद लेने के लिए पाठक को भी साधना करनी पड़ती है। कविता से सहज ही आनंद प्राप्त करने की माँग बढ़ती जा रही है- बस, कविता तो ऐसी हो कि तीर की तरह दिल पर चोट करे। यह अस्वस्थ प्रवृत्ति है। पंत जी की कविता साधना माँगती है।''[7]

इस बात से इन्कार नहीं किया जा सकता कि पंत की रचनाओं में बौद्धिकता है और इस कारण वह पर्याप्त बोझिल हो गयी है। इस बौद्धिकता का एक मुख्य कारण है- कवि द्वारा विविध दर्शन-ग्रंथों का विस्तृत अध्ययन। इस काव्य में अध्ययन जन्य चिंतन को देखकर ही डॉ॰ नगेन्द्र ने कहा है कि-''पंत ने जीवन का भोग कम किया है और अवलोकन अधिक।'' इसलिए उनके जीवन-दर्शन में अनुभूत गहराई का अभाव है। पंत काव्य में लोक-कल्याणमय दार्शनिक चिंतन, उज्ज्वल, रंगीन कल्पना, मधुर सौन्दर्य भावना की विशेषताएँ विद्यमान है। इसके आधार पर डॉ॰ नागेन्द्र का विचार यह है कि -ये तीनों मिलकर एक मधुर बौद्धिक शांति को जन्म देते हैं। मैंने यहाँ बौद्धिक-शांति शब्द का प्रयोग जानबूझकर इस आशय से किया है कि यह शांति आध्यात्मिक शांति से भिन्न है। आध्यात्मिक शांति का अर्थ है शुद्ध आत्मानुभूति की स्थिति। और इन कविताओं के आस्वादन में बौद्धिक चेतना का सर्वथा लोप नहीं होता। बौद्धिक शांति से मेरा अभिप्राय उस शांति से है जो बौद्धिक विश्वास के ग्रहण से प्राप्त होती है। दूसरे शब्दों में यह कहिए कि आध्यात्मिक विश्वासों को बुद्धि द्वारा ग्रहण कर लेने से प्राप्त होती है।''[8]

मानवतावादी विचारधारा से आद्यान्तपुष्ट कवि पंत की दार्शनिक-चेतना पर पड़ने वाली विविध प्रभावों को हम निम्न रूपों में अवलोकित कर सकते हैं-

वेद तथा उपनिषद्

दर्शन के संदर्भ में कवि पंत ने भारतीय चिंतनधारा का महत्व स्वीकार करता है। उस महत्व को न समझ सकने वाले आज के युवक पर व्यंग्य करते हुए पंत कहते हैं- ''साधारणतया हमारा बुद्धिजीवी युवक जो विदेशी सभ्यता या संस्कृति से बाहर ही बाहर प्रभावित है और अपने देश के विराट् ज्ञान-भंडार से प्राय: अपरिचित - यह समझता है कि भारतवर्ष की समस्त आध्यात्मिक और दर्शन पिछली सामंती परिस्थितियों का प्रकाश मात्र है, जिसकी इस युग में कोई उपयोगिता नहीं रह गयी है।''[9] आगे वे स्पष्ट करते

हैं "किन्तु बाहर की इस काई को हटा देने के बाद भारत के अन्तश्चेतन मानस में जो कुछ शेष रहता है, उसके जोड़ का आज के संसार में कुछ भी देखने को नहीं मिलता, और यह मेरा अतीत का गौरव गान नहीं, भारत के अपराजित व्यक्तित्व के प्रति विनीत श्रद्धांजलि मात्र है।"[10]

पंत ने वेद-उपनिषदों का पर्याप्त अध्ययन किया है। फलतः उनके साहित्य में इनका प्रभाव भी पर्याप्त सीमा तक दिखाई देता है। कहीं-कहीं तो कवि पर आर्ष-प्रभाव अत्यंत स्पष्ट है। उसका दृष्टिकोण आर्षवाणी से अनुप्राणित है। पंत अन्तर्नभ में जिस दिव्य स्फुरण की चर्चा करते हैं वह भी आर्ष-मंत्रों से प्रभावित है। वे स्वयं स्वीकार करते हैं-

आर्ष मंत्रों के ज्योति तरंगित में उदात्त स्वर
ध्वनित आज भी अन्नर्नभ में दिव्य स्फुरण भर।।[11]

इसी दृष्टिकोण के कारण कहीं-कहीं कवि कतिपय वैदिक मंत्रों का अनुवाद तक प्रस्तुत कर देता है यथा- 'असतो मा सद्गमय, तमसो मा ज्योतिर्गमय, मृत्योर्माऽमृत गमय' का ही पद्यमय अनुवाद करते हुए लिखा है-

असत् तमस के मृत्यु सलिल में हमें पार कर
सत्य, ज्योति, अमृतत्व धाम दो, जीवन ईश्वर।[12]

उपनिषदों में निरूपित विद्या-अविद्या संबंधी मन्तव्य[13] का ही अनुवाद-सा प्रायः उन्हीं शब्दों द्वारा करते हुए पंत लिखते हैं-

अंध तमस में गिरते वे जो मात्र अवदि्या में रत
भूरि तमस में पड़ते वे जो विद्या में रत सतत
विद्याऽविद्या अभय एक में, भेद जिन्हें यह अवगत
विद्यामृत पी, मृत्यु अविद्या से वे तिरते अविरत।।[14]

'स्वर्ण किरण' की 'द्वा सुपर्णा' कविता के पूर्वार्द्ध में तो उपनिषद् के एक मंत्र[15] का ही अनुवाद किया गया है। उपनिषदों में त्याग-भाव, से संसार का भोग करने की बात कही गयी है तथा गीता में नश्वर शरीर में आत्मा का दिव्य-संदेश दिया गया है। दोनों को एक साथ ग्रहण करते हुए पंत लिखते हैं -

क्षणभंगुर यह तन, आत्मा रे मुक्त चिरंतन।
ईश्वर में जग प्राप्त, त्याग से भागो भव जन।।[16]

इस प्रकार कवि पंत ने अपने काव्य में वेद तथा उपनिषद् की संपूर्ण उदात्तता को वाणी प्रदान किया है।

पौराणिक प्रभाव

पंत पर भारत की कतिपय पौराणिक मान्यताओं का भी प्रभाव दिखाई देता है। 'सृजन शक्तियाँ' कविता में समस्त दिव्य-शक्तियों का परिचय देते हुए कवि ने उसका अभिवादन किया है। माहेश्वरी, लक्ष्मी, सरस्वती, काली, आदिति, दिति, इला, वाणी, दक्षिणा, शर्मा आदि विविध शक्तियाँ की स्तुति की है।[17] श्री अरविन्द ने उनमें से प्रथम चार को भगवती माता से सम्बद्ध स्वीकार किया है। उनके अनुसार (महेश्वरी, महाकाली, महालक्ष्मी, महासरस्वती) ये चार शक्तियाँ माताजी के विश्व देता हैं जो जगत लीला में स्थायी रूप से रहते हैं, ये उन महत्तर देवगणों के बीच अवस्थान करती है जिनकी ओर लक्ष्य करके ही यह कहा गया है कि इस त्रिविध -जगत की शक्ति के रूप में माताजी वहाँ (अधिमानस लोक में) देवताओं से ऊपर अवस्थान करती है।

देवगण जैसा कि पहले कहा जा चुका है मूलतः और तत्त्वतः भगवान की स्थायी अंश विभूतियाँ हैं, जिन्हें पर्रापरा मा आद्या शक्ति ने परमात्मास के अंदर से बाहर प्रकट किया है, अपने विश्वगत कर्म में देवगण भगवान की शक्तियाँ और व्यक्ति रूप है और विश्व ब्रह्माण्ड के अंदर उनमें से प्रत्येक का अपना विश्वगत स्थान, अधिकार और कार्य है।"[18] कुछ स्थलों पर पंत पर शाक्त प्रभाव दिखाई देता है, यथा-

देवि, तुम्हारे सित गति-प्रिय पद छूकर,

बनता निष्क्रिय जीवन-शव शिव चेतन।[19]
जड़ शव हो फिर से शिव, चित्त शक्ति समन्वित।[20]

योग-दर्शन का प्रभाव

कवि औपनिषदिक योग-दर्शन से भी प्रभावित है। इसी आधार पर वह मुक्ति की अवस्था को सत्-चित्-आनंद से युक्त स्वीकार करता है-

वहाँ सत् का भास रहता,
वहाँ चित्त का लास रहता।
वहाँ चिर उल्लास रहता,
यह बताता योग-दर्शन।।

इन्दु द्वारा ज्योत्स्ना को मनोगति से आकर मिलने का यही आधार भी है, "जब भी तुम मेरा स्मरण करोगी, मैं मनोगति से आकर तुमसे मिलूँगा, प्रिय।"[21]

कहीं-कहीं पंत में बुद्ध के अनुरूप विचारधारा दिखाई देती है, यथा- इच्छा को मानव दुःख का कारण बताते हुए उसके निवारण के उद्देश्य से वे कहतें हैं-

इच्छा मानव दुःख का कारण,
इच्छा का यदि करें निवारण,
तो जग जीवन हो फिर पावन।[22]

महात्मा बुद्ध की भाँति पंत ने[23] अतिवादी दृष्टियों का निषेध किया है। कवि की निम्नोक्ति पर भी धम्मपद का प्रभाव दिखाई देता है-

गाँवों के पशु तजते ज्यों बन पशुओं का पथ
पाप कर्म तुम छोड़, रहो सत्कर्मों में रत।

लेकिन पंत में सामान्यतः बौद्ध प्रभाव की झलक गहराई नहीं पकड़ सका।

आधुनिक भारतीय विचारकों में से कवि स्वामी विवेकानन्द, रवीन्द्रनाथ ठाकुर तथा महात्मा गाँधी से प्रभावित रहा। विदेशी मनीषियों में से उन्हें मार्क्स ने प्रभावित किया। लेकिन उन पर अंतिम प्रभाव श्री अरविन्द का ही पड़ा।

विवेकानन्द का प्रभाव

कवि स्वीकार करता है कि वीणा पल्लव काल की रचनाओं पर स्वामी विवेकानन्द का प्रभाव है। अपनी संतुलन प्रधान व्यक्तियों के लिए कवि उनका आभारी है। कुछ वैसी उक्तियों का उद्धरण देते हुए वे कहते हैं- ".......ऐसा कहकर मैं स्वामी विवेकानन्द के सारगर्भित कथन - "मैं यूरोप का जीवन सौष्ठव तथा भारत का जीवन-दर्शन चाहता हूँ" की ही अपने युग के अनुरूप पुनरावृत्ति कर रहा हूँ।"[24]

रवीन्द्रनाथ का प्रभाव

पंत पर रवीन्द्र का प्रभाव अपेक्षाकृत अधिक है। प्रारंभिक अवस्था में रवीन्द्रनाथ की कुछ पुस्तकों का भी कवि ने विशेष अध्ययन किया है।"[25] रवीन्द्र की प्रभाव सूचक एक कविता 'मम जीवन की प्रमुदित गात' वीणा में संकलित है। स्वयं कवि स्वीकार करता है कि गीतांजलि के 'अन्तर मम विकसित कर' से प्रभावित होकर तदनुरूप भाव की रक्षा के उद्देश्य से कवि ने सप्रयास इस कविता की रचना की है।[26] इसी प्रकार कवीन्द्र के 'आभार बंधन माँझे लभिव मुक्तिर स्वाद' की भाँति पंत भी अनुभव करते हैं-

तेरी मधुर मुक्ति ही बंधन
है सजह मुनि का मधु क्षण।
पर कठिन मुक्ति का बंधन।[27]

गाँधीवाद

महात्मा गाँधी के प्रति श्रद्धा भावना को कवि ने अनेक प्रशस्ति गीतों में व्यक्त किया है। 'बापू के प्रति' शीर्षक कविता में गाँधी ने 'शुद्ध बुद्ध आत्मा' 'चिर पुरण' तथा 'चिर नवीन' का रूप देखते हुए उनके सत्य अहिंसा के सिद्धान्त में विश्वास प्रकट करता है–

बीनेगा सत्य अहिंसा के
ताने बानों से मानवपन।[28]

महात्मा गाँधी के देहावसान पर कवि अनेक कविताओं में उन्हें अपने श्रद्धा-प्रसून अर्पित करता है।[29] 'रजत शिखर' में 'शुभ्र पुरुष' काव्यरूपक में गाँधीजी की स्तुति की है। स्वयं कवि के अनुसार ''शुभ्र पुरुष' महात्मा जी के तप:पूत व्यक्तित्व का शुभ्र प्रतीक है। महात्माजी भारतीय चेतना के आधुनिकतम रजत संस्करण है।'' इन जन-मन-गण अधिनायक गाँधीजी से कवि बहुत प्रभावित रहा है। संपूर्ण लोकायतन में गाँधीजी को लोकनायक मानकर उनके सिद्धांतों के अनुकरण को ही आदर्श जीवन प्रणाली स्वीकार किया है। साधना, कर्म, शांति, मानवता आदि के लिए समष्टिपरक दृष्टिकोण कवि बापू की वाणी में प्रस्तुत करता है–

शांति हिमालय की चोटी पर नहीं मिलेगी
उसे प्राप्त करना होगा मानव समाज में
प्रतिदिन के कर्मों में, जीवन संघर्षण में।[30]

मार्क्सवाद

गाँधीजी से प्रभावित होने के कारण सामान्यत: कवि ने अहिंसा के सिद्धान्त की ही प्रशंसा की है, पर कहीं-कहीं उनका अन्तर्मन मार्क्सवाद के प्रभावस्वरूप हिंसा की महत्ता को भी स्वीकार करता है, यथा–

लो झरता रक्त प्रकाश आज नीले बादल के अंचल से।[31]
राष्ट्र हेतु बलि जाओ।[32]
तेरे श्वाँसों में ज्वाला हो।[33]

लेकिन इस संबंध में पंत स्पष्ट कर देते हैं कि ''मैं मार्क्सवाद की उपयोगिता एक व्यापक समतल सिद्धान्त की तरह स्वीकार कर चुका हूँ किन्तु सांस्कृतिक दृष्टिकोण से उनके रक्त-क्रांति और वर्ग युद्ध के पक्ष को मार्क्स के युग की सीमाएँ स्वीकार करता हूँ।''[34] किन्तु मार्क्सवाद में पंत का व्यक्तित्व समुचित अभिव्यक्ति नहीं प्राप्त कर सकता। इसका कारण स्पष्ट करते हुए डॉ॰ नगेन्द्र ने उचित ही कहा है– ''पंत के व्यक्तित्व में वह काठिन्य और दृढ़ता नहीं है जो मार्क्सवादी विश्वासों के लिए अपेक्षित है। मार्क्सवाद का भौतिक संघर्ष, निरीश्वरवाद अथवा अनात्मवाद पंत जैसे कोमल प्राण व्यक्ति का परितोष नहीं कर सकते। ऐसे व्यक्ति के लिए आस्तिकता अनिवार्य हो जाती है और आत्मा और ईश्वर में ही अंत में जीवन और जगत का समाधान मिलता है।''[35] अत: अपनी दोहरी विचारधारा के प्रभाव स्वरूप पंत ने गाँधीवाद एवं साम्यवाद की एक साथ प्रशंसा की है–

मनुष्यत्व का तत्व सिखाना निश्चय हमको गाँधीवाद।
सामूहिक जीवन विवाद की साम्य योजना है अविवाद।।[36]

अरविन्द दर्शन

पंत श्री अरविन्द के व्यक्तित्व से भी प्रभावित है। पंत ने अनेक कविताओं में उनका स्तवन किया है। कवि श्री अरविन्द को योगेश्वर संबोधन प्रदान करता है क्योंकि चेतना के स्तर पर स्तर पार कर उन्होंने इस स्थिति को प्राप्त किया है। वह उनमें मानवत्व तथा ईश्वरत्व का संतुलन देखता है। इसलिए कवि पंत उनकी प्रशंसा करते हुए कहते हैं–

एक स्तंभ उपनिषत् ब्रह्म विद्या के निश्चय,
ज्योति तंभ दूसरा देव का शब्द असंशय,

दिव्य चेतनासेतु, उर्ध्व जिन पर ज्योतिर्मय
आर पार भव जीवनाब्धि के, अति मानव, जय।।[37]

श्री अरविन्द का महत्व स्वीकार करते हुए पंत लिखते हैं, ''श्री अरविन्द को मैं इस युग की महान तथा अतुलनीय विभूति मानता हूँ। उनके जीवन-दर्शन से मुझे पूर्ण संतोष प्राप्त हुआ। उनसे अधिक व्यापक ऊर्ध्व तथा अतलस्पर्शी व्यक्तित्व, जिनके जीवन-दर्शन में आध्यात्म का सूक्ष्म, बुद्धि अग्राह्य सत्य नवीन ऐश्वर्य तथा महिमा से मंडित हो उठा है, मुझे दूसरा नहीं देखने को मिला। विश्व कल्याण के लिए मैं श्री अरविन्द की देन को सबसे बड़ी देन मानता हूँ।''[38]

समग्रतः पंत काव्य के अनुशीलन से स्पष्ट है कि एक ओर जहाँ के इस देश की प्राचीनतम वैदिक एवं औपनिषदिक विचार-परंपरा से प्रभावित हैं वहाँ वर्त्तमान मनीषियों में से गाँधीजी और अरविन्द का प्रभाव अपेक्षाकृत अधिक है। इस संबंध में वे स्वयं स्वीकार करते हैं- ''गाँधीजी के संसर्ग में मुझे सदैव आत्मबल तथा आत्म-विश्वास मिला है और श्री अरविन्द के संपर्क में मेरा मानसिक क्षितिज व्यापक, गहन तथा सूक्ष्म बन सका, ऐसा मेरा अनुभव है।''[39]

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Preservation and Conservation Practices of Print Materials in Selected College Libraries in Yadagir District of Karnataka : A Study

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Abstract

This study examined the different techniques utilized as a part of the preservation and conservation of library materials in selected college libraries in the district of Yadagir of Karnataka especially, it investigate the causes and nature of deterioration, patterns and techniques utilized as a part of their control, presence of preservation and conservation strategies and constraints restricting successful preservation and conservation. The survey technique was used to gather information. Findings uncovered that preservation and conservation strategies, however adopted in the college libraries were not viably being used in spite of the fact that the libraries all have preservation policies. The review also uncovered that cleaning and dusting of library materials is the most commonly used technique. The study built up that there are indeed incidences of deterioration of the most prominent outcome being books becoming torn and c racking and scratching. Other findings uncovered that inadequate funding was the most serious inhibitor to compelling preservation and conservation activities in the college libraries. In view of the discoveries, recommendations were made towards enhancing preservation and conservation practices in the libraries.

Keywords : Conservation, Library materials, Preservation, Preservation arrangement, College Libraries

INTRODUCTION

Libraries work as memory organizations, whose mission is to gather, sort out, preserve and encourage the use of cultural and scientific heritage. The library works as knowledge house which is entrusted with the obligation of acquiring, processing and disseminating its information to users and because of steady utilization these materials wear and get torn. To preserve and conserve print materials in the library. It is extremely essential to prolong the life of the materials. The term, " conservation, is best comprehended to mean a dynamic intervention in the repairs of items, which has deteriorated or degraded. Libraries acquire and preserve information bearing assets, for example, periodicals, maps and so on, to meet the information prerequisites of its customer base. For the life of these materials in great physical condition, with the goal that it can be made accessible and counseled at all times.

The term ' preservation' is the maintenance of items near to their original condition, similarly as far as possible, or until they are not required anymore. According to Rufus Choate, " The book is the only immortally", subsequently, it is duty of the librarian to see that rare books and archive materials get saved from the ecological, physical, chemical and biological factors. One of the functions of preservation is to gather the documents of the past and the present and to keep and maintain them so that they are accessible to both present and future users.

The term, preservation, conservation and restoration is used as a part of the **guidelines which are the simple definitions used by Wesley L. Boomgaarden.**

Preservation – Action taken to anticipate, prevent, stop or retard deterioration

Conservation – The maintenance taken to anticipate, present, stop or retard **deterioration.**

Restoration – The act of returning the deteriorated item to its original or near original condition.

Objectives of the Study

The specific objectives are

1. To explore the preservation and conservation techniques in use in selected college libraries in Yadagir district.
2. To investigate if there is a preservation and conservation policy used in these libraries.

3. To find out the types of deterioration experienced in the selected college libraries.
4. To example the level of degradation of resources experienced in the selected college libraries.
5. To find out the constraints against affective preservation and conservation of library materials in the selected colleges.

METHODOLOGY

The study adopted the survey approach. The populace involved college libraries in Yadagir district of Karnataka State. Purposive sampling was adopted in selecting the college libraries surveyed inferable to pre-study visits that drove to the disclosure that preservation and conservation practices were not that pronounced in all the Yadagir colleges. Hence, a sum of fifteen college libraries with some level of preservation and conservation practices was purposively chosen. Table 1 displays a list of the selected college libraries. The target participants were the librarians, since they were in the best position to give all the vital information concerning the issues being considered in the study.

Table 1 : List of Selected Colleges

Sl. No.	Name of the Colleges
1	Matoshree Mallamma College
2	Yashodha Degree College
3	Panchasheela Degree College
4	Huligeppa Degree College
5	Nalanda Degree College
6	Shreeraksha Degree College
7	Aadarsha Degree College
8	Maharaj Degree College
9	Surabhi Degree College
10	Yeshashwini Degree College
11	Basava Degree College
12	Arundhati Degree College
13	Priyadarshini Degree College
14	M N Bali Degree College
15	Babugouda Degree College

Data Collection and Analysis

Data was gathered using a structured questionnaire separated into six segments (See Figure 1). To ensure a high rate of return, copies of the questionnaire were personally administered.

Structure of the Questionnaire

Section A : elicited demographic data about the college libraries

Section B : collected data on the general use of preservation and conservation of library materials

Section C : asked questions about the patterns and strategies in preserving and conserving print library materials

Section D : asked questions on the nature and extent of degradation of library materials

Section E : found out the existence of preservation and conservation policy, and

Section F : asked questions on barriers affecting preservation and conservation practices.

All the fifteen (15) copies of the questionnaire directed were returned giving a 100 % response rate. Descriptive statistics, namely frequency and percentage distributions, were used to present patterns in the data.

NATURE AND EXTENT OF DEGRADATION OF PRINT AND LIBRARY MATERIALS

Table 2 below respectively presented the results of the analysis of the nature of degradation of Print and Library Materials in the surveyed college libraries.

Table 2 : Nature and Extent of Degradation of Print and Library Materials.

Nature of Degradation of print Library Materials	**No Extent**	**Little Extent**	**Very Great Extent**
Mutilation of library material	1(6.7)	5(33.3)	9(60.7)
Vandalization of library material	3(20.0)	6(40.0)	6(40.0)
Broken spine of library material	0(0.00)	8(53.3)	7(46.7)
Books becoming torn	1(6.7)	3(20.0)	11(73.4)

The results show that ' books becoming torn' is the most noteworthy nature of degradation of print library materials in the surveyed college libraries. This is followed by 'mutilation of library materials' while ' broken spine of library material' is next. Minimal nature of degradation of print library materials is 'vandalization of library materials.

CAUSES OF DETERIORATION OF PRINT MATERIALS

Table 3 presents the result of the analysis of the various causes of deterioration of print materials in the surveyed colleges.

Table 3 : Causes of Deterioration of Print Materials

Print Library Materials	**No Extent**	**Little Extent**	**Very Great Extent**
High acidity levels	4(26.7)	5(33.3)	6(40.0)
Wear and tear due to excessive photocopying	0(0.00)	4(26.7)	11(73.4)
Air pollution	4(26.7)	7(46.7)	4(26.7)
High temperature level	5(33.3)	5(33.3)	5(33.3)
Relative humidity	4(26.7)	7(46.7)	4(26.7)
Excessive light	6(40.0)	6(40.0)	3(20.0)
Dusts and particulate matters	6(40.0)	3(20.0)	6(40.0)
Biological agents (termite, spiders, cockroaches, etc.)	4(26.7)	7(46.7)	4(26.7)
Bad shelving	4(26.7)	9(60.7)	2(13.3)

The results showed in table 3 demonstrate that ' wear and tear' is the significant reason for deterioration of print materials in the Belgaum district college libraries. This is followed by 'high acidity level' and 'dusts and particulate matters'. While ' high temperature level' is next. Nonetheless, minimal reasons for deterioration of print materials in the Belgaum district college libraries are ' bad shelving' and 'excessive light'.

PRESERVATION AND CONSERVATIN TECHNIQUES OF PRINT MATERIALS

The result of the analysis of the Preservation and Conservation Techniques of Print Materials are presented in table 4.

Preservation and Conservation Techniques	No Response	Never	Occasionally	Very Often
Binding	0(0.00)	0(0.00)	3(20.0)	12(80.0)
Fire Fighting equipment	0(0.00)	0(0.00)	4(26.7)	11(73.4)
Air conditioning	0(0.00)	1(6.7)	3(20.0)	11(73.4)
Photo coping	0(0.00)	0(0.00)	2(13.3)	13(86.7)
Deacidification	11(73.4)	2(13.3)	1(6.7)	1(6.7)
Use of insecticide	0(0.00)	1(6.7)	10(66.7)	4(26.7)
Cleaning and dusting	0(0.00)	0(0.00)	0(0.00)	15(100.0)
Adequate security	0(0.00)	1(6.7)	1(6.7)	13(86.7)

Table 4 shows that the most used preservation and conservation technique of print materials is the college libraries is by ‘ cleaning and dusting’ these materials. This is ‘adequate security’ is taken after. Be that as it may, minimal methods of preservation and conservation of print materials are ‘ Deacidificatin’ and ‘use of insecticide’. This circumstance uncovers that the most useful technique used as a part of preservation and conservation print and materials in the college libraries in cleaning and dusting.

PRESERVATION AND CONSERVATION POLICY IN THE COLLEGE LIBRARIES

Table 5 : Preservation and Conservation Policy in the College Libraries

Policy	Yes	No
Does the library have preservation and conservation policy ?	13 (86.7)	2(13.3)
Is the policy written ?	12(80.0)	3(20.0)
Is the policy obeyed ?	11(73.4)	4(26.7)
Does it guide staff ?	12(80.0)	3(20.0)
Is the policy helping the security of the library ?	14(93.3)	1(6.7)
Does the policy address disaster ?	10(66.7)	5(33.3)

Table 5 shows that the college libraries are having a standing preservation and conservation policy, which is written, obeyed and it serves as a guiding instrument to security of print materials. Yet , the policy fails to address the issue of disaster management.

CONSTRAINTS AGAINST EFFECTIVE PRESERVATION AND CONSERVATION OF LIBRARY MATERIALS

The constraints against effective preservation and conservation of library materials in the college libraries are displayed in the table 6.

Table 6 : Constraints against effective preservation of Library Materials

Possible Constraints	No Extent	Little Extent	Very Great Extent
Inadequate funding of the library	1(6.7)	5(33.3)	9(60.7)
Lack of competent manpower	8(53.3)	3(20.0)	4(26.7)
Lack of preservation and conservation policy	0(0.00)	0(0.00)	0(0.00)
Inadequate infrastructure	2(13.3)	4(26.7)	9(60.7)
Administrative bottlenecks	3(20.0)	4(26.7)	8(53.3)
Harsh environmental conditions accelerating library materials depreciation	2(13.3)	5(33.3)	8953.3)

Table 6 indicates that the greatest constraint confronting the libraries is ' inadequate funding'. This is followed by ' inadequate infrastructure' while 'administrative bottlenecks' and ' harsh environmental conditions accelerating library materials depreciation' was following other constraints. However, ' lack of competent manpower' and ' lack of preservation and conservation policy' are not seen as constraints. In different words, the college libraries are not confronted with policy or human resource problems, but instead, infrastructure and administrative problems in completing their preservation and conservation activities. This has uncovered that the preservation and conservation policies in these libraries are extremely compelling and they have skilled staff handling of library activities

DISCUSSION

The result of the study uncovered that the most utilized practice and techniques in the conservation and preservation of print library materials in the college libraries is cleaning and dusting of information materials, while the slightest utilized techniques is the use of insecticide. The results also show that the significant reason for deterioration of library materials is wear and tear due to a great extent to over the excessive photocopying of the information materials by users and excessive use and mishandling of the materials. This finding corroborates Olabodoe (2005) who stated that wear and tear, excessive light and dust are responsible for the deterioration of library materials.

The study uncovered that library materials in the college libraries also suffer from high acidity and high temperature levels, although bad shelving and excessive light are the slightest issues that the libraries confront.

The combination of high temperature and high humidity rushes the chemical deterioration of materials. These factors also play a major role in the multiplication of some biological agents. High relative humidity provides the moisture to promote harmful chemical reactions in materials and in blend with high temperature, enhances insect activity. To a great degree, low relative humidity may lead to parching and brittlement of specific materials.

On the nature and degree of degradation of print library materials, the outcomes demonstrate that the most astounding nature of degradation is books being torn, followed by broken spines, being a consequence of frequent and careless use of the materials.

The best constraint against viable preservation and conservation of library materials in inadequate funding. Other constraints that affected the libraries were administrative bottlenecks and harsh environmental conditions that accelerate library materials depreciation.

CONCLUSION

This study has shown that conservation and preservation techniques are perceived in the selected Yadagir college libraries, however the techniques are not completely honed because of a few hindrances outstandingly lacking finding. Based on these findings, the accompanying policy options and strategies are suggested.

There should be adequate and trained manpower in the libraries for conservation and preservation programmes and activities to succeed on the grounds that conservation and preservation activities are particular and require information experts who understand the physical and chemical nature of the materials in their library holdings.

Although majority of the surveyed libraries have preservation policies setting out rules for conservation and preservation of library materials, such policies should be implemented and reviewed into every once in a while to cater to new challenges and emerging technologies.

In is trusted that this review may give college libraries the key bearing they require to start any conservation measures for the assurance of their possessions. Doubtlessly, it will likewise help the libraries to comprehend the physical needs of records and to meet, or expand, nationally and internationally agreed standard for their preservation. Knowledge generated from the study forms a vital part in the decision-making process. It is obvious that there is almost no looked into construct information in Belgaum in light of conservation and preservation of library materials. In this way, recommendations given in the review are probably going to illuminate the decision-making process and allotment of funds for better preservation activities and programmes. Training and education of library personnel and conservation and preservation practices in Belgaum libraries could be affected by the after-effects of the study provided the recommendations are sought after with the necessary activities they require.

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Research Article

Identification of Fungi infected Leaf Diseases using Deep Learning Techniques

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Abstract: This paper presents CNN based model to identify fungi-affected leaf diseases of Psidium guajava. Identifying these leaf diseases at an early stage will help the farmers take significant precautions and prevent the disease from spread to other parts of the plant and the neighbouring plants. The dataset is collected from real environment of the farms. It has four categories of infected leaves (3971 in number) and they are Pseudocercospora leaf spot, Rust, Insect eaten leaf, and another category is of the healthy leaf of Guava (Psidium guajava). Then, applied CNN, AlexNet and SqueezeNet architectures to identify 3971 fungi infected leaves of Guava. SqueezeNet architecture shown 75.9% recognition accuracy as compared to the other two architectures.

Keywords: Psidium guajava, Leaf Diseases, Pseudocercospora leaf spot, Rust, Deep Learning, CNN, AlexNet, SqueezeNet.

1. Introduction

The population in India mainly depends on agriculture. India is a country where we have a varied type of temperature, weather and land. So growing of the fruits and vegetables is also varied at different parts of the country. Fruits are grown in home gardens, fruit farms, or on the roadways where the seed might have soon by wind or animals. Among many fruits grown, Guava is the fourth most popular fruit in India after Mango, Banana and Citrus. The scientific name of Guava is Psidium guajava, which is of Latin origin. The origin of Guava is assumed to be in Central America or Mexico. Slowly, it has been spread across the world by man and nature. In India, it was introduced by the Portuguese in the early 17th century. Guava is the most ancient fruits of India because of its hardy and prolific bearing nature, making it to be grown in most Indian states. Maharashtra is the first highest Guava producer, after which Bihar and Uttar Pradesh come second and third, respectively.

Guava is a good source of vitamin C & A, calcium, manganese and phosphorus. It is used in the production of jam, jellies, nectar etc. Leaves of Guava are used in curing diarrhea, tanning and dyeing. The fruit is consumed either raw or ripped with little of salt and pepper on it. This plant serves as a host to fungi, algae and bacteria found in the atmosphere, which affects the leaf's, stem, barks, fruit and twig of the plant. Most of these plants are lost due to fungi.

The traditional method of identifying these leaf diseases is tiresome, time-consuming and expensive as it requires the continuous monitoring of the plant by the experts and they have to screen the plant through the naked eye, which might sometimes be a wrong assumption of the disease. At current situation the recognition and classification of guava leaf diseases primarily relay on the plant pathologists and work experience of the farmers. In recent years, emergence of machine learning and deep learning techniques have aced in getting better results. Deep learning techniques have become a research attraction in the field of computer vision, pattern and image recognition such SVM and CNN. Hence, we aim to propose and develop a model using deep learning techniques to identify these fungi affected diseases at an early stage. Identifying these leaf diseases at an early stage will help the farmers take significant precautions and prevent the disease from spread to other parts of the plant and the neighboring plants.

We focus on three different categories of leaf diseases, i.e, Pseudocercospora leaf spot, Rust, insect eaten leaf and another category is of a healthy leaf of Guava. The dataset is collected from real time enviroment[12].

As there is too much of work done on publically available dataset. Hence we collect the dataset from a nearby farm of Kalaburagi district of Karnataka, India.

The rest of the paper is arranged as Section 2 describes the literature survey, Section 3 preparation of dataset, Section 4 narrates the proposed model, Section 5 describes the experimental results, comparative analysis in Section 6 and lastly conclusions and future work are summarized in Section 7.

2. Literature Survey

Md. Rasel Howlader *et al.,* [1] proposed a deep convolution neural network (D-CNN) based model to identify and classify guava leaf diseases on their dataset, namely BU Guava Leaf (BUGL2018). They classified three diseased leaves, i.e., algal leaf spot, whitefly and Rust, and another category are for the healthy leaf of Guava. Using their proposed model they achieved recognition accuracy of 98.74% on the test set.

Ibtesam Their *et al.,* [2] developed a Knowledge-Based System for identifying guava problems. Their main aim was to help farmers, specialists, and students diagnose the seven different types of guava diseases. The model was developed using CLIPS and Delphi XE10.2 languages. It does not require intensive training to be used; it is user friendly and is easy to use.

S. Arivazhagan and S.Vineth Ligi [3] introduced a deep learning-based method that identifies the leaf diseases of mango plant's. They have identified five different leaf diseases. The diseases studied are Anthracnose, Alternaria leaf spots, Leaf Gall, Leaf Webber, Leaf burn of Mango. The dataset consists of 1200 images of diseased and healthy mango leaves. The proposed CNN model achieves an accuracy of 96.67% for identifying leaf diseases.

Geetharamani G and Arun Pandian J [4] proposed a nine-layer deep CNN for identifying plant leaf diseases. They used an open dataset of 39 different classes of plant leaves. After extensive training of the model, they achieved an accuracy of 96.46%. They claim that the proposed model is better than the traditional machine learning approaches.

Xiaoxiao SUN *et al.,* [5] developed a CNN based model to recognize the seven different tea diseases of leaves. To obtain a high accuracy rate, they tuned the model with different hyperparameters like training with different epochs, dropout, and learning rate and obtained a good accuracy of 93.75%. They compared the developed model with SVM and BP and obtained 89.36% and 87.69% accuracy.

Rathan Kumar Veeraballi *et al.,* [6] proposed a CNN model for image classification of papaya leaf diseases, including papaya mosaic and papaya leaf curl. They used the pre-trained ResNet-50 model to train and classify the leaf images. An accuracy of 85% is obtained for the trained model, which proves that it is appropriate for a real-time environment.

Xiaofei Chao *et al.,* [7] developed an apple tree leaf diseases (ALTD) model based on DCNN. Six different classes of apple leaves were used for classification. They combined the Xception and DenseNet model features, which gives the highest recognition accuracy of 98.82%, which is higher than Inception-v3, Mobile Net, VGG-16, DenseNet-201, Xception, VGG-INCEP.

3. Preparation of Dataset

A proper dataset is required to analyze the performance of the deep learning techniques. We introduce our dataset collected from a nearby farm of Kalaburagi district of Karnataka, India. The dataset consists of three different categories of leaf diseases i.e, Pseudocercospora leaf spot, Rust, insect eaten leaf, and another category is of the healthy leaf of Guava. Two different smartphones and one digital camera is used to capture the images. A total of 3971 images are used for classifying the leaves. These images are classified into four different classes, three are for diseased class and the other is healthy leaf, which are described as below.

Pseudocercospora leaf spot: Pseudocercospora psidii fungi cause this disease. It appears as a small, roughly shaped, or vaguely circular dark brown border on the leaves upper surface. The fungus may grow, and in the center of lesions, gray tufts of mycelium may be visible. During wet conditions, leaves infection occurs, and it can also be spread by the splashing of water. We collected 727 images of pseudocercospora leaf spot images from 50 different species of guava plant, among which 510 are given for training and 217 are used for testing.

Rust: It is caused by the fungi Puccinia psidii. It affects both the leaf and fruit of the Guava plant. The leaves may appear distorted with orange to red pustules on the leaves upper and lower surface. Circular lesions on the leaves with yellow halos and dark borders are also visible. We collected 864 images of rust leaf images from 50 different species of guava, among which 606 are given for training and 258 are used for testing.

Insect eaten: It is caused by insect-eating of the leaves. It may appear anywhere around the guava leaf. Mostly it appears around the edges of leaves. We collected 324 images of rust leaf images from 50 different species of guava, among which 225 are given for training and 99 are used for testing.

Below are sample images of diseased and healthy leaves of the guava plant shown in Figureure 1 to 4.

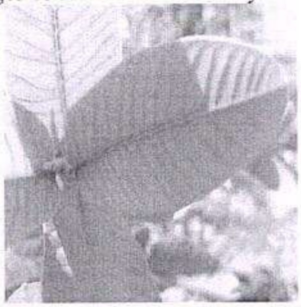

Figure 1. Healthy Leaf

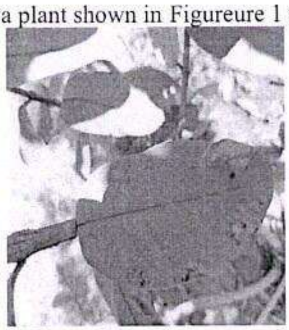

Figure 2. Pseudocercospora leaf spot

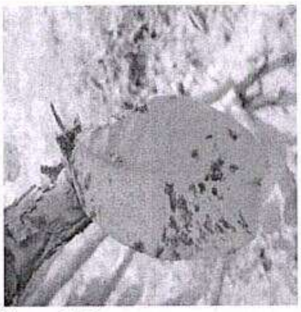

Figure 3. Rust

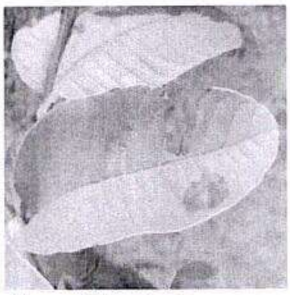

Figure 4. Insect eaten

Below Table 1 shows the overview of our dataset.

Table 1. Overview of Dataset

Name	Total Images	Training Images	Testing Images
Healthy	2056	1439	617
Insect eaten	324	225	99
Leaf spot	727	510	217
Rust	864	606	258
Total	3971	2780	1191

3. Proposed Model

In traditional machine learning algorithms we extract the features manually and then send it for classification, where as in deep learning algorithms the layers of CNN extracts the features from the data given by making use of the kernels. Which eliminates the need for manually extracting the features from the data. This has lead us to work on deep learning techniques. Hence, we propose a deep learning-based CNN model. It has sequential layers, and each layer uses the previous layer as input to the model. CNN requires minimal pre-processing and is very good at analyzing images. With its multilayered structure, CNN is good at separating the desired features.

The CNN model's basic building blocks are the Convolution layer, Pooling layer, Activation Function, and the Fully Connected layer. Below Figure 5 shows the architecture of the CNN model.

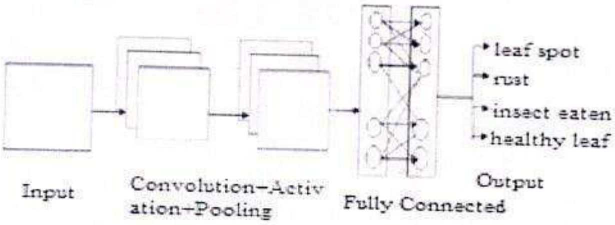
leaf spot
rust
insect eaten
healthy leaf
Input
Convolution–Activ ation–Pooling
Fully Connected
Output

Figure 5. CNN architecture.

Depending upon the CNN architecture, there may be multiple convolutions, activation and pooling layers.

The image is used as an input layer, where pre processing of raw data takes place. Any size of image can be given for classification, the model will resize according to the models standard size which is 256x256 pixels. Prior to the beginning of convolution operation, the input layer contains images as pixel values. If the image is gray scale then input shape will be PxP and if it is color image as in our dataset then the input shape will be PxPxN, where N represents the dimensions i.e, R, G and B colors. These three different input matrices, i.e. R, G and B channels for every image in the dataset, are given input to the first convolution layer. The convolution operation is given as below in equation (1)

$$P_i = B_i + \sum_n Z_{in} * X_n \tag{1}$$

Where P_i is the feature map, * is convolution operation, X_n is the input channel,Z_{in} is the kernels and B_i represents the bais value. Each input image matrix is convoluted, and batch normalization is applied. Batch normalization is done to standardize the raw inputs while feeding to the next layer. After every batch normalization layer, Relu activation is used. This activation function alleviates the problem of over fitting. The max-pooling operation is then applied to the output matrix whose equation (2) is given as below

$$h_j = \max_{i\ aj} f_i \tag{2}$$

which is connected to the Fully Connected (FC) layer. The FC layer's residue is connected to the softmax function. The softmax operation is given as in equation (3)

$$O_x = S(\gamma)_x = \frac{e^{\gamma x}}{\sum_{n=1}^{N} e\gamma n} \tag{3}$$

Where O_x is the output vector, S is softmax function taking N dimensional vector γ and outputs real values between 0 nad 1. The adam optimizer is used to optimize the algorithm. The learning rate is at 0.0001. The execution environment used is CPU. Image augmentation is used to reduce the over fitting of the model. It is a technique where the given image is resized, rotated, tilted, and zoomed to capture the essential features in all angles. This in turn will erase the problem of over fitting of the model. Lastly, we train the model with 25 epochs to get accuracy. Below Figureure 6 shows the proposed CNN model.

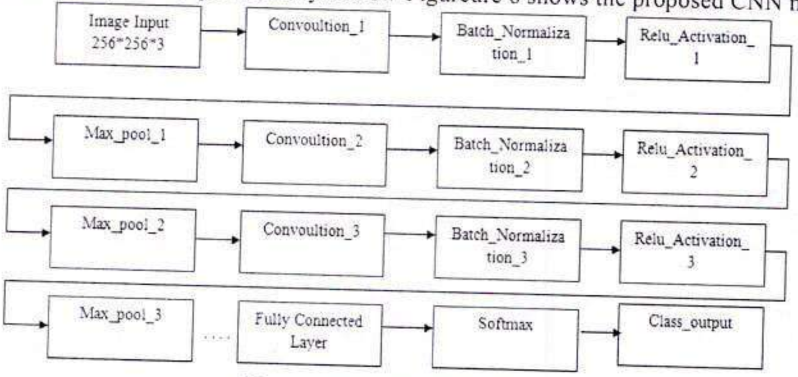
Image Input 256*256*3
Convoultion_1
Batch_Normaliza tion_1
Relu_Activation_ 1
Max_pool_1
Convoultion_2
Batch_Normaliza tion_2
Relu_Activation_ 2
Max_pool_2
Convoultion_3
Batch_Normaliza tion_3
Relu_Activation_ 3
Max_pool_3
....
Fully Connected Layer
Softmax
Class_output

Figure 6. Proposed CNN model

5. Experimental Results

The dataset consists of 3971 images. The experiment conducted divides the dataset into a 70:30 split where 70% of the dataset we use for training and the remaining dataset, i.e. 30%, is used for testing purposes. The difficult task in identifying and classifying guava leaves is that the leaves with different diseases are very similar. Therefore, this similarity can lead the leaves to be mapped into the wrong classes. The CNN model trained through several iterations to classify 3971 images; we achieved an accuracy of 66.5%. The accuracy of the model is calculated as,

$$\text{Accuracy (\%)} = \frac{\text{Total number of images correctly classified}}{\text{Total number of images used for testing}} * 100$$

Class wise recognition accuracy of CNN model is given in the Table 2 below.

Table 2. Class-wise recognition accuracy of CNN

Sl. no.	Class Name	Accuracy in %
1	Leaf spot	44.6%
2	Rust	62.8%
3	Insect eaten	10.6%
4	Healthy	71.2%

The confusion matrix obtained for proposed CNN model is shown in the Table 3.

Table 3. Confusion matrix for proposed CNN model.

	Leaf spot	Rust	Insect eaten	Healthy
Leaf spot	**44**	66	2	108
Rust	16	**202**	8	41
Insect eaten	10	15	**10**	72
Healthy	28	43	0	**546**
			Average in %	**66.5%**

The below graph Figure 7 shows the accuracy obtained for training and validation data using the proposed CNN model. And the graph Figure 8 shows the loss for training and validation data using the proposed model.

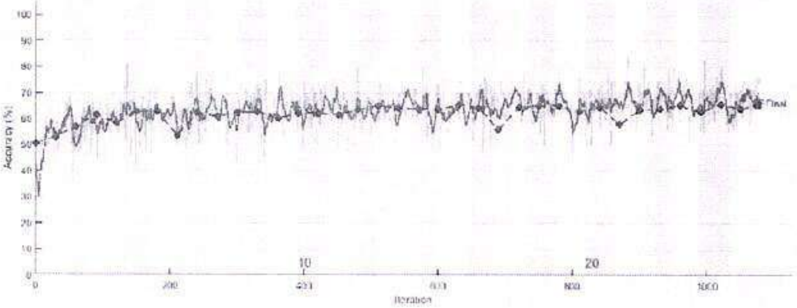

Figure 7. Accuracy for training(blue line) & validation data(black line)

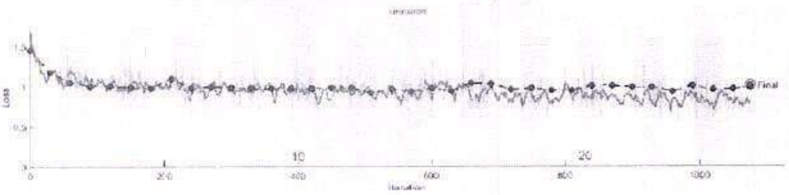

Figure 8. Loss for training(red line) and validation data(black line)

6. Comparative Analysis

There are many different pre-trained models. We have used AlexNet [8] and SqueezeNet [9] for compartive analysis with our proposed CNN architecture. Both networks are trained on GPU's and on 1000s of image categories. The experiment divided the dataset into 70:30 split where 70% of data is used for training and 30% data is used for testing. The Adam optimizer is used, and the learning rate is kept at 0.0001. And the model is trained for 25 epochs. These parameters are kept the same for all three models used. So using our dataset and after fine-tuning the hyperparameters, we have obtained the below results shown in Table 4.

Table 4. Comparative Analysis of models

Sl. No.	Architecture	Accuracy	Elapsed Time
1	Proposed model	66.5%	238 Mins 41 Sec
2	AlexNet	71%	152 Mins 40 Sec
3	SqueezeNet	75.9%	199 Mins 44 Sec

Class wise recognition accuracy of AlexNet and SqueezeNet model is given in the Table 5 and Table 6 respectively.

Table 5. Class-wise recognition accuracy of AlexNet

Sl. no.	Class Name	Accuracy in %
1	Leaf spot	44.5%
2	Rust	78.3%
3	Insect eaten	53.5%
4	Healthy	79.4%

Table 6. Class-wise recognition accuracy of SqueezeNet

Sl. no.	Class Name	Accuracy in %
1	Leaf spot	58%
2	Rust	75%
3	Insect eaten	47.2%

4	Healthy	86.2%

The confusion matrix obtained for AlexNet and SqueezeNet is shown in the Table 7 and Table 8 respectively.

Table 7. Confusion matrix for AlexNet.

	Leaf spot	**Rust**	**Insect eaten**	**Healthy**
Leaf spot	**110**	35	7	66
Rust	43	**184**	4	28
Insect eaten	24	7	**23**	43
Healthy	70	43	9	**529**
			Average in %	**71%**

Table 8. Confusion matrix for SqueezeNet.

	Leaf spot	**Rust**	**Insect eaten**	**Healthy**
Leaf spot	**105**	66	29	45
Rust	32	**201**	11	15
Insect eaten	12	7	**50**	28
Healthy	32	21	16	**548**
			Average in %	**75.9%**

It is clearly observed from the Table 4- Table 8 that SqueezeNet performs better than our proposed model and the AlexNet network. The time required to train the model is little more as compared to the AlexNet but recognition accuracy is good as compared to the other two models. Hence we claim that SqueezeNet performs better on the collected dataset of the Guava plant.

The proposed model differes from the pre-trained model in getting better results because of the pre-trained architectures are trained on 1000's of categories and after several iterations and hyper parameter tuning they have got good results. Hence the pre-trained model gave good results as comapred to the proposed model.

7. Conclusions and Future Work

The paper aims to identify and classify three different leaf diseases and one category of the guava plant's healthy leaf. A total of 3971 images are real time environment collected from 3 different sources. The proposed deep learning-based CNN model gives an accuracy of 66.5%. For comparative analysis, we have used two different pre-trained models, i.e., AlexNet and SqueezeNet. It is discovered from the comparative analysis that SqueezeNet performs better as compared to the other two models.

In the future, we try to hyper-tune the proposed model's parameters to achieve high classification accuracy on the available dataset.

8. Acknowledgement

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Research Article

Fungi Classification using Convolution Neural Network

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Abstract: This paper presents a model based on Convolution Neural Network (CNN) to identify and classify the fungi those causes disease to apple plant leaf. In this paper, apple scab, rust, black rot, and healthy leaf are studied and classified. The plant pathology dataset (publically available) consists of 9164 images are used for experimentation. The proposed CNN model identifies and classifies the apple leaves into these four categories. This model can successfully detect and classify diseases with an accuracy of 88.9%.

Keywords: Convolution Neural Network (CNN), Fungi diseases, Apple plant.

1. Introduction

The primary classification of living organisms is into five groups. Monera, Protista, Fungi, Plantae and Animalia. Among these powerful kingdoms of living organisms on earth, fungi have about 100,000 known species on the planet. The study of fungi is called Mycology, and the current research in this field is at the molecular level. For humans, the fungi are both beneficial and harmful. In this research, we are focusing on the harmful fungi which cause damage to crops and plants.

It is a known fact that India is an agricultural country, where most of the population rural in specific is dependent on agriculture for their living, thereby significantly contributing to the Indian economy. Plant diseases being the most significant reasons that lead to the destruction of plants and crops, require attention and care at many stages. Among most plant diseases, the primary cause can be attributed to the virus, bacteria, soil bacteria, airborne fungi, fungi, etc. Of these, fungi are accountable for many diseases in plants. Plant diseases affect the development of harvest yield of the plants and have social, biological and prudent effects on horticulture. The foods are grown on the ground, half lost due to fungi, as noticed in several studies. To monitor and make sure about hygiene and foodstuff, we need to keep a constant eye on the growth of fungus and its spore's essence in the current habitat. Utilization of scientific techniques becomes imperative as a part of the complex process (*i.e.*, recognizing visible symptoms and signs); natural judgment comes in handy in the process.

The manual method of inspection carried out by farmer, and agriculture experts require examining crops visually. This evaluation process is tedious, time-consuming and very subjective. Most of the methods used in identification are traditional or manual method. These require expensive equipment, expert labour and huge processing time. Hence, obtaining accurate, unbiased and spontaneous results has inspired us to propose a generic algorithm for automated, cost-effective systems for identifying and classifying the fungi.

This paper aims to identify and classify three types of fungi affected apple leaf diseases, which includes apple scab due to Venturia inaequalis, apple rust due to Gymnosporangium juniper-Virginiana, apple black rot due to botryosphaeria obtuse and a healthy leaf of apple. The proposed method uses a deep learning-based CNN model to identify and classify these different apple leaves.

The arrangement of the paper is as follows: Section II describes the literature survey. Section III narrates the dataset's preparation, and in Section IV, we describe the proposed CNN model used to identify and classify apple leaf diseases. Section V gives the experimental results and conclusions are summarized in Section VI.

2. Literature Survey

Yusuke Kawasaki *et al.,* [1] proposed a leaf-based disease identification system based on convolution neural networks (CNN). The CNN model is trained on 800 cucumber leaf images, giving good results in classifying cucumbers leaf into two disease classes and a non-diseased one. Dheeb Al Bashish *et al.*, [2] developed a software solution on image processing for automatic detection and classification of leaf diseases. The collected dataset is from Al-Ghor area in Jordan. They have tested five diseases: early scorch, cottony mould, ashen mould, late scorch, and tiny whiteness. Classification carried out using a neural network based on the backpropagation algorithm and achieved a precision of around 93%. Sa'ed Abed *et al.*, [3] focused on identifying two types of fungi affected bean diseases: bacterial brown spot and powdery mildew. The dataset included 40 testing images, which correctly classified with an accuracy of 100%. Muhammad Waseem Tahir *et.al.,* [4] proposed a CNN model for detecting different fungi types. Forty thousand eight hundred labelled images of 6 classes used to develop the fungus dataset and obtained an accuracy of 94.8%. Pujari JD *et al.,* [5] developed an automated system to detect fungi on crops like sugarcane, chilli and cotton. A total of 2616 samples used for classification; Cotton Alternaria leaf spot gave an accuracy of 94% and the sugarcane leaf redroot gave the lowest of 72%. Kuldeep S *et al.,* [6] proposed work on rust disease of pea plants to identify and classify them at the microscopic level. Five hundred images for testing; among these, correctly classified are 448. Halil Durmu *et al.,* [7] compared the accuracy of two pre-trained networks, i.e. AlexNet and SqueezeNet, from the dataset collected from plant Village. They concluded that SqueezeNet architecture gave good accuracy compared to AlexNet architecture. H. Park *et al.,* [8] developed a mechanism to diagnose and predict disease of strawberry leaf, fruit, or stem image taken by a smart phone. 1000 images were used for the model training and obtained an excellent accuracy of 89.7%. Meilani Wulandari *et al.,* [9] proposed work to identify the most poisonous fungi, Basidiomycota, which is the most common cause of death in humans from mushroom poisoning.1020 images were used for training and were able to detect fungus found to be 89.71%. H. Al-H*airy et al.,* [10] proposed an automatic detection and classification of five different diseases of plants. The experiment was conducted on 33 samples and has got an accurate detection of leaf diseases.

3. Preparation of Dataset

We are working on fungi affected apple leaf diseases. The most commonly caused leaf diseases of fungi are apple scab caused by Venturia inequality, apple rust caused by Gymnosporangium juniper-Virginiana, apple black rot caused by botryosphaeria obtuse and a healthy leaf of apple. Four different classes are involved in the study, as described below.

Apple Scab: Apple scab caused by the fungus Venturia inequali*s.* It typically shows up in mid-spring and often familiar through rainy weather. In the spring, during wet weather, the spores are moved away by the wind on the newly emerging leaves, which are vulnerable.

Apple scab initially appears as olive-coloured lesions on the backside of the leaves. As the fungus grows, the leaves' top sides produce similar olive- coloured lesions, and this well turns and becomes black with noted edges.

Apple Rust: Gymnosporangium juniper-Virginiana causes Apple rust. The exciting part of this disease is that it initially holds off a new plant already infected, such as cedar, to grow further. The hyphae grow into large galls. It shows yellow or orange spots on the leaves and distorted or spotted fruit..

Apple Black Rot: The black rot and frog eye leaf spot are the same disease at different disease cycles. The condition is caused by botryosphaeria obtuse. The leaves are covered with holes or have small brown spots on them. In due course, it may spread to different parts of the tree, eventually killing the tree and destroying it.

Below are instance images of diseased leaves and a healthy leaf shown in Figure 1 to 4.

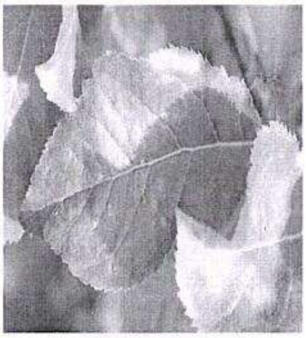


Fig (1): Apple Scab

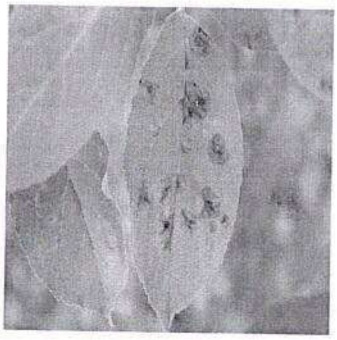


Fig (2): Apple Black rot

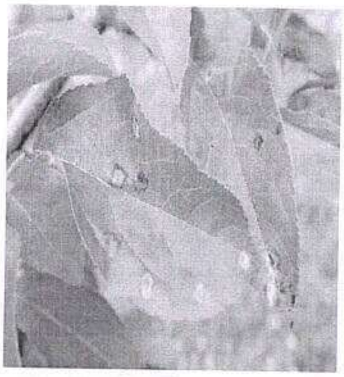


Fig (3): Apple Rust

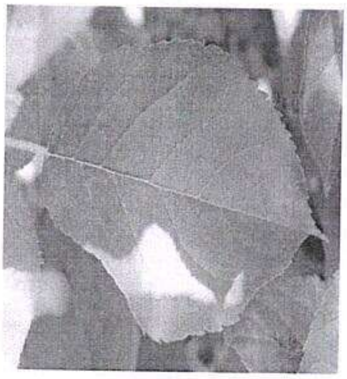


Fig (4): Apple Healthy

The experimental study carried out with a publically available Plant Pathology dataset. The dataset consists of 9164 images, and they are categorized into apple scab, black rot, rust and healthy leaf.

4. Proposed Model

The proposed CNN model has sequential layers, and each layer uses the previous layer as input to the model. CNN requires minimal pre-processing and is very good at analyzing images. With its multilayered structure, CNN is good at separating the desired features.

The CNN model's basic building blocks are the Convolution layer, Pooling layer, Activation Function, and the Fully Connected layer. Below figure 5 shows the general architecture of the CNN model.

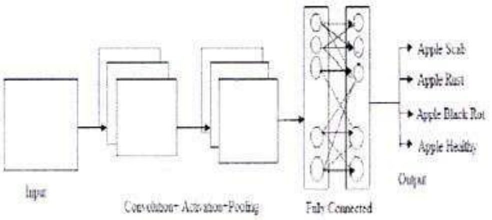


Fig 5: A general CNN architecture.

Convolution layer: The primary function of this layer is to convolve a filter (for example, 3x3 or 5x5) on the original image, i.e., the dot product of kernel (filter) and the image matrix. The obtained result summed up into a final matrix representing all the pixels obtained after the dot product. Below fig 6 shows the convolution operation.

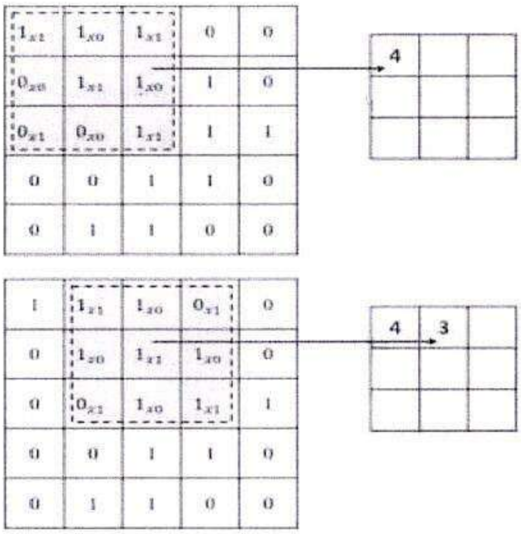


Fig 6: Convolution operation of an image with 3x3 kernel.

Activation layer: The matrix obtained at the convolution layer is small compared to the original image, and the obtained matrix run through an activation function. Some of the activation functions used in CNN are sigmoid, tanh and relu. In this model, we are using relu, and each neuron in our network activates this function. Relu function works when values more than zero are not changed, and values smaller than zero mapped to zero; as given by equation (1).

$$f(x) = 0, \quad \text{if } x < 0. \qquad (1)$$
$$x, \quad \text{otherwise.}$$

Pooling layer: The pooling function further reduces the matrix obtained from the previous layer. Here we concentrate on the essential features, which are dominant features of the image. From the matrix, we group each number which is generally the maximum (called Max pooling), which will lead the network to train it faster. Fig 7 shows the max pooling operation.

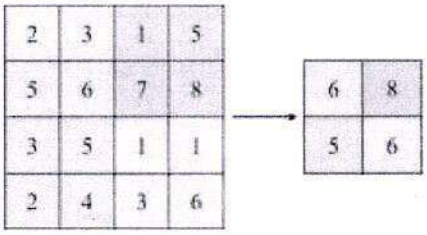


Fig 7: Max Pooling with 2x2 filter.

Fully connected layer: This layer's input is usually in a one-dimensional vector, representing the previous layer's output. This layer's output is the probabilities for different possible labels attached to the image (example: Apple scab, rot, cedar, healthy). The title that has the maximum likelihood is the classification result. Depending upon the CNN architecture, there may be multiple convolutions, activation and pooling layers. The three different input matrices, i.e. R, G and B channels for every image in the dataset, are given input to the first convolution layer. Each input image matrix is convoluted, and batch normalization is applied. Batch normalization is done to standardize the raw inputs while feeding to the next layer. After every batch normalization layer, Relu activation is used. The max pooling operation is then applied to the output matrix, which is connected to the Fully Connected (FC) layer. The FC layer's residue is connected to the softmax function, which outputs the value between 0 and 1. The adam optimizer is used to optimize the algorithm. The learning rate is at 0.001. Lastly, we train the model with 25 epochs to get accuracy. The below table 1 shows the architecture of our CNN model.

Table 1: CNN architecture of our model.

Name	**Type**	**Activations**
Image Input	Input	256*256*3
Conv_1	Convolution	256*256*8
Batch_Norm_1	Batch Normalization	256*256*8
Relu_1	RelU	256*256*8
Max_pool_1	Max Pooling	128*128*8
Conv_2	Convolution	128*128*16
Batch_Norm_2	Batch Normalization	128*128*16
Relu_2	RelU	128*128*16
Max_pool_2	Max Pooling	64*64*16
Conv_3	Convolution	64*64*32
Batch_Norm_3	Batch Normalization	64*64*32
Relu_3	RelU	64*64*32
Max_pool_3	Max Pooling	32*32*32
Conv_4	Convolution	32*32*64
Batch_Norm_4	Batch Normalization	32*32*64
Relu_4	RelU	32*32*64
Max_pool_4	Max Pooling	16*16*64
Conv_5	Convolution	16*16*128
Batch_Norm_5	Batch Normalization	16*16*128
Relu_5	RelU	16*16*128
Max_pool_5	Max Pooling	8*8*128
Conv_6	Convolution	8*8*256
Batch_Norm_6	Batch Normalization	8*8*256
Relu_6	RelU	8*8*256
Max_pool_6	Max Pooling	4*4*256
Conv_7	Convolution	4*4*256
Batch_Norm_7	Batch Normalization	4*4*256
Relu_6	RelU	4*4*256
FC	Fully Connected	1*1*4
softmax	Softmax	1*1*4
Class_output	Classification Output	--

5. Experimental Results

The dataset consists of 9164 images. The experiment conducted divides the dataset into a 60:40 split where 60% of the dataset we use for training and the remaining dataset, i.e. 40%, is used for testing purposes. The difficult task in identifying and classifying apple leaves is that the leaves with different diseases are very similar. Therefore, this similarity can lead the leaves to be mapped into the wrong classes. The CNN model trained through several iterations to classify 9164 images; we achieved an accuracy of 88.9%. The accuracy of the model is calculated as,

$$\text{Accuracy}\ (\%) = \frac{\text{Total number of images correctly classified}}{\text{Total number of images used for testing}} * 100$$

Class wise recognition accuracy is given in the table 2 below

Table 2: Class-wise recognition accuracy

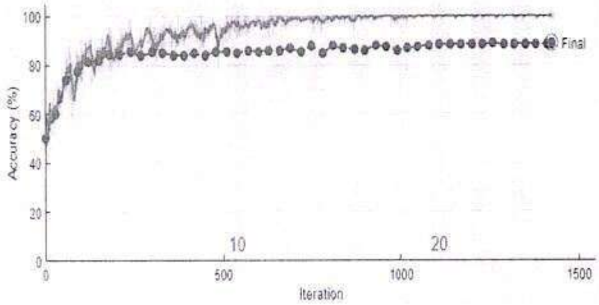
Sl. no.	Class Name	Accuracy in %
1	Apple Scab	86.6%
2	Apple Rot	86.8%
3	Apple Rust	47.6%
4	Apple Healthy	95.7%

The confusion matrix for the classified four categories is shown in the table 3 below.

Table 3: Confusion Matrix

	Apple Rot	Apple Rust	Apple Scab	Apple Healthy
Apple Rot	**931**	65	37	39
Apple Rust	118	**156**	8	46
Apple Scab	25	4	**1171**	152
Apple Healthy	13	15	90	**2628**
			Average in %	**88.9%**

The below graph fig 8 shows the accuracy obtained for training and validation data.



Fig(8) :Accuracy for training (blue line) & validation data (black line)

6. Conclusion

The proposed CNN model outperforms in the classification of fungi and yields 88.9% accuracy. The literature shows that the study of fungi classification using the Plant Pathology dataset is the first. In future, we aim to tune the network model with different architecture to achieve high classification accuracy.

7. Acknowledgement

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Deep Learning-Based Approach for Old Handwritten Music Symbol Recognition

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Abstract - *The advanced development in information and technology created a growing interest in optical music recognition for easy storage, access, and retrieval in digital form. By using OMR, we can transcribe music sheets into a machine-readable format. This facilitates the users to play, edit or compose the music. The handwritten music symbol recognition becomes more difficult as compared to print due to various issues such as a change in shape, distortion, etc. In this paper, the performance of deep learning-based method or old handwritten music symbol recognition was investigated by applying the MobileNetV2 architecture. In this stud, two approaches are presented. The first approach deals with the pure deep learning method, and in the second approach, the softmax layer is replaced with the traditional classifiers, namely-nearest neighbor classifier, support vector machine, and random forest classifier. Encouraging results were achieved on a publically available data set of old handwritten music symbols.*

Keywords — *Convolutional Neural Networks, Handwritten Music Symbol Recognition, Deep Learning, Support Vector Machine, K-Nearest Neighbour Classifier, Random Forest Classifier.*

I. INTRODUCTION

Automatic document image processing facilitates the understanding of the document content in layout, text, graphics, and other components. In the context of graphical symbols, music symbol and their transcription to the midi format are growing areas of interest since the last few decades. A lot of work has been reported in the past focusing on offline and online recognition of music. Recognition of printed music symbols and online symbols got enough success, and some commercial products have also come into the market.

Whereas handwritten music symbols recognition still has room for research due to various complexities such as variations in shape, writing styles, noise, and degradation caused by aging for high accuracy recognition. Recently the focus of research is shifted from traditional methods to deep learning-based trends.

In this study, the performance of the deep learning-based method for old handwritten music symbol recognition was investigated. Convolutional Neural Networks were applied in this approach while utilizing the simple and lightweight mobileNetV2 architecture. The experiments are carried out to show the efficacy of combining CNN and traditional classifiers such as SVM, Random Forest, and KNN.

The remainder of the paper is presented as: In the first section, we have introduced the problem. Related work was discussed in section 2. The proposed method is discussed in Section 3. Section 4 is dedicated to Experiments and Results. Finally, concluded in section 5.

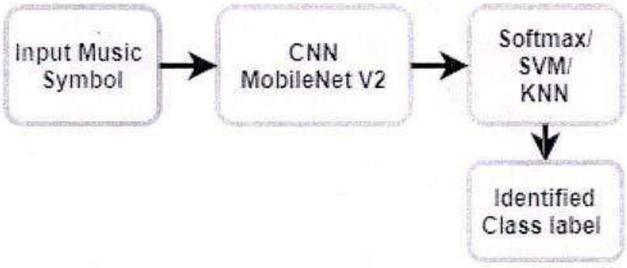

Figure 1.Schematic presentation of the proposed method

II. RELATED WORK

In [1] music symbol recognition method is presented for printed music sheet recognition; basic morphological operations were used to locate the symbol. Template matching was performed to identify similar symbols based on correlation. Graph-based method [2] called line adjacency graph (LAG) model is presented in for recognition of handwritten music symbols Dynamic Time Warping based method presented in [3] for handwritten music symbol

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recognition. Authors in [4] developed a method for handwritten music recognition; they used input image pixels as input to CNN for feature extraction, whereas for classification, they have applied BLSTM. In [5], use neural networks, support vector machine, KNN, and Hidden Markov Models for the recognition of music scores. Graph notations-based method is presented in [6] for recognition of music sheets with grammar and language rules.

The CNN-based approach is presented in [7] for the recognition of handwritten music symbols. VGG architecture was used as a feature extractor, and later traditional classifiers such KNN, Random Forest, and SVM are also evaluated. [8] The authors presented an approach for isolated handwritten music symbol recognition based on hybrid features extracted using discrete wavelet transform, Radon Transform, and Statistical Filters with KNN classifiers. [9] The authors developed an algorithm based on a combination of Radon and Discrete Wavelet Transform-based features and a KNN classifier with a tenfold cross-validation technique for recognition of isolated handwritten music symbols. The optical Music Object Recognition technique is given in [10] based on the deep learning method. The model takes an image of the music sheet as input and provides the symbol and notes categories. In [19], authors presented a method based on texture analysis named daisy descriptors, but because of its high dimension space, they have applied the feature selection method and achieved encouraging results. More details about music symbol recognition can be found in [21][22].

From the above paragraph, it can be seen that optical music symbol recognition is carried out on various modalities such as online, printed, and handwritten with various tools and techniques. In this paper, the lightweight deep learning-based technique for old handwritten music symbol recognition is presented and compared with previously published research.

III. PROPOSED METHOD

Old handwritten music symbol recognition is a challenging problem due to various issues in the shape and quality of the symbols due to aging. For effective recognition of these symbols, a method based on Convolutional Neural Network (CNN) is presented. The method utilizes MobileNetV2 architecture; with this, exhaustive experiments were performed to test its efficacy. For better understanding, the schematic diagram of the proposed approach is given in figure 1. The summary of our method is given below:

Step 1. Read the input of isolated music symbols with the size of 124x124x3

Step 2. Train the Convolutional Neural Network using MobileNetv2 architecture by using the principle of transfer learning.

Step 3. Replace the softmax layer with KNN, SVM, and RF and train with deep features.

Step 4. Compute

Step 5. Choose the optimal model and end the process.

***A. MobileNet*:** MobileNet was introduced in[15,16] based on depthwise separable convolutions. In MobileNet single filter is applied to each input channel, later point-wise convolutions combine the outputs depth-wise by applying 1x1 convolutions. The architecture applies separately the both filtering a combining layer. The basic mobile net applies depth-wise convolutions with the size of 3x3. MobileNet takes input and projects it into a higher dimension into a tensor with a low dimension. The MobileNetV2 comprises the 2D convolution layers, bottleneck layers, 1D convolution layers, Relu6, average pooling layer to form a network architecture. Setting of hyperparameters is given as follows: batch_size = 32, img_height = 128,img_width = 128,seed = 123, epochs = 200. The details about architecture are given in Table 1 and Fig. 1.

Table 1 : MobileNetV2 architecture[16]

Input	Operator	t	c	n	s
224x224x3	2D Convolution	-	32	1	2
112x112x32	Bottleneck	1	16	1	1
112x112x16	Bottleneck	6	24	2	1
56x56x24	Bottleneck	6	32	3	2
28x28x32	Bottleneck	6	64	4	2
14x14x64	Bottleneck	6	96	3	2
14x14x96	Bottleneck	6	160	3	1
7x7x160	Bottleneck	6	320	1	2
7x7x320	2D Convolution (1x1)	-	1280	1	1
7x7x1280	Average Pooling (7x7)	-	-	1	1
1x1x1280	2D Convolution (1x1)	-	k	-	-

***B. k- Nearest Neighbor Algorithm*:** KNN classifier is the most commonly used classification technique in pattern recognition problems due to its simplicity [14]. It is a supervised algorithm works on principle of majority voting and nearest neighbor search. Being a non-parametric technique, this algorithm does not make any assumption about the underlying data. First it stores the training data provided with labels of categories and when given unknown data point, it is going to be classified in to the category which is most similar to the new data.

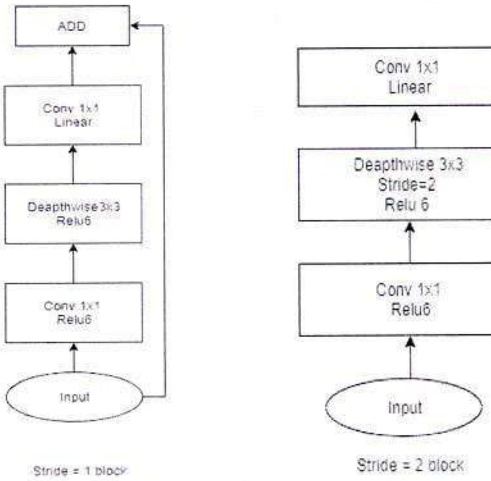

Figure 2. Convolution blocks for MobileNetV2

The similarity will be computed using suitable distance measure such Euclidean distance. In this case, there are seven categories represented by various old handwritten music symbols and used value of K=1.

Let M and N be the training and testing samples respectively denoting the feature vectors of music symbols. The Euclidean distance between M and N is defined on its components Mi& Ni is given below:

$$d(M, N) = \sqrt{\sum_{i=1}^{n} (M_i - N_i)^2} \text{ .... Eq.[1]}$$

3.3 Support Vector Machine (SVM): SVM is one of the most popular supervised learning algorithms used in machine learning for classification problem. Fundamentally, this algorithm belongs to family of supervised learning algorithms and developed by Vapnik [17] based on statistical learning theory. SVM tries classifying the data by transforming it to hyperplane which provides the maximum margin for class separation.

For the given n feature vectors denoted as xi, a hyperplane :

$$g(x) = w^T.x - b \text{ ....Eq. [2]}$$

separates each feature vector into two class:

$$y_i(w^T.x_i - b) \geq 1 \text{ ....Eq.[3]}$$

for maximizing the margin of hyperplane. In this work, a simple linear SVM is employed, to investigate the separability of the deep features.

C. Random Forest Classifier: Random Forest (RF) is meta learning algorithm [12] used for classification as well as regression task. It is also called a meta estimator which fits a number of decision tree classifiers on subsamples, later it uses the averaging criteria for good accuracy and to avoid the over fitting. Random forest is composed of number decision trees and the procedure of decision trees can be realized from steps given below [11]:

Step1. Let n be the training samples from dataset and number of features in feature vector will be denoted by Xi .

Step2. To build the training set each time for the tree n time replacement is made from all n samples.

Step3. The features will be fi <<xi for the decision at node of tree and each tree built in such way that it will be at its largest extent.

Step4. Each tree provides a result for particular class the classifier chooses average result for majority for the classification.

Step5. The label will be assigned based on the voting given by all trees.

IV. EXPERIMENTS AND RESULTS

A. Dataset: To evaluate our approach based on convolutional neural networks, publicly available Alicia Fornes dataset of old handwritten music symbols from [18] was used. This dataset comprises total 4098 music symbols out of which 2128 are clefs and 1970 are accidentals. These symbols are classified into seven classes namely Accidental double sharp(AS), Accidental flat(AF), Accidental Natural(AN), Accidental sharp(AS), Clef alto(CA), Clef bass(CB) and clef Treble(CT). Some samples from dataset are shown below:

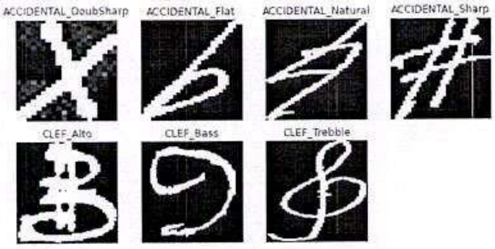

Figure 3. Some samples of music symbol from database

B. Evaluation Protocol: Aim of presented work is to evaluate the performance of CNN based deep features for recognition of old handwritten music symbols. To do this, the dataset is divided into two parts namely training and testing set with size of 3684 and 410 respectively. Further , precision (P), recall(R), F1 score and Accuracy were computed as quantitative measures to evaluate the performance of our method and the same are defined below:

$$P = \frac{TP}{TP + FP}$$

$$R = \frac{TP}{TP + FN}$$

$$F1 - Score = \frac{2 * (R * P)}{R + P}$$

$$Accuracy = \frac{TP + TN}{TP + TN + FP + FN}.$$

Where TP: True Positive, TN: True Negative, FP: False Positive, FN: False Negative.

C. Results and Discussion: This work aimed to develop efficient algorithm to recognize old handwritten music symbols, to validate the performance of presented method sires of experiments with light weight CNN Model such MobileNetV2 were performed. Initially, pre-trained model with existing weights and setting, only last dense layer was modified as per the number of classes under consideration. Secondly, the model was trained from scratch with our dataset while keeping mobilenetv2 architecture as it is, and finally, softmax was replaced with traditional classifiers namely SVM, KNN and RF. Accuracy vs. loss graphically explained for the training and testing procedure in Figure2 and Figure3 for deeper understanding.

In table 2. the results are shown for recognition of old handwritten music symbols with transfer learning and training from scratch using mobileNetV2, from table 1 it can be noted that for all classes precision, recall and F1-measure are more than 97% which shows the significance of presented method. Whereas when model is trained from scratch gives enhanced results as compared to transfer learning.

From table 3 the performance of support vector machine for old handwritten music symbol recognition can be explored. Further experiments are also carried out in both scenarios such as transfer learning and training from scratch. SVM has given encouraging results with precision, recall and f-measure more than 96%. SVM performed slightly well when applied to the features extracted by training the CNN from scratch as compared to pre-trained CNN. Performance of KNN classifier was observed with deep features for handwritten music symbol recognition and presented in table 4. The value of K=1 and distance measure as Euclidean distance during the experiments. The same way as SVM classifier KNN have performed well, again model trained from scratch given high accuracy compared to pre-trained CNN.

Overall precision, recall and f-measure is noted as near to 100% with KNN. Later, the random forest classifier was evaluated with deep features for old handwritten music symbol recognition and noted superior performance as compared to KNN and SVM; the results are shown in table 4. Random Forest also performed smart when applied to CNN trained from scratch. Precision, recall and f1-measure for old handwritten music symbol recognition using Random Forest are noted more than 98% for both the scenarios.

Table 2. Old Handwritten Music Symbol Recognition Results using MobileNetV2 CNN based on Transfer Learning and Training from scratch

Class	CNN (Transfer Learning)			CNN (Trained from scratch)		
	PR	RE	F1	PR	RE	F1
AD	1.00	1.00	1.00	1.00	1.00	1.00
AF	0.95	1.00	0.98	1.00	1.00	1.00
AN	1.00	0.95	0.97	1.00	0.98	0.99
AS	1.00	1.00	1.00	1.00	1.00	1.00
CA	0.97	0.98	0.98	1.00	1.00	1.00
CB	1.00	1.00	1.00	1.00	1.00	1.00
CT	0.98	0.98	0.98	0.99	1.00	0.99

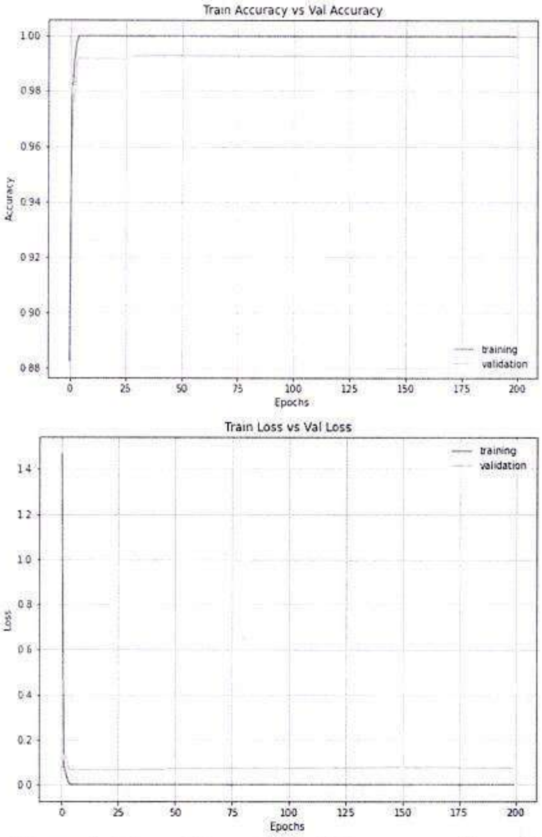

Figure 4. Plots of Accuracy & Loss on train and test set when MobileNetv2 applied for transfer learning.

Overall recognition accuracy using MobileNetv2 and deep features with SVM, KNN and, Random forest for both scenarios such as transfer learning and training from scratch is given in Table 5. When transfer learning was applied, CNN has given the accuracy of 98.53 %, CNN+SVM given the accuracy of 98.78%, CNN+KNN and CNN+SVM has given the accuracy of 98.78%, whereas CNN+RF performed superiorly. When the model trained from starch CNN has given the accuracy of 99.75% which highest accuracy as compared to all. SVM, KNN and, RF have given the accuracies 99.02%, 99.26% and, 99.51% respectively.

Table 3. Old Handwritten Music Symbol Recognition Results using MobileNetV2+SVM based on Transfer Learning and Training from scratch

Class	CNN+SVM (Transfer Learning)			CNN + SVM (trained from scratch)		
	PR	RE	F1	PR	RE	F1
AD	1.00	1.00	1.00	1.00	1.00	1.00
AF	0.98	1.00	0.99	0.95	1.00	0.98
AN	1.00	0.96	0.98	0.98	0.98	0.98
AS	1.00	1.00	1.00	1.00	1.00	1.00
CA	0.97	0.98	0.98	0.98	1.00	0.99
CB	1.00	1.00	1.00	1.00	1.00	1.00
CT	0.98	0.98	0.98	1.00	0.96	0.98

Table 3. Old Handwritten Music Symbol Recognition Results using MobileNetV2+ KNN based on Transfer Learning and Training from scratch

Class	CNN+KNN (Transfer Learning)			CNN + KNN (trained from scratch)		
	PR	RE	F1	PR	RE	F1
AD	1.00	1.00	1.00	1.00	1.00	1.00
AF	0.98	1.00	0.99	0.98	1.00	0.99
AN	1.00	0.96	0.98	1.00	0.98	0.99
AS	1.00	1.00	1.00	1.00	1.00	1.00
CA	0.97	0.98	0.98	0.98	1.00	0.99
CB	1.00	1.00	1.00	1.00	1.00	1.00
CT	0.98	0.98	0.98	0.99	0.98	0.98

Table 4. Old Handwritten Music Symbol Recognition Results using MobileNetV2+ Random Forest classifier based on Transfer Learning and Training from scratch.

Class	CNN+KNN (Transfer Learning)			CNN + KNN (trained from scratch)		
	PR	RE	F1	PR	RE	F1
AD	1.00	1.00	1.00	1.00	1.00	1.00
AF	0.98	1.00	0.99	1.00	1.00	1.00
AN	1.00	0.96	0.98	1.00	0.98	0.99
AS	1.00	1.00	1.00	1.00	1.00	1.00
CA	0.98	0.98	0.98	0.98	1.00	0.99
CB	1.00	1.00	1.00	1.00	1.00	1.00
CT	0.98	0.99	0.98	0.99	0.99	0.99

Table 5. Overall recognition accuracy in % of Old handwritten music symbols given by our method

Classifier	Transfer Learning	Trained from scratch
CNN(MobileNetV2)	98.53	99.75
CNN+SVM	98.78	99.02
CNN+KNN	98.78	99.26
CNN+RF	99.02	99.51

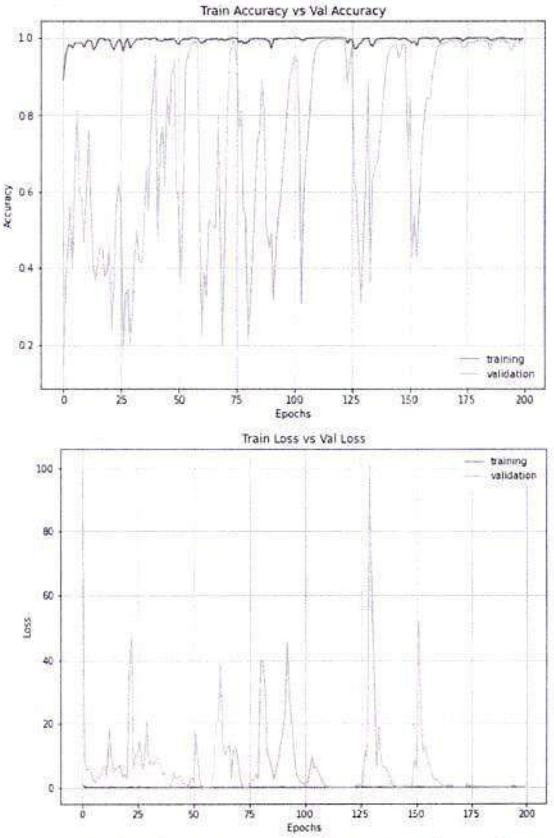

Figure 5: Plots of Accuracy & Loss on train and test set when MobileNetv2 trained from scratch

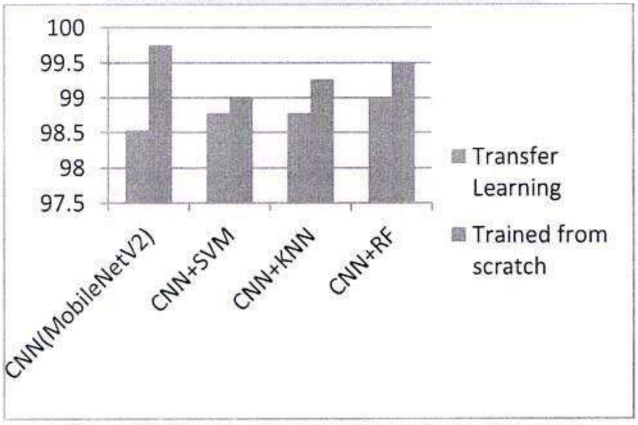

Figure 6: Graph showing comparison of various classification methods and CNN training scenarios for handwritten music symbol recognition.

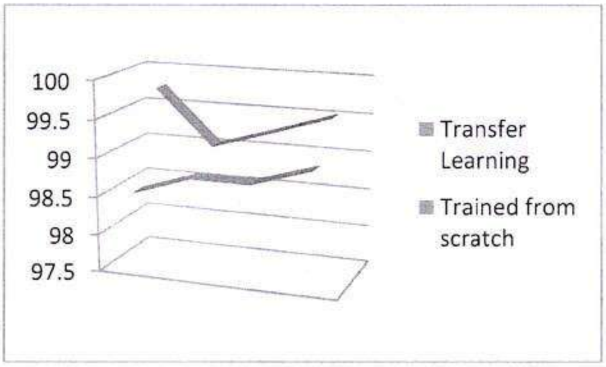

Figure 7. The line graph showing difference between the accuracies for handwritten music symbol recognition using transfer learning and training from scratch.

From the figure 4, one can observe that all classifiers have performed well with slight increase in accuracy for music symbol recognition. From figure 5 it can be noted that the CNN with mobilenetv2 architecture performed well as compared to the pre-trained model. Hence, from these experimental results, it can be learned that training from scratch though time-consuming but provides good results, and replacement of softmax layer with a traditional classifier such as Random Forest can enhance the results slightly.

Comparison of proposed method with previously published results in table 6 on the same dataset. In[3] authors presented projection profile-based features with dynamic time warping they achieved 95.81% of accuracy whereas our method has given 4% enhance results. Chain code histograms [20] given the accuracy of 98.05% whereas they suffer from noise and dependent on direction for computation. In[19] authors got 99.48 % of accuracy but it requires feature selection as an extra step due to high dimensionality of daisy descriptors. Out method given highest accuracy i.e.99.56% with CNN (mobileNetv2)+ Random Forest. In addition to this, our method does not require any sophisticated preprocessing or feature selection. It can be easily extended to printed as well as handwritten symbols with little modification such as hyperparameter tuning during the training procedure.

Table 6. Comparison with previous work

Authors	**Method**	**Accuracy**
Fornés, A et al. [3]	Projection Profile with Dynamic Time Warping	95.81%
Sukapla Chanda et al.[20]	Chain code Histogram with Modified Quadratic Classifier	98.05%
Malkar S et al. [19]	Daisy Descriptors with Grey Wolf Optimization	99.49%
Proposed Method	MobileNetV2 with Random Forest	**99.56%**

V. CONCLUSION

In this paper, the performance of MobileNetv2 for recognition of old handwritten music symbols was investigated. The in depth study of pre-trained as well as training from scratch was observed and noted that training from scratch gives the higher accuracy as compared to pre-train model. In addition to this, it is also observed that the performance of deep features with traditional classifiers for handwritten music symbol recognition was superior and understood that, performance of recognition is enhanced when Random forest is considered instead of softmax. Our method has outperformed as compared to existing methods on the same dataset and given accuracy of 99.58% .

In future, comparative study will be perfoemed with the various CNN models[23,24] for recognition of handwritten music symbols.

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ಧರಿನಾಡಿನ ವೃತ್ತಿ ಕಲಾವಿದರು

ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ
ಮುಖ್ಯಸ್ಥರು ಕನ್ನಡ ಸಾಹಿತ್ಯ ವಿಭಾಗ,
ಕರ್ನಾಟಕ ಕಲಾ ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ

ಕರ್ನಾಟಕದ ಕಿರೀಟವೆಂದು ಹೆಸರು ಪಡೆದ ಬೀದರ ಜಿಲ್ಲೆ 'ಧರಿ' ನಾಡೆಂದು ಇನ್ನೊಂದು ಹೆಸರು. ಧರಿ ಎಂದರೆ ಎತ್ತರವಾದ ಪ್ರದೇಶ ಎಂದರ್ಥ. ಧರಿನಾಡಾದ ಬೀದರ ಜಿಲ್ಲೆ ಅತ್ಯಂತ ವಿಶಾಲ ವ್ಯಾಪ್ತಿಯನ್ನುಳ್ಳ ಜಾನಪದದಲ್ಲಿ ಜನಪದ ಕಲೆಗಳಿಗೆ ದೊಡ್ಡ ಸ್ಥಾನವಿದೆ. ಸಮ್ಮಿಶ್ರ ಸಂಸ್ಕೃತಿಯ ಪ್ರತೀಕವಾದ ಜಾನಪದ ಕಲೆಗಳನ್ನೆಲ್ಲ ನಾವಿಲ್ಲಿ ಕಾಣುತ್ತೇವೆ. ಕರ್ನಾಟಕದ ಇನ್ನಾವ ಭಾಗದಲ್ಲೂ ಕಾಣದ ವೈಶಿಷ್ಟ್ಯಪೂರ್ಣವಾದ ನಾಗರಪಂಚಮಿ ಉತ್ಸವದ 'ಬುಲಾಯಿ' ಕಲೆ ಇಲ್ಲಿದೆ.

ಧರಿ ಮತ್ತು ಗಡಿ ಬೀದರ ಜಿಲ್ಲೆ ಆಗಿರುವುದರಿಂದ ಆಂಧ್ರದ ಗಡಿ ಒಂದು ಕಡೆಯಾದರೆ, ಮಹಾರಾಷ್ಟ್ರದ ಗಡಿ ಇನ್ನೊಂದು ಕಡೆ. ಹೀಗಾಗಿ ಸಮ್ಮಿಶ್ರ ಸಂಸ್ಕೃತಿ, ಭಾಷೆ, ಹಾಗೂ ಜಾನಪದ ಕಲೆಗಳ ತೌರೂರು ಎನ್ನಬಹುದು. ವೃತ್ತಿಕಲಾವಿದರೆಂದರೆ, ಇಂದು ಕಲೆಗಾಗಿ ಜೀವನ ಎನ್ನುವಂತೆ, ಕಲಾವಿದರಾದವರು ತಮ್ಮ ಜೀವನವೆಲ್ಲ ಕಲೆಗಾಗಿ ಮೀಸಲಿಟ್ಟು ದಿನ ಬೆಳಗಾದರೆ ತಮ್ಮ ಸ್ವಸಂತೋಷಕ್ಕಾಗಿ ಹಾಡಿ–ಪಾಡಿ, ಕುಣಿದು ಕುಪ್ಪಳಿಸಿ, ಅಭಿನಯಿಸಿ ಇಲ್ಲವೆ ಜನರನ್ನು ಕಲೆಗಳ ಮೂಲಕ ರಂಜಿಸಿ, ಅವರಿಂದ ಕಾಣಿಕೆ ದಾನ ಪಡೆದು ಉಪಜೀವನ ನಡೆಸುವ ಕಲಾವಿದರೇ ವೃತ್ತಿಕಲಾವಿದರು. ಇಂಥ ಕಲಾವಿದರ ಕುರಿತು ಬೀದರ ಜಿಲ್ಲೆಯಲ್ಲಿ ಸಮೀಕ್ಷೆ ಮಾಡುವಾಗ ಮುಖ್ಯವಾಗಿ ಈ ಕೆಳಕಂಡ ವೃತ್ತಿ ಕಲಾವಿದರು ಎದ್ದು ಕಾಣುತ್ತಾರೆ. ಬುಡಬುಡಿಕೆ, ಕಿನ್ನರಿ ಜೋಗಿ, ದೊಂಬರು, ಹಾವಾಡಿಗರು, ಸುಡುಗಾಡು ಸಿದ್ಧರು, ಬಹುರೂಪಿ, ಭೂತೇರ, ಗೊಂದಲಿಗರು, ಕಾಲಜ್ಞ, ಬುರ್‌ಬುರ್ ಪೋಚಮ್, ಬಾಳಸಂತರು, ಕರಡಿ ಕುಣಿತ, ಜತೆಗಾರರು ಮತ್ತು ಕೋತಿ ಕುಣಿಸುವವರು.

ಬುಡಬುಡಿಕೆ : ಬೀದರ ನಗರದ ನೌಬಾದ ಹಾಗೂ ಮೈಲೂರು ರಸ್ತೆಯಲ್ಲಿ ಬುಡಬುಡಿಕೆಯವರು ವಾಸವಾಗಿದ್ದಾರೆ. ಬುಡಬುಡ ಶಬ್ದ ಮಾಡುವುದು ಚರ್ಮವಾದ್ಯವೇ ಆಗಿದೆ. ಹೀಗಾಗಿಯೇ ಬುಡಬುಡಿಕೆ ಎಂಬ ಹೆಸರು ಬಂದಿದೆ. ಬಲಗೈಯಿಂದ ಡಮರುಗದ ಢಂಢಂ ಶಬ್ದ ಮಾಡುತ್ತ ಎಡಗೈ ಮೇಲೆ ದಾನ ಕೊಟ್ಟವರ ಹಳೆಯ ಬಟ್ಟೆಗಳನ್ನು ಹೊದ್ದುಕೊಂಡು ಮನೆ ಮನೆಗೆ ಭಿಕ್ಷೆಗೆ ಬರುವ ಬುಡಬುಡಿಕೆಯವರು ತಲೆಗೊಂದು ರುಮಾಲು ಸುತ್ತಿರುತ್ತಾರೆ. ಅಂಗಿ, ಕೋಟು, ಪಂಚೆ ಧರಿಸುತ್ತಾರೆ.

ಬುಡಬುಡಿಕೆ ಕಲಾವಿದರು ಪ್ರತಿದಿನ ಮುಂಜಾನೆ ಮುಖ ತೊಳೆದು ಅಗರಬತ್ತಿ ಹಚ್ಚು ದೇವರನ್ನು ಪ್ರಾರ್ಥಿಸಿ ಹಳ್ಳಿಗೆ ಪಯಣ ಮಾಡುತ್ತಾರೆ. ಭಿಕ್ಷೆ ಬೇಡುವ ಮನೆಯ ಬಾಗಿಲಿಗೆ ಹೋಗಿ 'ಒಳ್ಳೆದಾಗುತಪ್ಪ' ಒಳೆದಾಗುತ್ತಪ್ಪ' ಎಂದು ಶುಭವನ್ನು ಹೇಳುತ್ತ ಶಕುನ ನುಡಿಯುತ್ತಾರೆ. ಅವರು ನುಡಿದುದೆಲ್ಲಾ ಸತ್ಯವೇ ಎನ್ನುವ ನಂಬಿಕೆ ಜನಪದರದಾಗಿದೆ. ಇಷ್ಟೇ ಅಲ್ಲ ಬುಡಬುಡಿಕೆ ಹೇಳುವುದೆಲ್ಲಾ ನಿಜವಾಗಿರುತ್ತದೆಂದು ನಂಬಿ ಭಿಕ್ಷೆ ನೀಡುವ ಮನೆಯವರು ಬಟ್ಟೆ, ಅನ್ನ, ರೊಟ್ಟಿ, ಜೋಳ, ಗೋಧಿ, ಇತರೆ ಕಾಳುಗಳನ್ನು ನೀಡಿ ಕಳಿಸುವ ಸಂಪ್ರದಾಯ ಇದೆ. ಒಟ್ಟಿನಲ್ಲಿ ಬುಡಬುಡಿಕೆಯವರು ಚತುರ ಮಾತುಗಾರರು, ಹೇಗಾದರೂ ಮಾಡಿ ಜೋಳಿಗೆ ತುಂಬಿಕೊಂಡು ಮುಂದಿನ ಮನೆಗೆ ಹೋಗಬೇಕೆಂಬ ಪ್ರಯತ್ನದಲ್ಲಿರುತ್ತಾರೆ. ಶುಭಾಶುಭಗಳನ್ನು ಬಹಳ ಜಾಣ್ಮೆಯಿಂದ ಹೇಳುತ್ತಾರೆ. ಅಶುಭ ಎಂದು ಹೇಳಿ ಅದಕ್ಕೆ ತಾವೇ ಪರಿಹಾರ ಸೂಚಿಸಿ ಮುಂದಿನ ಮನೆಗೆ ಹೋಗುತ್ತಾರೆ.

ಕಿನ್ನರಿ ಜೋಗಿ: ಕಿನ್ನರಿ ಜೋಗಿಗಳು ಅಲೆಮಾರಿಗಳ ಗುಂಪಿಗೆ ಸೇರಿದವರು. ಕೈಯಲ್ಲಿ ಕಿನ್ನರಿ (ತಂತಿವಾದ್ಯ) ತಲೆಗೆ ಸುತ್ತಿಕೊಂಡ ರುಮಾಲಿಗೆ ಮಣಿ–ಮುತ್ತುಗಳ ಸರ, ಬಣ್ಣ–ಬಣ್ಣದ ಅಂಗಿ ಕೊರಳಲ್ಲಿ ಮಣಿ–ಮುತ್ತುಗಳ ಸರ,

PRESENT STATUS OF FREE-RANGING DOGS OF BIDAR CITY

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Abstract:

Insights into the establishment of the dog-human relationship on streets. Domestic dogs (*Canis lupus familiaris*) are remarkably sensitive and responsive while interacting with humans. Pet dogs are known to have social skills and abilities to display situation-specific responses, but there is lack of information regarding free-ranging dogs which constitute majority of the world's dog population. Free-ranging dogs found in most of the developing countries interact constantly with familiar and unfamiliar humans receiving both positive and negative behavior. Thus, understanding human intentions and subsequent behavioral adjustments are crucial for dogs that share habitats with humans. Here we subjected free-ranging dogs to different human social communicative cues (friendly and threatening—low and high), followed by a food provisioning phase, and tested their responsiveness. Dogs exhibited higher proximity seeking behavior as a reaction to friendly gesture whereas, they were prompted to maintain distance depending on the impact of the threatening cues. Interestingly, only the high-impact threatening had a persistent effect which also remained during the subsequent food provisioning phase. An elevated approach in the food provisioning phase elicited the dependency of free-ranging dogs on humans for sustenance. Our findings suggest that free-ranging dogs demonstrate behavioral plasticity in interactions with humans; which provides significant

Keywords: Interspecific communication, referential gestures, social cognition, distal cues, etc.

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RESEARCH PAPER

In-situ green synthesis of fluorescent silica–silver conjugate nanodendrites using nanoporous frustules of diatoms: an unprecedented approach

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Abstract

Generally, nanodendrite synthesis is chemical mediated and expensive. The biogenesis of such hierarchical structures is still in its nascent stage. The present study aimed at exploiting the nanoporous frustules of *Halamphora subturgida*, as a source of biosilica for the biosynthesis and stabilization of conjugate nanodendrites of silica and silver. These minute diatom frustules when exposed to 9 mM of silver nitrate solution, a highly crystalline nanohybride dendrites were synthesized. The nanohybrid dendrite synthesis was initially confirmed by the formation of greyish-brown frustules after 72 h of exposure. The composite dendrites were thoroughly characterized by standard techniques. Electron microscopic images illustrated that the process began with the formation of isotropic hybrid nanospheres with an internal diameter of 20 nm and continued to develop anisotropic nanocrystals with time. The nanodendrites externally formed on the siliceous frustules, acting as a template for the former. They were characterized by distinct 100 nm wide and 1–2 µm long trunks and 70–100 nm wide and 220–220 nm long branches on either side of the trunk. The optical measurement revealed the fluorescence property of the nanostructures owing to the photoluminescent efficiency of the frustules. Both the externally derived hybrid nanodendrites and internally synthesized nanospheres possessed superior stability in the suspension with a zeta potential value of − 35.7 mV and − 24.8 mV, respectively. Thus, this method is eco-friendly and provides a new dimension for nanodendrite synthesis with minimal cost and maximal yield compared to its non-biologically synthesized counterparts that involve several other drawbacks like chemical hazards and high energy consumption.

Keywords Diatoms · Siliceous frustules · SiO_2–Ag nanodendrites · Eco-friendly

Introduction

Nanodendrites are nanometallic structures characterized by hierarchical branches and sub-branches that outcompete other complex metallic nanostructures owing to their high surface area and interfacial structures. Metallic nanodendritic structures have drawn the attention of researchers over the past decade due to their unique "lightning rod" effect which creates a strong electric field at the tip of the structure owing to an accumulation of charge at a sharper edge [1]. They are active hubs of binding sites for substrates and metals, potentially applicable in the field of surface-enhanced Raman scattering (SERS) [2], surface-enhanced fluorescence (SEF) [3], chemical sensor technology [4], catalysis [5] and so on. Conjugate or bimetallic nanodendrites have immense therapeutic properties due to their 3D structures and large surface area. These nanostructures possess therapeutic functionalities in the field of photothermal therapy, radiotherapy, drug delivery and theranostics to name a few [6].

Silver (Ag) nanodendrites have been extensively studied worldwide due to better hydrophobic surface and narrow plasmon resonance [7]. Non-biological syntheses of Ag

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Arthrospira platensis (Cyanobacteria) – a potential biofactory for fluoromagnetic nanoiron production

Sreemanti Banerjee[1], Abhishek Bhattacharya[2], Piya Roychoudhury[3], Anjan K. Dasgupta[2], Moumita Dutta[4] and Ruma Pal[1]

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ABSTRACT

Bioconversion of Fe^{3+} to Fe^0 followed by spindle shaped magneto-fluorescent nanoiron production has been investigated using *Arthrospira platensis* as a potential bio-reagent. The characteristic features, e.g. in situ localisation, magnetic and fluorescent properties of synthesised nanoparticles, were explored. Bioconversion occurred when healthy growing biomass of *Arthrospira platensis* was exposed to 0.01 M aqueous solution of $FeCl_3$ for 96 h at 25 °C with pH5.2. Spindle-shaped nanoiron was synthesised both inside and outside the cells. The average dry and hydrodynamic sizes for intracellular particles were 24.26 ± 3.40 nm × 5.45 ± 1.66 nm and 175.9 nm, respectively; whereas size variation for extracellular particles was 23.62 ± 3.49 nm × 8.41 ± 4.33 nm and 40.02 nm, respectively, as observed using transmission electron microscopy (TEM) and dynamic light scattering (DLS) analysis, respectively. Further characterisations were conducted using scanning electron microscopy (SEM), Fourier transform infrared (FTIR) spectroscopy, energy dispersive X-Ray spectroscopy (EDX), and X-Ray diffraction analysis (XRD). Nonspherical nanoiron particles generated multiple absorption bands at approximately 230, 350, and 480 nm in the UV-Vis spectra. Fluorescence of nanoiron was detected using confocal microscopy both inside and outside cells employing a blue filter (λ_{ex}–425 nm, λ_{em}–475 nm). The magneto-fluorescent nature of synthesised nanoiron was estimated using fluorimetric analysis and dynamic light scattering study using a 0.5-tesla static magnetic field (SMF) at 4 °C. The investigation showed that the static magnetic field induced non-invasive clustering effect of nanoiron directly influence fluorescence intensity and its lifetime. The presence of superparamagnetism was detected in iron nanoparticles using a superconducting quantum interference device-vibrating sample magnetometer (SQUID-VSM).

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Biosynthesis; Cyanobacteria; Fluorescence; Iron nanoparticle; Magnetic

INTRODUCTION

Magnetic nanoparticles serve as promising agents in the field of nano-biotechnology for their diagnostic and therapeutic uses (Wolfbeis 2015; Lisjak & Mertelj 2018; Nimi *et al.* 2018). This is one of the most investigated groups of submicron particles because of their morphotypes and surface functionalities that can lead to changeable properties under magnetic fields of different strengths. Among the magnetic nanoparticles (MNPs), iron-based nanomaterials have a wide range of applications, including magnetic fluid recording (Singamaneni *et al.* 2011), electrochemical and bioelectrochemical sensing (Teymourian *et al.* 2013), microwave absorption (Zhang *et al.* 2013), magnetic resonance imaging (MRI; Rashad & Ibrahim 2012), and environmental remediation (Ge *et al.* 2007; Tang & Lo 2013; Pratt 2014). Recently, nano-biotechnological research has been enriched after the synthesis of magneto-fluorescent nanocomposites. Incorporation of fluorescence into magnetic nanostructures has resulted in synthesis of these nanocomposites, which can serve as multimodal imaging probes in medical diagnostics, drug delivery, and magnetic hyperthermia therapy (Shanmuga *et al.* 2015; Abenojar *et al.* 2016). These nanomaterials have an important role in cell tracking and other cytometric applications as they can be visualised using fluorescence microscopy and controlled by external magnetic field. Magneto-fluorescent particles are also used to prepare nano-blocks of nano, electronic, and photonic devices (Corr *et al.* 2008). Simultaneous observation of magnetically controllable materials using fluorescence microscopy has made the particles highly attractive for biomedical applications.

Iron-based nanomaterials are commonly synthesised using physical and chemical methods (Sheoran & Pawan 2018). However, not only are the methods energy-consuming, but also toxic. Thus, reagents required for their synthesis pose a serious threat to nature. In the search for biogenic synthesis of this group of nanometals, some attempts have used algae. Brayner *et al.* (2012) reported synthesis of spherical ferrihydrite nanoparticles by *Euglena gracilis* G.A.Klebs in vacuoles of cells. They previously reported intracellular biosynthesis of akagenite (β-FeOOH) nanorods in free cells of *Anabaena flos-aquae* Brébisson ex Bornet & Flauhault, *Calothrix pulvinata* C.Agardh ex Bornet & Flahault, and *Klebsormidium* P.C. Silva, K.R. Mattox & W.H. Blackwell (Brayner *et al.* 2009). Biosynthesis of iron oxide and zerovalent iron nanoparticles by *Chlorella* Beyerinck

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ಅರುಹು ಕುರುಹು

ಸಾಹಿತ್ಯ ಸಂಸ್ಕೃತಿಯ ಶೋಧದಲ್ಲಿ

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ಸಂಪಾದಕರು
ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ

ಜಾನಪದ ಜಗತ್ತು ದ್ವೈಮಾಸಿಕ
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ಲೋಕಸಿರಿ ತಿಂಗಳ ಅತಿಥಿ

ಮುಖಪುಟ ವಿವರ

ಜನಾಬ್ ಸಲೀಂ ಹಸನ್ ಚಿಸ್ತಿ ಅವರಿಗೆ ನಾಡೋಜ ಎಚ್.ಎಲ್. ನಾಗೇಗೌಡ ರಾಷ್ಟ್ರೀಯ ಪ್ರಶಸ್ತಿ ಪ್ರದಾನ 2021 ಮತ್ತು ಪ್ರವಾಸಿ ಜಾನಪದ ಲೋಕೋತ್ಸವ 2022ರ ಸಂದರ್ಭದಲ್ಲಿ ಕಲಾ ಮೇಳ ಉದ್ಘಾಟನೆ

ಸಂಪಾದಕೀಯ............

ಕರ್ನಾಟಕ ಜಾನಪದ ಪರಿಷತ್ತಿಗೆ 40 ವರ್ಷಗಳ ಇತಿಹಾಸ, ಅಂದಿನಿಂದ 'ಜಾನಪದ ಜಗತ್ತು' ಪತ್ರಿಕೆ ನೆಲಮೂಲದ ಸಂಸ್ಕೃತಿಯ ಜಾಗೃತಿಯನ್ನು ಮಾಡುತ್ತ ಬಂದಿರುತ್ತದೆ. ಜಾನಪದ ವೈಜ್ಞಾನಿಕ ನೆಲೆ ಬೆಲೆಯನ್ನು ಗುರುತಿಸಿ ಅದರ ಮಹತ್ವ ಏನೆಂಬುದನ್ನು ತಿಳಿಸಿಕೊಟ್ಟಿದೆ. ನಾಡೋಜ ಎಚ್.ಎಲ್. ನಾಗೇಗೌಡರ ಸಾರಥ್ಯದಲ್ಲಿ ಬೆಳಕನ್ನು ಕಂಡ ಜಾನಪದ ಜಗತ್ತು ನಿಯತಕಾಲಿಕೆಯು ಜನ ಸಮುದಾಯದ ಆಸಕ್ತಿಯನ್ನು ಹೆಚ್ಚಿಸಿದೆ. ಕರ್ನಾಟಕ ಜಾನಪದ ಪರಿಷತ್ತಿನ ಹಾಲಿ ಅಧ್ಯಕ್ಷರು, ದಕ್ಷ ಆಡಳಿತಗಾರರು, ನಿವೃತ್ತ ಐಎಎಸ್ ಅಧಿಕಾರಿಗಳಾದ ಸನ್ಮಾನ್ಯ ಶ್ರೀ ಟಿ. ತಿಮ್ಮೇಗೌಡರು ಪರಿಷತ್ತಿನ ಹಿರಿಮೆ ಗರಿಮೆಯನ್ನು ಹೆಚ್ಚಿಸಿದ್ದಾರೆ. ಆಡಳಿತ ಮಂಡಳಿ ಹಾಗೂ ಜಿಲ್ಲಾ ಘಟಕಗಳು ಜಾನಪದದ ಸಂರಕ್ಷಣೆ ಹಾಗೂ ಸಂವರ್ಧನೆಯ ವಿಶೇಷ ಕಾಳಜಿಯನ್ನು ಹೊಂದಿ ಅನೇಕ ಕಾರ್ಯಕ್ರಮಗಳು ಆಯೋಜಿಸುತ್ತಿವೆ.

ಜಾನಪದ ಜಗತ್ತು ನಿಯತಕಾಲಿಕೆಯ ಪ್ರಧಾನ ಸಂಪಾದಕರಾದ ಸನ್ಮಾನ್ಯ ಶ್ರೀ ಟಿ. ತಿಮ್ಮೇಗೌಡರು ಹಾಗೂ ಸಲಹಾ ಮಂಡಳಿಯ ಆಶಯದಂತೆ 3–4 ವಿಶೇಷ ಲೇಖನಗಳು ಪ್ರಕಟಿಸಲಾಗಿದೆ. ಜಿಲ್ಲಾ ಘಟಕಗಳ ಕಾರ್ಯಚಟುವಟಿಕೆಗಳು ಏನೆಂಬುದನ್ನು ನಾಡಿನ ಜನತೆಗೆ ಗೊತ್ತಾಗಬೇಕು. ಅದರಿಂದ ಜಾನಪದ ಸಾಹಿತ್ಯ ಕಲೆಗಳ ಕಡೆ ನಮ್ಮ ವಿದ್ಯಾವಂತ ಯುವ ಜನಾಂಗ ಆಕರ್ಷಿತರಾಗಲು ಸಾಧ್ಯವಾಗುತ್ತದೆ ಎಂಬುದು ಪರಿಷತ್ತಿನ ಧ್ಯೇಯವಾಗಿದೆ.

ಆ ದಿಶೆಯಲ್ಲಿ ಜಾನಪದ ಪರಿಷತ್ತು ಹತ್ತು ಹಲವಾರು ಕಾರ್ಯಸೂಚಿಗಳನ್ನು ಹಾಕಿಕೊಂಡು ಅದರ ಮೂಲಕ ತನ್ನ ಕಾರ್ಯಚಟುವಟಿಕೆಗಳನ್ನು ನಿರಂತರವಾಗಿ ವಿಸ್ತರಿಸಿಕೊಂಡು ಬರುತ್ತಿದೆ. ಜಿಲ್ಲಾ ಘಟಕಗಳು ಶ್ರಮಿಸುತ್ತಿವೆ. ನಾಡಿನ ಜಾನಪದ ತಜ್ಞರು, ವಿದ್ವಾಂಸರು ತಮ್ಮ ಸುತ್ತ ಮುತ್ತಲಿನ ಜಾನಪದ ಸಾಹಿತ್ಯ ಹಾಗೂ ಕಲಾ ಪ್ರಕಾರಗಳ ವಿಶೇಷತೆ ಕುರಿತು 3–4 ಪುಟಗಳ ಲೇಖನ ಬರೆದು ಕಳುಹಿಸಿಕೊಟ್ಟರೆ ಮುಂದಿನ ಸಂಚಿಕೆಗೆ ಬಳಸಿಕೊಳ್ಳಲು ಸಾಧ್ಯವಾಗುತ್ತದೆ. ಅದರ ಪರಿಚಯವೂ ನಾಡಿಗಾಗುತ್ತದೆಂಬ ಸದಾಭಿಪ್ರಾಯವೂ ನಮ್ಮೆಲ್ಲರದ್ದಾಗಿದೆ.

ಕೋವಿಡ್ ಹಾಗೂ ಇತರೆ ಕಾರಣಾಂತರಗಳಿಂದ ಜಾನಪದ ಜಗತ್ತು ಪತ್ರಿಕೆ ತಮ್ಮೆಲ್ಲರ ಕೈತಲುಪಲು ವಿಳಂಬವಾಗಿದೆ. ಅದಕ್ಕಾಗಿ ವಿಷಾದಿಸುತ್ತೇವೆ. ಪರಿಷತ್ತಿನ ಕಾರ್ಯಚಟುವಟಿಕೆ ಹಾಗೂ ಪತ್ರಿಕೆಯ ಬೆನ್ನೆಲುಬಾದವರು ಸನ್ಮಾನ್ಯ ಶ್ರೀ ಟಿ. ತಿಮ್ಮೇಗೌಡರು ಹಾಗೂ ಮ್ಯಾನೇಜಿಂಗ್ ಟ್ರಸ್ಟಿಯಾದ ಶ್ರೀ ಆದಿತ್ಯ ನಂಜರಾಜ್ ಅವರ ಸಲಹೆ ಸೂಚನೆ ಹಾಗೂ ಮಾರ್ಗದರ್ಶನದಿಂದ ಈ ಪತ್ರಿಕೆ ಬೆಳಕನ್ನು ಕಂಡಿದೆ. ಆಡಳಿತಾಧಿಕಾರಿ ಡಾ. ನಂದಕುಮಾರ ಹೆಗಡೆ ಹಾಗೂ ಸಿಬ್ಬಂದಿಗೂ ಧನ್ಯವಾದಗಳು ಸಲ್ಲುತ್ತವೆ.

ಸಾರಸ್ವತ ಪ್ರಪಂಚ ಈ ಜಾನಪದ ಜಗತ್ತು ಸಂಚಿಕೆ ಸಾದರದಿಂದ ಓದಿ ಸಂತೋಷಪಟ್ಟರೆ ಅದುವೇ ಪತ್ರಿಕೆಗೆ ಸಲ್ಲುವ ಪ್ರತಿಫಲ. ಓದುಗರಾದ ತಮ್ಮ ಅಭಿಪ್ರಾಯ ಮಾರ್ಗದರ್ಶನ ಪತ್ರಿಕೆಯ ಬೆಳವಣಿಗೆಗೆ ಸಹಕಾರಿಯಾಗುತ್ತದೆಂಬ ಅಭಿಪ್ರಾಯ ನಮ್ಮದು. ಇಲ್ಲಿಯ ಪ್ರಕಟಿತ ಲೇಖನಗಳಿಗೆ ಆಯಾ ಲೇಖಕರೇ ಹೊಣೆಗಾರರು ಎಂಬುದು ಓದುಗರ ಗಮನಕ್ಕೆ ತರಬಯಸುತ್ತೇನೆ.

ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ
ಸಂಪಾದಕ

೪೧. ಮಹಿಳಾ ಸಬಲೀಕರಣ ಕುರಿತು ಅಂಬೇಡ್ಕರ್ ಅವರ ಚಿಂತನೆಗಳು: ಅವರ ದೂರದರ್ಶಿತ್ವದ ನಿರ್ವಾಹಕರಾಗಿ ಮಾಧ್ಯಮ / ೨೬೯
ಡಾ. ವಾಹಿನಿ ಅರವಿಂದ್
೪೨. ಮಹಿಳಾ ಸಬಲೀಕರಣದ ಸವಾಲುಗಳು / ೨೭೫
ಡಾ. ಸುಧಾ ಎಸ್. ಕೌಜಗೇರಿ
೪೩. ದೇವನೂರರ 'ಎದೆಗೆ ಬಿದ್ದ ಅಕ್ಷರ' : ಕತ್ತಲ ರಾಜ್ಯದ ಕಣ್ಬೆಳಕು / ೨೮೦
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೪೪. ಉನ್ನತ ಶಿಕ್ಷಣದಲ್ಲಿ ಭಾರತ ಸರ್ಕಾರದ ಡಿಜಿಟಲ್ ಉಪಕ್ರಮಗಳು / ೨೮೫
ಮಹೇಶ ಬಿರಾದಾರ
೪೫. ಇ–ಶ್ರಮ್ ಪೋರ್ಟಲ್: ಭಾರತದ ಅಸಂಘಟಿತ ಕಾರ್ಮಿಕರ ಕಲ್ಯಾಣಕ್ಕೆ ವರದಾನ
* ಡಾ. ರಾಧಾಕೃಷ್ಣ * * ಶ್ರೀಗೌರಿ ಕೆ. / ೨೯೧
೪೬. ಡಿಜಿಟಲ್ ಯುಗದಲ್ಲಿ ಕೋರ್ ಬ್ಯಾಂಕಿಂಗ್ ಬಗ್ಗೆ ಗ್ರಾಮೀಣ ವಿದ್ಯಾರ್ಥಿಗಳ ದೃಷ್ಟಿಕೋನಗಳು / ೨೯೫
ಡಾ. ಮಾಲತಿ.ಕೆ.
೪೭. ಕನ್ನಡ ದೂರದರ್ಶನದಲ್ಲಿ ಡಬ್ಬಿಂಗ್ ಧಾರಾವಾಹಿಯ ಪ್ರಭಾವ ಕುರಿತು ಒಂದು ಅಧ್ಯಯನ / ೩೦೧
ಮುನಿಸ್ವಾಮಿ
೪೮. ಪದವಿ ವಿದ್ಯಾರ್ಥಿಗಳ ಇ–ಸಂಪನ್ಮೂಲ ಬಳಕೆಯ ಕುರಿತು ಒಂದು ಅಧ್ಯಯನ
ಸುರೇಶ ಎನ್. / ೩೦೬
೪೯. ಭಯೋತ್ಪಾದನೆ ಎಂಬುದು ಆಧುನಿಕ ಜಗತ್ತಿನ ಮಹಾ ಶತ್ರು / ೩೧೨
ಡಾ. ಧನಂಜಯ. ಬಿ.ಜಿ.
೫೦. ಭಾರತದ ಕೇಂದ್ರ ಬಜೆಟ್ ೨೦೨೨–೨೩: ಪ್ರಗತಿಪರ ಹಾಗೂ ಸಮತೋಲಿತ ಬಜೆಟ್ / ೩೧೭
ಡಾ.ಟಿ.ಪಿ.ಶಶಿಕುಮಾರ್
೫೧. ನಿಸಾರ್ ಅಹಮದ್ ಅವರ ಕವಿತೆಗಳಲ್ಲಿ ಕಾವ್ಯ ಮೀಮಾಂಸೆ / ೩೨೨
ಡಾ. ಶೋಭಾ ಸಾವಕಾರ
೫೨. ಜನಪದ ಕಲೆಗಳ – ಚಿಂತನ ಮಂಥನ / ೩೨೬
ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ
೫೩. ಶಂಕ ಬಸದಿ / ೩೩೦
ನಿಂಗರಾಜು
೫೪. ಚಪ್ಪಲಿಗಳು ಕಥೆಯಲ್ಲಿ ಮಹಿಳಾ ಸಂವೇದನೆ / ೩೩೪
ತಾಜ್ ಉನ್ನೀಸ
೫೫. ಪ್ರವಾಸೋದ್ಯಮ ಅಭಿವೃದ್ಧಿಯ ನಿವಾಸಿಗಳ ಗ್ರಹಿಕೆ: ಕರ್ನಾಟಕದಲ್ಲಿ ಕೊಡಗು ಜಿಲ್ಲೆಯನ್ನು ಉಲ್ಲೇಖಿಸಿ ಒಂದು ಪ್ರಕರಣದ ಅಧ್ಯಯನ
ಡಾ. ಸುಖೇಶ್ ಪಿ. / ೩೪೦

ಜನಪದ ಕಲೆಗಳ – ಚಿಂತನ ಮಂಥನ

ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ

ಜನಪದ ಬದುಕಿನ ಇನ್ನೊಂದು ಸ್ವಾರಸ್ಯಪೂರ್ಣ ಕ್ಷೇತ್ರ ಜನಪದ ಕಲೆ. ಕಲೆ ಎಂದರೆ ನೆನಪಿಗೆ ಬರುವುದು ಸೌಂದರ್ಯ. ಕಲೆಗಳ ಯಾವ ಪ್ರಕಾರ ತೆಗೆದುಕೊಂಡು ನೋಡಿದರೂ ಅಷ್ಟೇ. ಶಿಲ್ಪಕಲೆ ಮತ್ತು ಚಿತ್ರಕಲೆ ನೋಡಿ ಸಂತಸಗೊಳ್ಳಬಹುದು. ಇನ್ನಿತರ ಕಲೆಗಳಾದ ಹಾಡು, ಬಯಲಾಟ, ಭಜನೆ ಮತ್ತು ಕುಣಿತ ಮುಂತಾದವುಗಳನ್ನು ಕಿವಿಯಿಂದ ಕೇಳಿ, ಕಣ್ಣಿನಿಂದ ನೋಡಿ ಆನಂದಿಸಬಹುದು. ಈ ಆನಂದವೇ ಚೆಲುವಿಕೆ. ಒಟ್ಟಿನಲ್ಲಿ ಜನಪದ ಕ್ರಿಯಾಶಕ್ತಿಯ ಚುರುಕುಬುದ್ಧಿಯ ಅಭಿವ್ಯಕ್ತಿಯೇ ಕಲೆ ಎನ್ನಬಹುದು.

'ಸತ್ಯಂ ಶಿವಂ ಸುಂದರಂ' ಎನ್ನುವುದಾಗಲಿ, ಆಂಗ್ಲ ಕವಿ ಕೀಟ್ಸ್ ಹೇಳಿದ 'ಸತ್ಯವಾದುದೆಲ್ಲ ಸುಂದರ, ಸುಂದರವಾದುದೆಲ್ಲ ಸತ್ಯ' ಎನ್ನುವುದಾಗಲಿ ಕಲೆಗಳನ್ನು ಸೃಷ್ಟಿಸುತ್ತದೆ. ಅದರ ಮೇಲ್ಪದರವನ್ನು ಗುರುತಿಸುತ್ತದೆ. ಸದರೀ ವಿಷಯ ಜನಪದ ಕಲೆ ಕುರಿತಿದ್ದರಿಂದ ಹಳ್ಳಿ ಕಡೆ ಗಮನಹರಿಸೋಣ. ಹಳ್ಳಿ ಜನರು ಸಹೃದಯರು, ನಕ್ಕು ನಗಿಸುವ ಸ್ವಭಾವದವರು ದೈವೀಭಕ್ತರು, ಕರುಣಾಲವಾಲರು, ಹೊಟ್ಟೆ ತುಂಬ ಉಂಡು, ಬೆವರು ಸುರಿಸಿ ಕೆಲಸ ಮಾಡುವವರು. ರಾತ್ರಿ ಹೊತ್ತಾದಾಗ ದಿನದ ದಣಿವು ಕಳೆದುಕೊಳ್ಳಲು ಹಾಡಿ–ಪಾಡಿ, ಕುಣಿದು ಕುಪ್ಪಳಿಸುವರು. ಈ ಪದ್ಧತಿ ಪ್ರಾಚೀನ ಕಾಲದಿಂದ ಬೆಳೆದುಬಂದಿದೆ. ಹಾಡುಗಾರಿಕೆ, ಕಥೆಗಾರಿಕೆ, ಚೌಡಿಕೆ, ಅಲಾಯಿ ಹೆಜ್ಜೆ, ಕರಡಿ ಮಜಲು, ಏಕತಾರಿ, ಗೀಗಿ, ಗೊಂಡರ (ಕಥೆಗಾರಿಕೆ), ಲಂಬಾಣಿ ಹೋಲಿ, ಪುಗಡಿ, ಡೊಳ್ಳು, ಹಲಗೆ, ನಂದೀಧ್ವಜ ಕುಣಿತ, ಪುರವಂತಿಕೆ, ಭಜನೆ, ಬಹುರೂಪಿ, ತೊಗಲುಗೊಂಬೆ ಹಾಗೂ ಸೂತ್ರದ ಗೊಂಬೆಯಾಟ, ಬಯಲಾಟ, ಡೊಂಬರಾಟ, ಹಾವುಗಾರಾಟ, ಸುಡಗಾಡ ಸಿದ್ಧರಾಟ, ಕೋತಿಯಾಟ, ಕೋಳಿಗಳ ಕಾದಾಟ, ಕೋಣ ಹಾಗೂ ಎತ್ತಿನ ಕುಸ್ತಿ ಆಟ, ಕೋಲಾಟ ಮುಂತಾದವು ಜನಪದ ಕಲೆಗಳೆನಿಸಿವೆ. ಅವುಗಳಲ್ಲಿ ಕೆಲವು ಪ್ರದರ್ಶನ ಕಲೆಗಳಾದರೆ, ಕೆಲವು ವೃತ್ತಿ ಮತ್ತು ಮನರಂಜಕ ಕಲೆಗಳು, ಕೆಲವು ಧಾರ್ಮಿಕ ಕಲೆಗಳಾಗಿವೆ.

ಕೆಲವು ವರ್ಷಗಳ ಹಿಂದೆ ಇಂಥ ಕಲೆಗಳ ಪ್ರದರ್ಶನ ನಡೆದಾಗ ಅದೇನು ವೈಭವ? ಶ್ರೀಸಾಮಾನ್ಯರಲ್ಲದೆ. ಶ್ರೀಮಂತವರ್ಗದ ಹಳ್ಳಿಯ ಗಣ್ಯರು. ಕಲಾಕೋವಿದರಿಗೆ ಪ್ರೋತ್ಸಾಹಿಸುವುದರ ಜೊತೆಗೆ ಯೋಗಕ್ಷೇಮ ಕುರಿತು ವಿಚಾರಿಸಿ ಗೌರವದಿಂದ ಕಾಣುತ್ತಿದ್ದರು. ಹೊಗಳುತ್ತಿದ್ದರು. ಕಲೆ–ಕಲಾವಿದರನ್ನು ಬೆಳಕಿಗೆ ತರುವಲ್ಲಿ ಪ್ರತಿಭೆ ಗುರುತಿಸುವಲ್ಲಿ ಮುಂದಾಗುತ್ತಿದ್ದರು. ವೇದಿಕೆ ಮಾಡಿಕೊಡುತ್ತಿದ್ದರು. ಒಟ್ಟಿನಲ್ಲಿ ಹೇಳುವುದಾದರೆ ಕಲಾಕಾರರಿಗೆ ಯಾವುದೇ ಕೊರತೆ ಇರಲಿಲ್ಲ. ಹೀಗಾಗಿ ಜನಪದ ಕಲಾವಿದರು. "ಕಲೆಗಾಗಿ ಕಲೆ" ಎಂದು ತಮ್ಮ ಜೀವನ ಮೀಸಲಾಗಿಟ್ಟಿದ್ದರು. ಹಬ್ಬ–ಹರಿದಿನ ಉತ್ಸವಗಳಲ್ಲಿ ಕಲೆಗಳ

ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ, [illegible]

ಜನಪದ ಕಲೆಗಳ - ಚಿಂತನ ಮಂಥನ

ಡಾ. ಜಗನ್ನಾಥ ಹೆಬ್ಬಾಳೆ

ಜನಪದ ಬದುಕಿನ ಇನ್ನೊಂದು ಸ್ವಾರಸ್ಯಪೂರ್ಣ ಕ್ಷೇತ್ರ ಜನಪದ ಕಲೆ. ಕಲೆ ಎಂದರೆ ನೆನಪಿಗೆ ಬರುವುದು ಸೌಂದರ್ಯ. ಕಲೆಗಳ ಯಾವ ಪ್ರಕಾರ ತೆಗೆದುಕೊಂಡು ನೋಡಿದರೂ ಅಷ್ಟೇ. ಶಿಲ್ಪಕಲೆ ಮತ್ತು ಚಿತ್ರಕಲೆ ನೋಡಿ ಸಂತಸಗೊಳ್ಳಬಹುದು. ಇನ್ನಿತರ ಕಲೆಗಳಾದ ಹಾಡು, ಬಯಲಾಟ, ಭಜನೆ ಮತ್ತು ಕುಣಿತ ಮುಂತಾದವುಗಳನ್ನು ಕಿವಿಯಿಂದ ಕೇಳಿ, ಕಣ್ಣಿನಿಂದ ನೋಡಿ ಆನಂದಿಸಬಹುದು. ಈ ಆನಂದವೇ ಚೆಲುವಿಕೆ. ಒಟ್ಟಿನಲ್ಲಿ ಜನಪದ ಕ್ರಿಯಾಶಕ್ತಿಯ ಚುರುಕುಬುದ್ಧಿಯ ಅಭಿವ್ಯಕ್ತಿಯೇ ಕಲೆ ಎನ್ನಬಹುದು.

'ಸತ್ಯಂ ಶಿವಂ ಸುಂದರಂ' ಎನ್ನುವುದಾಗಲಿ, ಆಂಗ್ಲ ಕವಿ ಕೀಟ್ಸ್ ಹೇಳಿದ 'ಸತ್ಯವಾದುದೆಲ್ಲ ಸುಂದರ, ಸುಂದರವಾದುದೆಲ್ಲ ಸತ್ಯ' ಎನ್ನುವುದಾಗಲಿ ಕಲೆಗಳನ್ನು ಸೃಷ್ಟಿಸುತ್ತದೆ. ಅದರ ಮೇಲ್ಪದರವನ್ನು ಗುರುತಿಸುತ್ತದೆ. ಸದರೀ ವಿಷಯ ಜನಪದ ಕಲೆ ಕುರಿತುದ್ದರಿಂದ ಹಳ್ಳಿ ಕಡೆ ಗಮನಹರಿಸೋಣ. ಹಳ್ಳಿ ಜನರು ಸಹೃದಯರು, ನಕ್ಕು ನಗಿಸುವ ಸ್ವಭಾವದವರು ದೈವೀಭಕ್ತರು, ಕರುಣಾಲವಾಲರು, ಹೊಟ್ಟೆ ತುಂಬ ಉಂಡು, ಬೆವರು ಸುರಿಸಿ ಕೆಲಸ ಮಾಡುವವರು. ರಾತ್ರಿ ಹೊತ್ತಾದಾಗ ದಿನದ ದಣಿವು ಕಳೆದುಕೊಳ್ಳಲು ಹಾಡಿ-ಪಾಡಿ, ಕುಣೀದು ಕುಪ್ಪಳಿಸುವರು. ಈ ಪದ್ಧತಿ ಪ್ರಾಚೀನ ಕಾಲದಿಂದ ಬೆಳೆದುಬಂದಿದೆ. ಹಾಡುಗಾರಿಕೆ, ಕಥೆಗಾರಿಕೆ, ಚೌಡಿಕೆ, ಅಲಾಯಿ ಹೆಜ್ಜೆ, ಕರಡಿ ಮಜಲು, ಏಕತಾರಿ, ಗೀಗಿ, ಗೊಂಡರ (ಕಥೆಗಾರಿಕೆ), ಲಂಬಾಣಿ ಹೋಲಿ, ಪುಗಡಿ, ಡೊಳ್ಳು, ಹಲಗೆ, ನಂದೀಧ್ವಜ ಕುಣಿತ, ಪುರವಂತಿಕೆ, ಭಜನೆ, ಬಹುರೂಪಿ, ತೊಗಲುಗೊಂಬೆ ಹಾಗೂ ಸೂತ್ರದ ಗೊಂಬೆಯಾಟ, ಬಯಲಾಟ, ಡೊಂಬರಾಟ, ಹಾವುಗಾರಾಟ, ಸುಡಗಾಡ ಸಿದ್ದರಾಜ, ಕೋತಿಯಾಟ, ಕೋಳಿಗಳ ಕಾದಾಟ, ಕೋಣ ಹಾಗೂ ಎತ್ತಿನ ಕುಸ್ತಿ ಆಟ, ಕೋಲಾಟ ಮುಂತಾದವು ಜನಪದ ಕಲೆಗಳೆನಿಸಿವೆ. ಅವುಗಳಲ್ಲಿ ಕೆಲವು ಪ್ರದರ್ಶನ ಕಲೆಗಳಾದರೆ, ಕೆಲವು ವೃತ್ತಿ ಮತ್ತು ಮನರಂಜಕ ಕಲೆಗಳು, ಕೆಲವು ಧಾರ್ಮಿಕ ಕಲೆಗಳಾಗಿವೆ.

ಕೆಲವು ವರ್ಷಗಳ ಹಿಂದೆ ಇಂಥ ಕಲೆಗಳ ಪ್ರದರ್ಶನ ನಡೆದಾಗ ಅದೇನು ವೈಭವ ? ಶ್ರೀ ಸಾಮಾನ್ಯರಲ್ಲದೆ. ಶ್ರೀಮಂತವರ್ಗದ ಹಳ್ಳಿಯ ಗಣ್ಯರು. ಕಲಾವಿದರಿಗೆ ಪ್ರೋತ್ಸಾಹಿಸುವುದರ ಜೊತೆಗೆ ಯೋಗಕ್ಷೇಮ ಕುರಿತು ವಿಚಾರಿಸಿ ಗೌರವದಿಂದ ಕಾಣುತ್ತಿದ್ದರು. ಹೊಗಳುತ್ತಿದ್ದರು. ಬೆಳಕಿಗೆ ತರುವಲ್ಲಿ ಪ್ರತಿಭೆ ಗುರುತಿಸುವಲ್ಲಿ ಮುಂದಾಗುತ್ತಿದ್ದರು. ವೇದಿಕೆ ಮಾಡಿಕೊಡುತ್ತಿದ್ದರು. ಒಟ್ಟಿನಲ್ಲಿ ಹೇಳುವುದಾದರೆ ಕಲಾಕಾರರಿಗೆ ಯಾವುದೇ ಕೊರತೆ ಇರಲಿಲ್ಲ. ಹೀಗಾಗಿ ಜನಪದ ಕಲಾವಿದರು. "ಕಲೆಗಾಗಿ ಕಲೆ" ಎಂದು ತಮ್ಮ ಜೀವನ ಮೀಸಲಾಗಿಟ್ಟಿದ್ದರು. ಹಬ್ಬ-ಹರಿದಿನ ಉತ್ಸವಗಳಲ್ಲಿ ಕಲೆಗಳ ಪ್ರದರ್ಶನ ನಡೆಯುವುದೆ, ದೊಡ್ಡಾಟ, ಸಣ್ಣಾಟ, ಬೀದಿ ಬಯಲಾಟ, ಕೋಲಾಟವಾಡುವುದೆ, ಮೊಹರಂದಂದು ಅಲಾಯಿಸುತ್ತ ಹಾಡಿ-ಕುಣಿದು ಕುಪ್ಪಳಿಸುವುದೆ, ಚಿಕ್ಕ ಮಕ್ಕಳಿಗಾಗಿ ಮಾಟದಾಟಗಳು ಬೀದಿ ಕೇರಿಗಳಲ್ಲಿ

ನಡೆಯುವುದೆ, ಶಕ್ತಿ ಪ್ರದರ್ಶನ ತೋರಿಸಲು ಜಂಗಿ ಕುಸ್ತಿ ಆಡುವುದೇ, ಮನರಂಜನೆಗಾಗಿ ಬೆಂಕಿ ಹಾರುವುದು, ಹಾಗೆ ಹಲಗೆ ವಾದ್ಯದೊಂದಿಗೆ ಕುಣಿಯುವುದು ನಡೆಯುತ್ತಿತ್ತು. ಹೀಗಾಗಿ ಕಲಾವಿದರು ಖುಷಿಯಿಂದ ಜೀವನ ನಡೆಸುತ್ತಿದ್ದರು. ಬಗೆಬಗೆಯ ಕಲೆ ತೋರಿಸಿ ಪ್ರೇಕ್ಷಕರಿಂದ ಶಹಭಾಸಗಿರಿ ಪಡೆದುಕೊಳ್ಳುತ್ತಿದ್ದರು.

ಹಳ್ಳಿಯಿಂದ ಹಳ್ಳಿಗೆ ಅಲೆದು ಕಲೆ ಪ್ರದರ್ಶಿಸಿ, ತಮ್ಮ ಪ್ರತಿಭೆ ಕೀರ್ತಿ ಹೆಚ್ಚಿಸಿಕೊಂಡು ಸತ್ಕಾರ ಸನ್ಮಾನ ಮಾಡಿಸಿಕೊಂಡು, ಬಿರುದಾವಳಿ ಪಡೆದುಕೊಳ್ಳುತ್ತಿದ್ದರು. ಗಣ್ಯವ್ಯಕ್ತಿಗಳು ಪ್ರತಿಭಾವಂತ ಕಲಾವಿದರ ಬಗ್ಗೆ ವಿಶೇಷ ಕಾಳಜಿ ವಹಿಸಿ ಅವರ ಆಸೆ-ಆಮಿಷಗಳನ್ನು ಈಡೇರಿಸಿ ಕಲೆ ಹಸಿರಾಗಿರುವಂತೆ ನೀರೆರೆಯುತ್ತಿದ್ದರು. ಹೀಗಾಗಿ ಜನಪದ ಕಲೆಗಳು ಚಿಗುರಿ ಹೆಮ್ಮರವಾಗಿ, ಬೇರುಬಿಟ್ಟು ಹಾಗೇ ಉಳಿದುಕೊಂಡವು, ಪ್ರಸಾರಗೊಂಡವು ತಲೆಯಿಂದ ತಲೆಮಾರಿಗೆ ಜನಪದದ ಉಸಿರಿನೊಂದಿಗೆ ಬೆರೆತು ಬಂದವು.

ಕಾಲ ಕಳೆದಂತೆ, ನಾಗರಿಕತೆ ಬೆಳೆದಂತೆ, ಪರದೇಶ ಸಂಸ್ಕೃತಿಯ ಪ್ರಭಾವ ಹೆಚ್ಚಿದಂತೆ, ರಾಜಕೀಯ ದಾರಿದ್ರ್ಯತನ ಅಂಟಿಕೊಂಡಂತೆ, ವರ್ತಮಾನ ಪತ್ರಿಕೆಗಳು, ಚಲನಚಿತ್ರ, ದೂರದರ್ಶನ, ರೇಡಿಯೋಗಳು ಜನಪದ ಮನಸ್ಸು ಹೀರಕೊಂಡಂತೆ, ಇವೆಲ್ಲ ಕಲೆ ಮತ್ತು ಕಲಾವಿದರ ಹೊಟ್ಟೆಯ ಮೇಲೆ ಕಾಲು ಇಟ್ಟವು. ಜನರಿಂದ ಪ್ರೋತ್ಸಾಹ ಕಡಿಮೆಯಾಯಿತು. ಕಲೆಗಳಿಂದ ಕಲಾವಿದರು ದೂರವಾದರು. ಕೂಳಿಗಾಗಿ ಮನೆಯಿಂದ ಮನೆಗೆ ಅಲೆಯುತ್ತಿದ್ದರು. ಕಲಾವಿದರೆಲ್ಲ ದಿಕ್ಕು ಪಾಲಾದರು. ನವನಾಗರಿಕತೆಯ ಶಕ್ತಿ ಮತ್ತು ಬಿರುಗಾಳಿಯಿಂದ ಜನಪದ ಕಲೆಯ ಬುಡ ಕುಸಿದು ಬೀಳಲು ಶುರುವಾಯಿತು.

ಹವ್ಯಾಸಿ ಕಲಾಕಾರರು ಹೊಟ್ಟೆಪಾಡಿಗಾಗಿ ವೃತ್ತಿ ಕಲಾವಿದರಾದರು. ಜನರಿಂದ ಸಹಕಾರ ಸಿಗಲಿಲ್ಲ. ನೊಂದು ಬೆಂದು ಕಲೆಗಳ ಪ್ರದರ್ಶನಕ್ಕೆ ಗುಡ್ ಬೈ ಹೇಳಿ ಪಟ್ಟಣ ಸೇರುತ್ತಿದ್ದರು. ಇದರಿಂದ ಕಲೆಗಳ ಉಳಿವು ಕಡಿಮೆಯಾಯಿತು. ಈಗ ಹಳ್ಳಿಗೆ ಹೋದರೆ ಅಯ್ಯೋ ಅನಿಸುತ್ತದೆ. ಕಲಾವಿದರು ಪಟ್ಟಣ ಸೇರುತ್ತಿದ್ದಾರೆ. ಕಲೆ ಮಸಣ ಸೇರುತ್ತಿದೆ. ಹಳ್ಳಿಗಳು ದಿಲ್ಲಿಗಳಾಗುತ್ತಿವೆ. ಒಟ್ಟಿನಲ್ಲಿ ಜನಪದ ಸಾಹಿತ್ಯ ಮತ್ತು ಕಲೆಗಳು ವಿದ್ಯಾರ್ಥಿ ವೇತನ ಕೊಡುವುದು. ಯುವ ಕಲಾವಿದರ ಕುಂದುಕೊರತೆ ತಿಳಿದುಕೊಳ್ಳಲು ಆಯಾ ಹಳ್ಳಿಯಲ್ಲಿ ಮೂರು ತಿಂಗಳಿಗೊಮ್ಮೆಯಾದರೂ ಸಮಾವೇಶ ನಡೆಸುವುದು. ಹೀಗೆ ಮಾಡುವುದರಿಂದ ಯುವ ಜನಾಂಗದಲ್ಲಿ ಜನಪದ ಕಲೆಗಳ ಬಗ್ಗೆ ವಿಶೇಷ ಆಸಕ್ತಿ ಹುಟ್ಟಿ ಅವುಗಳನ್ನು ನಶಿಸಿ ಹೋಗದಂತೆ ಕಾಪಾಡಿಕೊಂಡು ಬರುತ್ತಾರೆ. ಪ್ರಚಾರ ಮಾಡುತ್ತಾರೆ. ಕಾರ್ಯಕ್ರಮ ನೀಡುತ್ತಾರೆ. ಇದರಿಂದಾಗಿ ಜನಪದ ಕಲೆಗಳ ಪ್ರಸಾರಕ್ಕೆ ಒಂದು ಚಾಲನೆಯನ್ನು ಕೊಟ್ಟಂತಾಗುತ್ತದೆ.

ಹತ್ತಾರು ವರ್ಷಗಳಿಂದ ಜನಪದರು ಜನಪದ ಕಲೆಗಳ ತಮ್ಮ ಜೀವನದ ಅಂಗವೆಂದು ತಿಳಿದುಕೊಂಡು ಬಂದಿದ್ದಾರೆ, ಬರುತ್ತಿದ್ದಾರೆ. ಸಾಹಿತ್ಯ ವೈದ್ಯಪದ್ಧತಿ, ಕ್ರೀಡೆಗಳು, ವೇಷಭೂಷಣಗಳ ತಯಾರಿ ಮಾಡುವುದರಲ್ಲಿ, ಕರಕುಶಲ ಕಲೆಗಳು ಸಿದ್ಧಪಡಿಸುವಲ್ಲಿ ವಿಶೇಷ ಕಾಳಜಿವಹಿಸಿದ್ದಾರೆ. ಎಷ್ಟೋ ಜನಪದ ಹಾಡುಗಳು, ಗಾದೆ ಒಗಟು-ಒಡಪು-ಕಥೆಗಳು ಮುದುಕ-ಮುದುಕಿಯರ ಬಾಯಲ್ಲಿ ಹಾಗೇ ಉಳಿದಿವೆ. ಕೇಳುಗರು ಯಾರು ಇಲ್ಲದ್ದರಿಂದ ಅವರಿಂದ ಜನಪದ ಸಾಹಿತ್ಯ ನಶಿಸಿ ಹೋಗುತ್ತಿದೆ. ಇಂಥ ಸಾಹಿತ್ಯ ಕಲೆಗಳ ಸಂರಕ್ಷಣೆ ಮಾಡಲು ಅಕಾಡೆಮಿಗಳ ಪಾತ್ರ ಪ್ರಮುಖವಾಗಿದೆ. ಯಾವುದೇ ವಿಶ್ವವಿದ್ಯಾಲಯವಿರಲಿ ಅಲ್ಲಿ ಜಾನಪದ ವಿಭಾಗ ಕಡ್ಡಾಯವಾಗಿದ್ದು, ಎಂ.ಎ. ಮತ್ತು ಎಂ.ಫಿಲ್ ಹಾಗೂ ಪಿಎಚ್.ಡಿ. ಪದವಿ ನೀಡಿ ಈ ಕ್ಷೇತ್ರದತ್ತ ಸಂಶೋಧನೆಯಲ್ಲಿ ತೊಡಗಿಸಲು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಹುರಿದುಂಬಿಸಬೇಕಾಗಿದೆ. ಇದರಿಂದ ಅನೇಕ ವಿದ್ಯಾರ್ಥಿಗಳು ಪದವಿ ಪಡೆಯಬಹುದು. ಜನಪದ ಸಾಹಿತ್ಯ ಉಳಿಸಿಕೊಳ್ಳಬಹುದು.

ಪ್ರತಿಯೊಂದು ಜಿಲ್ಲೆಯಲ್ಲಿ ಜಾನಪದ ವಸ್ತು ಸಂಗ್ರಹಾಲಯ ಸ್ಥಾಪಿಸಬೇಕು. ಜನಪದರ ಜೀವನಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ವಸ್ತುಗಳನ್ನು ಕಲೆ ಹಾಕಬೇಕು. ಇದರಿಂದ ಹಳೆಯ ಸಂಸ್ಕೃತಿ ಉಳಿಸಲು ಮತ್ತು ಬೆಳೆಸಲು ತಿಳಿದುಕೊಳ್ಳಲು ಸಹಾಯವಾಗುತ್ತದೆ. ಇದಕ್ಕೆ ಆಯಾ ಜಿಲ್ಲೆಯ ಜಿಲ್ಲಾಧಿಕಾರಿಗಳು ವಿಶೇಷ ಗಮನ ವಹಿಸಿ ಸಹಕಾರ ನೀಡಬೇಕು. ಯಾವ ಗ್ರಂಥ ಪ್ರಕಾಶವನವೇ ಆಗಿರಲಿ ಜನಪದ ಕುರಿತ ಯಾವುದೇ ಪುಸ್ತಕ ಪ್ರಕಟ

ಮಾಡುವುದಿರಲಿ, ಅಂಥವುಗಳನ್ನು ರಿಯಾಯಿತಿ ದರದಲ್ಲಿ ಮುದ್ರಣ ಮಾಡಲು ಮುಂದೆ ಬರಬೇಕು. ಇದರಿಂದ ಜನಪದ ಸಾಹಿತ್ಯ ಬದುಕಿಕೊಳ್ಳಲು ಸಾಧ್ಯವಾಗುತ್ತದೆ. ಇಂಥ ಗ್ರಂಥಗಳನ್ನು ತಕ್ಷಣ ಖರೀದಿ ಮಾಡುವ ವ್ಯವಸ್ಥೆ ಸರ್ಕಾರ ವಹಿಸಿಕೊಂಡಾಗ ಹೆಚ್ಚು ಹೆಚ್ಚು ಪುಸ್ತಕಗಳು ಪ್ರಕಟಿಸಲು ಸಾಧ್ಯವಾದಿತು.

ಕನ್ನಡ ಪರ ಯಾವುದೇ ಸಂಘ-ಸಂಸ್ಥೆ ಇರಲಿ, ಜನಪದ ಕಲೆಗಳತ್ತ ವಿಶೇಷ ಕಾಳಜಿ ತೋರಿಸಿ ಕಲಾವಿದರಿಗೆ ಪ್ರೋತ್ಸಾಹಿಸುವ ಕಾರ್ಯ ಮಾಡಬೇಕು ಹಳ್ಳಿಮಟ್ಟದಿಂದ ಹಿಡಿದು ರಾಷ್ಟ್ರಮಟ್ಟದವರೆಗೆ ಜನಪದ ಸಮ್ಮೇಳನ ನಡೆಸುತ್ತಿರಬೇಕು. ಜಾನಪದ ವಿದ್ವಾಂಸರನ್ನು ಕರೆಸಿ ಅವರಿಂದ ಉಪನ್ಯಾಸ, ಚರ್ಚೆ ಮಾಡಿಸಬೇಕು. ಕರ್ನಾಟಕ ಜಾನದಪ ವಿಶ್ವವಿದ್ಯಾಲಯವು ವ್ಯವಸ್ಥಿತ ರೀತಿಯಲ್ಲಿ ಮತ್ತು ವ್ಯಾಪಕವಾಗಿ ಕಾರ್ಯ ಯೋಜನೆಗಳನ್ನು ರೂಪಿಸಬೇಕು. ಹೀಗೆಲ್ಲ ಮಾಡಲು ಕೇಂದ್ರ ಸರ್ಕಾರ ಮತ್ತು ರಾಜ್ಯ ಸರ್ಕಾರದ ಸಹಾಯ-ಸಹಕಾರ ಅಗತ್ಯವಾಗಿದೆ. ಆ ನಿಟ್ಟಿನಲ್ಲಿ ಕರ್ನಾಟಕ ಜಾನಪದ ಅಕಾಡೆಮಿ ವ್ಯಾಪಕವಾಗಿ ಕಾರ್ಯಕ್ರಮ ಹಾಕಿಕೊಂಡು, ಜನಪದ ಸಾಹಿತ್ಯ ಸಂಸ್ಕೃತಿ ಕಲೆಗಳ ಸಂವರ್ಧನೆ ಮತ್ತು ಸಂರಕ್ಷಣೆಯತ್ತ ವಿಶೇಷ ಕಾಳಜಿ ವಹಿಸಬೇಕು. 1977ರಲ್ಲಿ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪರಿಷತ್ತು, ಕರ್ನಾಟಕ ಜನಪದ ಕಲೆಗಳು ಕುರಿತ ಪುಸ್ತಕ ಹೊರತಂದು ದೊಡ್ಡ ಉಪಕಾರವೇ ಮಾಡಿದೆ. ಮಾಯವಾಗಿ ಹೋಗುತ್ತಿರುವ ಪ್ರಮುಖ ಕಲೆಗಳ ಪರಿಚಯ ಮಾಡಿಕೊಟ್ಟಿದೆ. ಇನ್ನು ಮುಂದೆಯೂ ಇಂಥ ಗ್ರಂಥ ಪ್ರಕಟಣೆ ಮತ್ತು ಕಲಾ ಸಮ್ಮೇಳನದ ಕಡೆಗೆ ವಿಶೇಷ ಲಕ್ಷ್ಯವಹಿಸಬೇಕು. ಕರ್ನಾಟಕ ಜಾನಪದ ಪರಿಷತ್ತು ವ್ಯಾಪಕವಾಗಿ ಯೋಜನೆಗಳನ್ನು ರೂಪಿಸಿಕೊಂಡು ಜಾನಪದ ಲೋಕ ಬೆಳೆಸುತ್ತಾ ಉಪಯುಕ್ತ ಕೆಲಸ ಮಾಡುತ್ತಿದೆ. ಕನ್ನಡಿಗರು ಹೆಚ್ಚಿನ ಸಂಖ್ಯೆಯಲ್ಲಿ ಜಾನಪದ ಜಗತ್ತು ಪತ್ರಿಕೆಯ ಚಂದಾದಾರರಾಗಿ ಅದು ಮಾಡುತ್ತಿರುವ ಅಗಾಧವಾದ ಕೆಲಸಗಳ ಪರಿಚಯ ಮಾಡಿಕೊಳ್ಳುವುದು ಒಳ್ಳೆಯದು. ಸ್ನಾತಕೋತ್ತರ ಜಾನದಪ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ವಿಶೇಷವಾದ ಸಹಾಯ ಸೌಲಭ್ಯ ನೀಡಬೇಕು. ಪ್ರತಿಯೊಂದು ಶಾಲೆ-ಕಾಲೇಜುಗಳಲ್ಲಿ ಜಾನಪದ ಬೋಧನೆ ಮಾಡುವ ಶಿಕ್ಷಕ ಅಧ್ಯಾಪಕರನ್ನು ನೇಮಿಸುವಂತೆ ಸರ್ಕಾರಕ್ಕೆ ಒತ್ತಾಯಿಸಬೇಕು. ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ ಸಾಹಿತ್ಯ ಕಲೆಗಳತ್ತ ಗಮನಕೊಟ್ಟು ಹಳ್ಳಿ-ನಗರಗಳಲ್ಲಿ ಕಾರ್ಯಾಗಾರ, ಕಮ್ಮಟ ನಡೆಸಿ ಗ್ರಂಥಗಳ ರಾಶಿ ಹಾಕಿ ಕಡಿಮೆ ಬೆಲೆಯಲ್ಲಿ ಮಾರಾಟ ಮಾಡಬೇಕು.

ಇಂಥ ಹತ್ತಾರು ಕಾರ್ಯ-ಕಲಾಪಗಳು ಮಾಡಲು ಸಂಘ-ಸಂಸ್ಥೆ, ಸರ್ಕಾರಿ ಇಲಾಖೆಗಳು, ಅಕಾಡೆಮಿಗಳು, ವಿಶ್ವವಿದ್ಯಾಲಯಗಳು, ವಿದ್ವಾಂಸರು, ಬರಹಗಾರರು ಮತ್ತು ಜನರು ಸಹಕರಿಸಬೇಕು. ಅಳಿಸಿ ಹೋಗುತ್ತಿರುವ ಜನಪದ ಸಾಹಿತ್ಯ ಮತ್ತು ಕಲೆಗಳನ್ನು ಮರಿಮಕ್ಕಳಂತೆ ಸಲಹಬೇಕು. ಇದರಿಂದ ನಮ್ಮ ಜನಾಂಗ, ಸಾಹಿತ್ಯ ಸಂಸ್ಕೃತಿ ಉಳಿಯಬಲ್ಲದು. ಬೆಳೆಯಬಲ್ಲದು, ನಂದಾದೀಪವಾಗಿ ಬೆಳಗಬಲ್ಲದು.

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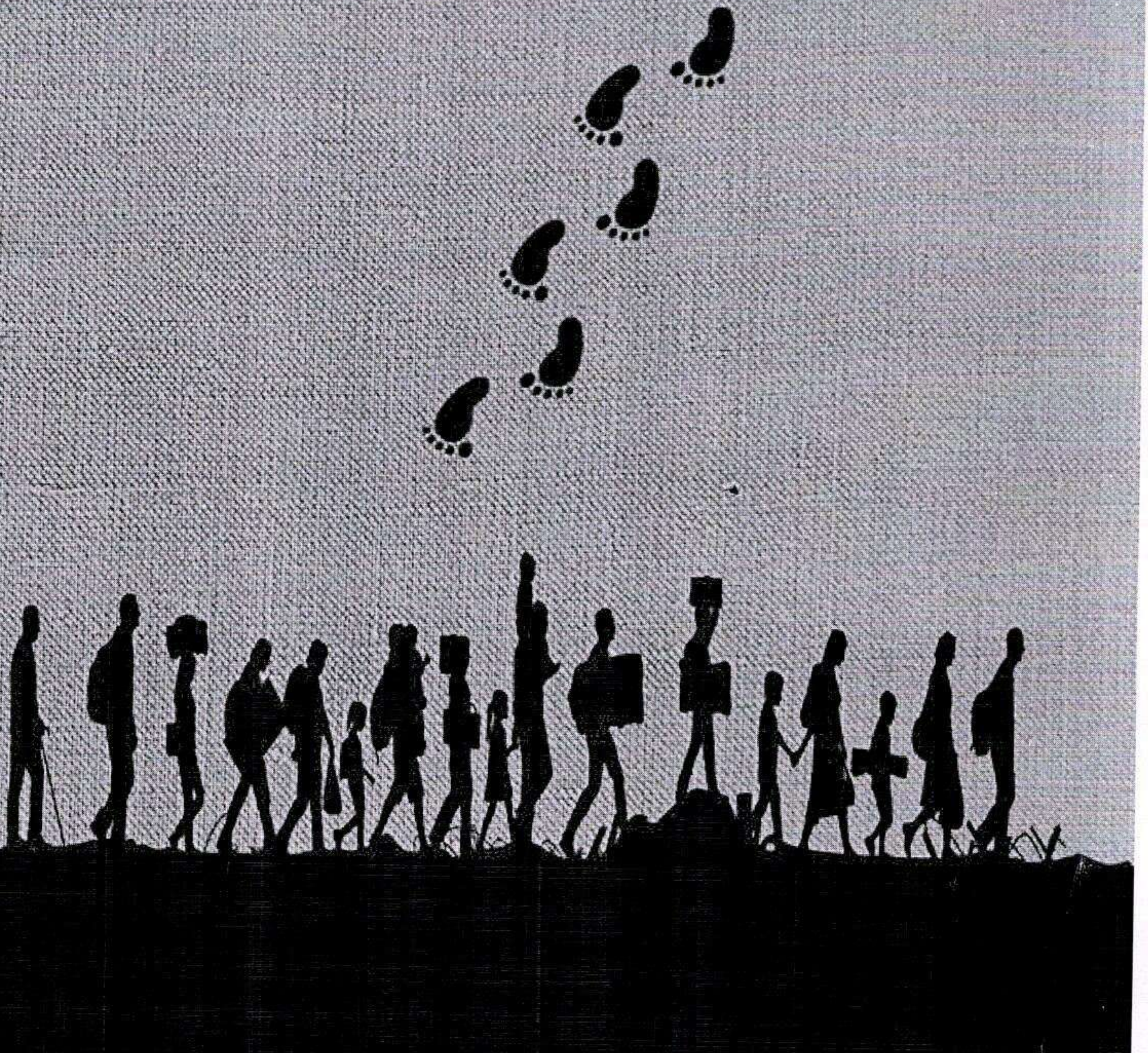

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जनकृति

परामर्श मंडल

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डॉ. हरीश नवल (दिल्ली), डॉ. हरीश अरोड़ा (दिल्ली), डॉ. प्रेम जन्मेजय (दिल्ली),
डॉ. कैलाश कुमार मिश्रा (दिल्ली), प्रो. शैलेन्द्र कुमार शर्मा (उज्जैन), प्रो. कपिल कुमार (दिल्ली), प्रो. जितेंद्र श्रीवास्तव (दिल्ली), प्रो. रत्नेश विश्वक्सेन (झारखंड)

संपादक

डॉ. कुमार गौरव मिश्रा
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सहायक संपादक

डॉ. पुनीत बिसारिया
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संपादन मण्डल/विशेषज्ञ समिति

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डॉ. प्रज्ञा (प्रोफ़ेसर, किरोड़ीमल कॉलेज, दिल्ली विश्वविद्यालय)
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डॉ. रूपा सिंह (एसोसिएट प्रोफ़ेसर, बाबु शोभा राम गोवेरमेंट आर्ट कॉलेज, राजस्थान)
डॉ. पल्लवी (सहायक प्रोफ़ेसर, तेजपूर विश्वविद्यालय, असम)
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संपादन सहयोग

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संस्थापक सदस्य

कविता सिंह चौहान (मुंबई)
डॉ. जैनेन्द्र कुमार (बिहार)

अंतरराष्ट्रीय सदस्य

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शोध सारांश

आधुनिक दलित कवि दामोदर मोरे की कविताओं में यथार्थ बोध और युग विमर्श ये दोनों चीजें दिखाई देती हैं। इन्होंने अपनी कविताओं के माध्यम से समाज के अलग-अलग विषयों और ज्वलंत मुद्दों पर प्रकाश डालकर एक जागरूक, संवेदनशील तथा क्रांतिकारी विचारधारा का परिचय दिया है। समय और समाज की मांग है कि रूढ़िवादिता और पारंपरिक बंधनों से मुक्त होकर खुले विचारों का विस्तार करें। जिसमें सभी के लिए स्वतंत्राता, समानता और संविधानिक अधिकारों की रक्षा हो। जाति विहीन और वर्ग विहीन समाज का निर्माण हो। इस दिशा में हिंदी कविताएँ अपना सफ़र तय कर रही हैं। अत: 21 वीं सदी परिवर्तन की सदी है।

बीज शब्द : *दामोदर मोरे, आधुनिक हिंदी कविता, युग विमर्श, भारतीय समाज, वर्ण व्यवस्था और जातिवाद।*

शोध आलेख:

21 वीं सदी विज्ञान और तकनीकी की सदी है। इस दिशा में प्रत्येक देश आगे बढ़ने का प्रयास कर रहा है। मानवता की रक्षा के सन्दर्भ में वैश्विक पटल पर मानवाधिकार की बातें भी की जाने लगी हैं। इस चकाचौंध भरे युग में एक ऐसा भी समाज है जोकि अपने सामाजिक, आर्थिक एवं राजनीतिक अधिकारों और आत्मसम्मान के लिए संघर्ष कर रहा है। सदियों से चली आ रही रूढ़िवादी व वर्चस्ववादी मानसिकता ने इस मशीनी युग को भी अपनी चपेट में लेकर समाज को बांधे रखा है। जिसके चलते स्वतन्त्रता, समानता, अस्मिता व मानवाधिकारों का सतत हनन होता हुआ दिखाई दे रहा है। लेकिन मानवता, संविधानिक अधिकारों को बचाने और समाज को बेहतर बनाने व जागरूक करने के प्रयासों में सामाजिक क्रान्ति, बुद्धिजीवियों, लेखकों, वैज्ञानिक सोच आदि का महत्वपूर्ण योगदान रहा है। इस दिशा में आधुनिक दलित कवि दामोदर मोरे की कविताओं की बात की जाए तो उनमें समाज के प्रति कवि की प्रतिबद्धता और चिंतन दिखाई देता है। दरअसल इनकी कविताओं में यथार्थ बोध और युग विमर्श ये दोनों चीजें दिखाई देती हैं। अत: दामोदर मोरे ने समाज के अलग-अलग विषयों और ज्वलंत मुद्दों पर प्रकाश डालकर एक जागरूक, संवेदनशील तथा क्रांतिकारी विचारधारा का परिचय दिया है। भारत के सन्दर्भ में अकाल का एक लंबा इतिहास रहा है। जिसके परिणाम स्वरूप समाज खास तौर से आम जनता का जीवन प्रभावित हुआ है। भूख, लाचारी और बीमारी की चपेट में आकर मौत को गले लगाया है। इस मार्मिक स्थिति का चित्रण कवि मोरे ने अपनी 'अकाल की यादें' कविता में लिखते हैं-

> "कितने आदमी निगले हैं
> अकाल के मगरमच्छ ने

भूख...भूख कर के कितने गए हैं प्राण
अकाल से लड़ते हुए
मरे जानवरों की हड्डियां बेचकर
भरते पेट, बुझाने पेट की आग
हड्डियों की खोज में स्वयं हड्डी बन गए।"[1]

अकाल की विभीषिका का चित्रण करने के साथ-साथ कवि दामोदर मोरे ने भारतीय राजनीतिक व्यवस्था के यथार्थ को भी उजागर किया है। वर्तमान युग का यथार्थ यह है कि सत्ताधारी संविधान को बदलने के प्रयास के साथ-साथ संवैधानिक संस्थानों और स्वतंत्र संस्थानों पर अपना कब्जा जमा लिया है। इसके अनेकों उदाहरण देख सकते हैं। आज राजनीतिक पार्टियां 'पूंजीपतियों' की गुलामी और 'संघ' के नियम पर चल रही हैं। इन पर पैनी नज़र रखने वाला विपक्ष और मुख्यधारा का मीडिया भी चुप है। मुझे यह बात कहने में कोई संकोच नहीं है कि आज तथाकथित बुद्धिजीवी, क्रांतिकारी और लेखक, सत्ता की चापलूसी में लगे हुए हैं। लेकिन इनके अलावा समाज में कुछ लोग ऐसे भी हैं जो संविधान और संवैधानिक संस्थानों की रक्षा करने के लिए हमेशा तत्पर रहते हैं। उनमें अधिकतर वामपंथी, अंबेडकरवादी क्रांतिकारी छात्र, युवा नेता, लेखक, मीडियाकर्मी आदि शामिल हैं। हां... यह बात अलग है कि कभी इन पर 'सेडिशन' का चार्ज लगाया जाता है तो कभी इनकी आवाज को बंद करने के लिए तरह-तरह के हथकंडे अपनाए जाते हैं। जब कोई लेखक अपनी लेखनी के माध्यम से सत्ताधारियों, सरकारों और उनकी नीतियों की आलोचना करता है तो उसे मौत के घाट उतार दिया जाता है। 'गोविन्द पानसारे', 'नरेन्द्र दाभोलकर', 'एम.एम. कलबुर्गी', 'गौरी लंकेश' आदि की हत्याएं इसका उदाहरण हैं तथा 'कांचा इलैया' पर जानलेवा हमला एवं दिल्ली विश्वविद्यालय द्वारा एम.ए. पाठ्यक्रम से 'व्हाई आईएम नॉट अ हिन्दू', गॉड एज़ पॉलिटिकल फिलोसफेर' और 'पोस्ट-हिन्दू इंडिया' पुस्तकों को हटाना आदि। ऐसी तानाशाही सामाजिक व्यवस्था को बदलने के लिए कवि दामोदर मोरे व्याकुल हैं। वे अपनी कविता 'नंगा नाच' में अपनी चिंता व आक्रोश को इस तरह से अभिव्यक्त करते हैं-

"मैं देख नहीं सकता
सत्य को
सत्ता का गुलाम बनते हुए
मैं देख नहीं सकता
संवैधानिक व्यवस्था को
नंगा नचाते हुए।"[2]

भारतीय समाज में जातिवादी मानसिकता तथा असमानता के तत्व विद्यमान हैं। इसके चलते समाज का तानाबाना बिगड़ा हुआ है। जिससे समाज स्वतंत्रता, समानता, बंधुता आदि से पिछड़ा हुआ है। इसके पिछड़ेपन का कारण

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[1] दामोदर मोरे, पलकें सुलग रही हैं, अनुपम प्रकाशन, गाज़ियाबाद, प्रथम संस्करण 2002, पृ. 25
[2] दामोदर मोरे, नीले शब्दों की छाया में, सौरभ प्रकाशन, दिल्ली, संस्करण 2007, पृ. 33

हैं-'वर्ण व्यवस्था'। जिसके सन्दर्भ में डॉ. अंबेडकर ने कहा था- "वर्ण व्यवस्था में आधुनिक भारतीय समाज के लिए कोई नवीन संदेश नहीं है। वह निरर्थक और हानिकारक सिद्ध हो चुकी है। अच्छे सामाजिक संबंधों की जड़ें इसमें नहीं है। इस वर्ण व्यवस्था ने चार वर्णों के लोगों के बीच एक स्तरीय, उतार-चढ़ाव की और समानता प्रतिष्ठित कर रखी है, जिसके अनुसार ब्राह्मण सबसे उच्च है उससे नीचे क्रमशः क्षेत्रीय, वैश्य तथा निम्नतर स्तर पर शूद्र हैं। इसके अंतर्गत अगर ऊपर की ओर जाओ तो सम्मान और आदर है और नीचे की ओर देखो तो घृणा और अनादर है।"[1] वर्तमान समय में वंचित बहुजन समाज अंबेडकरवादी विचारों से प्रभावित होकर जागरूकता की ओर बढ़ने में अग्रसर है। सदियों से खोए हुए अपने आत्म सम्मान को प्राप्त करने के लिए जागरुक हो चुका है। इसी अस्तित्व के संघर्ष को कवि दामोदर मोरे अपनी कविता 'मैं' में यूं बयाँ करते हैं-

"मैं,
कचरे के पुंज अंकुरित हुआ...
अपने आप से ही पल्लवित हुआ
किसी चेतनाशील हरे-भरे पौधे की तरह
स्वयं का एक स्वतंत्र विश्व बनकर
अपने आप को आकार देते हुए
शब्दों में साकार होते हुए।"[2]

इस वर्ण व्यवस्था में अंबेडकरवादी विचार और अंबेडकरवादी साहित्य हाशिए के समाज को मुख्यधारा में लाने के लिए हमेशा से प्रयासरत है। दबे-कुचले समुदाय की आवाज बन चुका है। यह कहना गलत नहीं होगा कि डॉ. बाबा साहेब अंबेडकर का संघर्ष और उनके आंदोलन का नतीजा ही है कि आज दबे,कुचले, शोषित, दमित, वंचित, बहुजन समाज जागरूक हो रहा है और अपने अस्तित्व की लड़ाई लड़ रहा है। इस संदर्भ में कवि दामोदर मोरे की 'मैं' कविता की पंक्तियां प्रासंगिक हैं। वे लिखते हैं-

"मेरी मुझसे हुई जब पहचान तब से
खड़ा हूं नई उम्मीद लेकर,
मेरी अस्मिता है झोपड़ी के पास
हाथ में कलम लेकर।"[3]

वंचित, शोषित तथा बहुजन समाज के जागरूकता के पीछे अंबेडकरवादी आंदोलन का महत्वपूर्ण योगदान रहा है। जैसे-महाड़ सत्याग्रह। डॉ. बाबा साहेब अंबेडकर के नेतृत्व में 20 मार्च 1927 को महाराष्ट्र राज्य के रायगढ़ जिले के महाड़ स्थान पर हुआ था। हजारों की संख्या में अछूत कहे जाने वाले लोगों ने इनके नेतृत्व में सार्वजनिक तालाब चावदार

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[1] डॉ. डी.आर.जाटव, गांधी, लोहिया और अंबेडकर, समता साहित्य सदन, जयपुर, प्रथम संस्करण 2015, पृ. 21

[2] दामोदर मोरे, पलकें सुलग रही हैं, अनुपम प्रकाशन, गाजियाबाद, प्रथम संस्करण 2002, पृ. 12

[3] वही

में पानी पीया था। सबसे पहले डॉ. अंबेडकर ने अंजुली से पानी पी कर इसका आगाज़ किया था। उनका अनुकरण करते हुए हजारों अछूत कहे जाने वाले लोगों ने पानी पीया। "अगस्त 1923 को बॉम्बे लेजिस्लेटिव काउंसिल (अंग्रेजों के नेतृत्व वाली समिति) के द्वारा एक प्रस्ताव लाया गया, कि वो सभी ऐसी जगहें, जिनका निर्माण और देख-रेख सरकार करती है, का इस्तेमाल हर कोई कर सकता है। इसी कानून को बाबा साहेब ने लागू कराया।"[1] डॉ. बाबा साहेब अम्बेडकर के इस साहसिक कदम व क्रांतिकारी आन्दोलन के द्वारा तत्कालीन समाज में चेतना की ज्वाला उठने लगी तथा अछूत समझा जाने वाला समाज अपना स्वाभिमानी जीवन जीने लगा। इस सन्दर्भ में कवि दामोदर मोरे अपनी कविता 'सूरज' में कहते हैं-

"जब पिया मैंने
चावदार तालाब का पानी नीला
धधक उठी मेरे रोम-रोम में
स्वाभिमान की ज्वाला।"[2]

कवि दामोदर मोरे वर्तमान समय में कविता के बदलते हुए पहलु को उजागर किया है। वास्तव में इनकी कविता मनोरंजन या नख-शिख का वर्णन नहीं करती, बल्कि उन सारे बंधनों और मिथकों को चुनौती देती है। और जो सदियों से धर्म, परम्परा और संस्कृति के नाम पर थोपे गए प्रतिमानों का खंडन भी करती है। आज की कविता की मांग है- जनता की आवाज़ बनना। इस दिशा में ये कविताएँ खरी उतारी हैं। इसका एक उदाहरण हैं-'जलता रहूंगा' कविता।

"जलता आया आज तक
आगे भी जलता रहूंगा
झुग्गियों के अंधेरे को जलाते जलाते
उजाला मैं बनाता रहूँगा
देती है जो जीवन मूल्य
उसी के ऋण का अनुबंध
यह कविता अब तोड़ रही है
समय के सनातन बंध।"[3]

समाज में वर्ण व्यवस्था द्वारा किए जाने वाले अन्याय और शोषण से कवि मोरे अच्छी तरह से परिचित है। दरअसल कवि दामोदर मोरे ने अपने जीवन में इस सामाजिक व्यवस्था के अभिशाप को सहा है। इसीलिए इनकी कविताओं में स्वानुभूति, संघर्ष, अनुभव तथा आक्रोश दिखाई देता है। कवि अपने समाज को जागृत कर उनमें क्रांति की

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[1] https://hindiltheprintlin/opinion/ambedkar-mahad-march-vs-gandhi-dandi-march/56363/
[2] दामोदर मोरे, पलकें सुलग रही हैं, अनुपम प्रकाशन, गाज़ियाबाद, प्रथम संस्करण 2002, पृ. 17
[3] वही, पृ. 14

चिंगारी को पैदा करने का दृढ़ संकल्प करता है। सदियों से चली आ रही रूढ़िवादी परंपरा से बाहर निकल कर स्वाभिमानी जीवन जीने के लिए के अपने समाज से आह्वान भी करता है। 'शब्दो!' कविता इसका प्रमाण है।

"संस्कृत के पुराने पेड़ पर
क्यों उलटा लटका लिया है तुमने स्वयं को
चमगादड़ की तरह क्यों बांध लिया अपने को
परंपरा की बड़ी रस्सी से बैल की तरह।
शब्दो !
तुम उठो गरुड़ की तरह नभांगन में सूर्योमुख
तुम निकालो अपना मोर्चा
क्रांतिकारी।। परिवर्तन उन्मुख अर्थ के आभा के साथ
इन अंधियारी बस्तियों में।"[1]

इसी दिशा में वंचित समाज को जगाने के लिए कवि ललकारते हैं। दरअसल व्यवस्था या मानसिकता ऐसी बनी हुई है कि जो कमजोर है उसी को ही दबाने का प्रयास किया जाता है। 'समय' कविता इस व्यवस्था का विरोध करती है।

"जो डरते हैं उन्हीं को डराया जाता है
जो घबराते हैं उन्हीं को सताया जाता है
और हां
बार-बार मरने की आदत बहुत बुरी है
मौत से पहले कभी मत मरना"[2]

इस रूढ़ीवादी व्यवस्था के प्रति कवि दामोदर मोरे का आक्रोश जायज है। वह अपने समाज की आने वाली पीढ़ी को जातिवाद के अंधकार से दूर रखना चाहता है। और इस जातिवादी व्यवस्था को मिटाना चाहता है। दरअसल इस व्यवस्था ने समाज को अन्दर से खोखला किया है। इक्कीसवीं सदी का समाज में मानव चन्द्र और मंगल ग्रह पर तो जा रहा है। लेकिन मानसिकता में कोई परिवर्तन नहीं आया। समाज में दलित समाज का कोई व्यक्ति अपने विवाह के सन्दर्भ में घोड़ी तक नहीं चढ़ सकता और न ही अपनी बारात निकाल सकता। ऐसी कुंठित मानसिकता के परिचय के सन्दर्भ में उत्तर भारत की कई घटनाएं इसका उदाहरण हैं। ऐसी व्यवस्था के प्रति कवि अपने आक्रोश को अपनी 'दुखी न रहे अगला वंश' कविता में अभिव्यक्त करता है-

"नाग-वंश का
नाग मैं

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[1] वही, पृ. 11

[2] दामोदर मोरे, नीले शब्दों की छाया में, सौरभ प्रकाशन, दिल्ली, संस्करण 2007, पृ. 14

दुःख-ताप से झुलसा हुआ मैं
नस-नस में दौड़ रहा
रक्त, शिरा और धमनियों में उबल रहा
अनंत काल से रीढ़ की हड्डी को
कर रहा खोकला सनातन धर्मों का मनु
उसे ही मैं काटूंगा
ताकि
दुखी न रहे
हमारा अगला वंश।"[1]

कवि के आक्रामक होने के पीछे सदियों का संताप तथा भेदभाव की नीति है। आज की कविता में एक ओर खुले रूप से चिढ़, विद्रोह तथा विरोध दिखाई देता है तो दूसरी ओर महात्मा बुद्ध के शान्ति व अहिंसा के सिद्धांत भी। कवि के क्रोधित होने तथा शांत रहने के प्रयास को 'बोधिवृक्ष' कविता में देख सकते है। कवि कहता है-

"अब मैंने निकाला है अपना पुराना छुरा
जो मैं इस्तेमाल करता था
मरे हुए जानवारों को फाड़ने के लिए
वही, अब मैं तेज़ करते बैठा हूँ
मन पर पत्थर रखकर
लेकिन ऐसे निर्णायक क्षण में ही
क्यों नहीं-नहीं कहता है
यह बोधिवृक्ष"[2]

निष्कर्षत: कहना चाहूंगा कि समाज में लोगों की मानसिकता और परम्परावादी विचारधारा बदल सकती है। लेकिन शर्त यह है कि बदलने की चाहत होनी चाहिए। कवि दामोदर मोरे की कविताएं समाज के ज्वलंत विषयों पर प्रकाश डालने के साथ-साथ वंचितों और हाशिए के समाज को जागृत करने का प्रयत्न भी करती हैं। एक बेहतर समाज की दिशा तय करती हैं। अत: समकालीन युग का विमर्श इन कविताओं में हुआ है।

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[2] वही, पृ. 48

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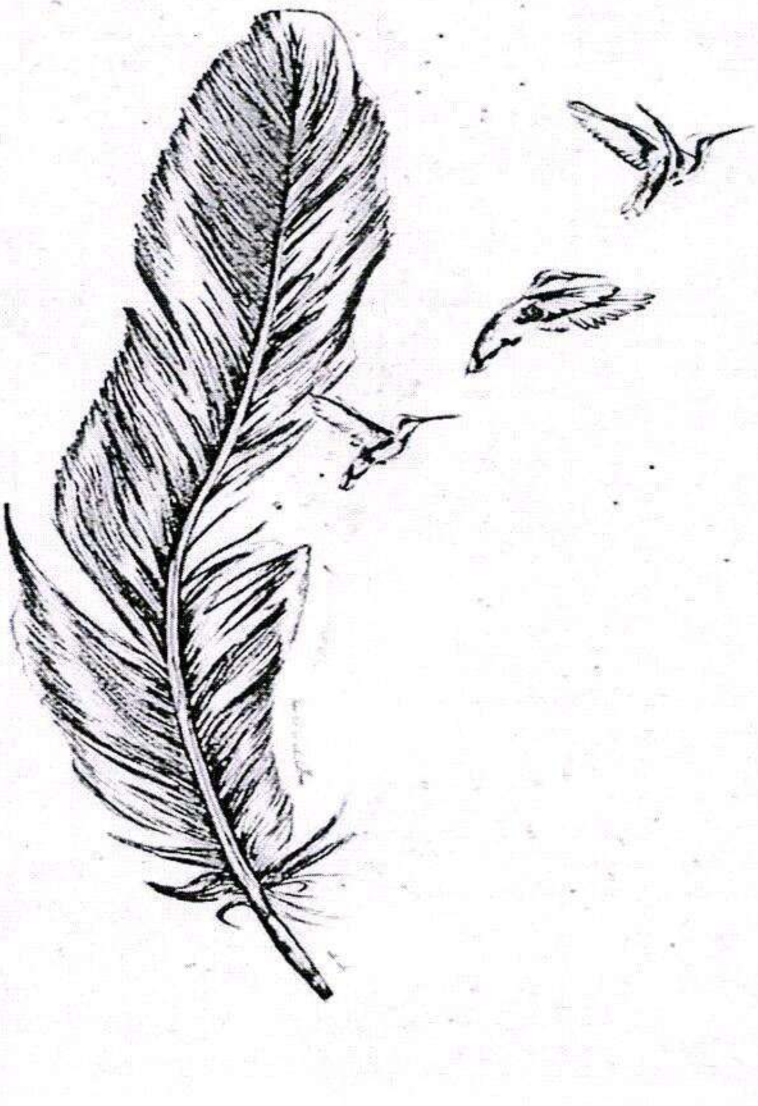
12. वही, पृ. 48



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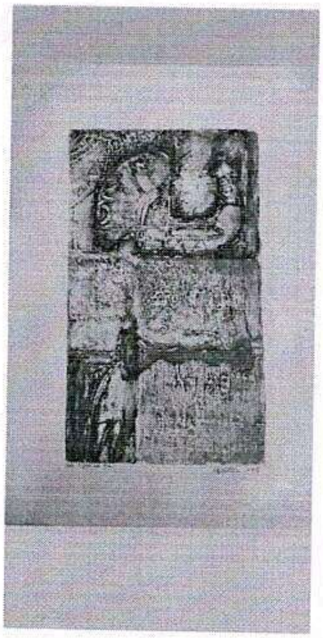
- डॉ. शिराजोद्दीन



शोध सार : लोकतंत्र में मीडिया की मुख्य भूमिका रही है। इसीलिए मीडिया को लोकतंत्र का चौथा खंभा भी माना जाता है। इस चौथे खंभे का मुख्य कर्त्तव्य है विधायिका, कार्यपालिका तथा न्यायपालिका पर पैनी निगाह रखना। मीडिया का एक और मुख्य कर्त्तव्य यह भी है कि जनता की आवाज़ सत्ता तक पहुंचाने के साथ-साथ सरकार की निष्पक्षता से आलोचना करना तथा उनकी कमियों को दिखाना । दरअसल मीडिया हमेशा विपक्ष की भूमिका निभाता है। लेकिन इस बात को कहने में अतिशयोक्ति नहीं होगी कि सत्ता चाहे जिसकी भी रही हो, उसने हमेशा मीडिया पर वर्चस्व कायम करने का प्रयास किया है। समकालीन समय में भी हिंदी मीडिया अपने सिद्धांतों से समझौता कर चुका है। दरअसल मीडिया पर पूंजीवादी व्यवस्था, कॉर्पोरेट तथा सत्ता का दबाव है। इसलिए अब यह जनता की आवाज़ नहीं बल्कि सत्ता की आवाज़ बना बैठा है। वर्तमान समय में मीडिया चैनल्स के डिबेट से मुख्य और महत्वपूर्ण मुद्दे जैसे- गरीबी, भुखमरी, बेरोजगारी, महंगाई, डूबती हुई आर्थिक व्यवस्था, दलितों, किसानों, मजदूरों, आदिवासियों की समस्या, स्त्रियों की सुरक्षा, अल्पसंख्यकों के मुद्दे, थर्ड जेंडर के सवाल, कश्मीर के हालात, पूर्वोत्तर राज्यों की समस्याएं आदि गंभीर चर्चाएं गायब हैं। इसी कड़ी में मीडिया के चरित्र चित्रण और विविध रुपों का ज़िक्र समकालीन हिंदी कविताओं में किया गया है।

बीज शब्द : समकालीन समय, हिंदी मीडिया, इलेक्ट्रॉनिक और प्रिंट मीडिया की भूमिका, विज्ञापन, समकालीन कविता, 'ऑपरेशन 136' आदि।

शोध प्रविधि : शोध कीविश्लेषणात्मक पद्धति के साथ-साथ आलोचनात्मक,सामाजिक पद्धतियोंआदि का भीउपयोग किया गया है।

मूल आलेख : जब भी मीडिया का नाम ज़ेहन में आता है तो इसका अर्थ सही सूचनाओं को प्रसारित करने से लिया जाता है। यह एक ऐसा माध्यम है, जिसका उद्देश्य समाज को तथ्यों के आधार पर समग्र विषयों, घटनाओं तथा मुद्दों की जानकारी देना है। लोकतंत्र में इसकी महत्त्वपूर्ण भूमिका है। इसीलिए मीडिया को लोकतंत्र का चौथा खंभा भी माना जाता है। इस चौथे खंभे का मुख्य कर्त्तव्य है विधायिका, कार्यपालिका तथा न्यायपालिका परपैनी निगाह रखना। मीडिया का एक और मुख्य कर्त्तव्य यह भी है कि जनता की आवाज़ सत्ता तक पहुंचाने के साथ-साथ सरकार की निष्पक्षता से आलोचना करना तथा उसकी कमियों को दिखाना। सरकार की ख़ूबियों को दिखाने के लिए उसका अपना सूचना मंत्रालय होता है। यह मीडिया की जिम्मेदारी नहीं होती। लोकतंत्र में मीडिया हमेशा विपक्ष की भूमिका निभाता है। लेकिन इस बात को कहने में अतिशयोक्ति नहीं होगी कि सत्ता चाहे जिसकी भी रही हो, उसनेहमेशा मीडिया पर वर्चस्व कायम करने का प्रयास कियाहै।समकालीन समय में भीहिंदी मीडिया अपने सिद्धांतों से समझौता कर चुका है। दरअसल मीडिया पर पूंजीवादी व्यवस्था, कॉर्पोरेट तथा सत्ता का दबाव है। इसीलिए आज का मीडिया सत्ता के चौखट पर चरमरा रहा है। इसपर पूरी तरह से राजनीति तथा सत्ताधारियों का नियंत्रणबना हुआ है। इसलिए अब यह जनता की आवाज़ नहीं बल्कि सत्ता की आवाज़ बना बैठा है। वर्तमान समय में मीडिया चैनल्स के डिबेट से मुख्य और महत्वपूर्ण मुद्दे जैसे- गरीबी, भुखमरी, बेरोजगारी, महंगाई, डूबती हुई आर्थिक व्यवस्था, दलितों, किसानों, मजदूरों, आदिवासियों की समस्या, स्त्रियों की सुरक्षा, अल्पसंख्यकों के मुद्दे, थर्ड जेंडर के सवाल, कश्मीर के हालात, पूर्वोत्तर राज्यों की समस्याएं आदि गंभीर चर्चाएं गायब हैं। इन तमाम चर्चाओं के बदले सरकार का महिमा मंडन, चुनाव रैलियों और भाषणों का कवरेज किया जाने लगा है। वर्तमान समय का मीडिया सत्ता की कठपुतली बन चुका है। इसीलिए उनकी राजनीतिक गतिविधियों के लिए हिन्दू-मुस्लिम डिबेट तथा साम्प्रदायिक स्थिति बनाए रखने के लिए समर्पित है। केंद्र या राज्य में सरकार चाहे जिसकी भी हो, लेकिन मीडिया को 'मेनेज' किये जाने की बात को नज़रअंदाजनहीं किया जा सकता। जो व्यक्तिनिष्पक्षता से अपनी पत्रकारिता करते हैं या सरकार की आलोचना करते हैं, उन पर दबाव बनाया जाना या फिर चैनल्स से निकाल दिया जाना आम बात बन चुकी है। इस मामले में कई सारे उदाहरण मौजूद हैं। यहाँ तक की पत्रकारों की हत्या भी की गई है। ऐसी गतिविधियों से लोकतंत्र कमज़ोर होने की दिशा में बढ़ रहा है। एनडीटीवी हिंदी के वरिष्ठ पत्रकार रवीश कुमार अपनी पुस्तक 'बोलना ही है' में लिखते हैं- "न्यूज़ चैनलों ने भारत के लोकतांत्रिक मूल्यों की हत्या करने में जो मेहनत की है, उसी का नतीजा है कि अब भारत के लोग उन चैनलों को बगैर किसी सवाल के देखते हैं जिनके यहाँ सरकार से सवाल नहीं होता।"[1]

आज का मीडिया कितना आज़ाद है? ये सवाल महत्वपूर्ण और चिंताजनक है। इस सन्दर्भ में क्रांतिकारी शहीद-ए-आज़म भगतसिंह के विचार आज भी प्रासंगिक लगते हैं। उन्होंने कहा था- "पत्रकारिता का व्यवसाय जो किसी समय बहुत ऊँचा समझा जाता था, आज बहुत ही गन्दा हो गया है। ये लोग एक-दूसरे के विरुद्ध बड़े मोटे-मोटे शीर्षक देकर लोगों की भावनाएँ भड़काते हैं और परस्परसिर-फुटौव्वल करवाते हैं।"[2] लोकतंत्र में पत्रकारिता की भूमिका को यदि देखा जाए तो उसे समाज में जनता के बीच साम्प्रदायिक व संकीर्ण भावनाओं को मिटा कर समन्वय के भाव को जगाना और एक बेहतर माहौल पैदा करना होता है। लेकिन आज पत्रकारिता या पत्रकार इन चीज़ों में विफल नज़र आ रहे हैं। 'साम्प्रदायिक दंगे और उनका इलाज' आलेख में भगतसिंह लिखते हैं- "अखबारों का असली कर्तव्य शिक्षा देना, लोगों से संकीर्णता निकालना, साम्प्रदायिक भावनाएँ हटाना, परस्पर मेल-मिलाप वढ़ाना और भारत की साझी राष्ट्रीयता बनाना था; लेकिन इन्होंने अपना मुख्य कर्तव्य अज्ञान फैलाना, संकीर्णता का प्रचार करना, साम्प्रदायिक बनाना, लड़ाई झगड़े करवाना और भारत की साझी राष्ट्रीयता को नष्ट करना वना लिया है। यही कारण है कि भारत वर्ष की वर्तमान दशा पर विचार कर आँखों से रक्त के आँसू बहने लगते हैं।"[3]

वर्तमान समय में अधिकतर मुख्यधारा के मीडिया की भूमिका लाचार स्थिति में है। जो कुछ भी थोड़ी-बहुत सूचनाएं बची हैं, वे मुख्यधारा के मीडिया में नहीं वल्कि वैकल्पिक (अल्टरनेटिव) मीडिया में हैं। एक तरफ सत्ता का दबाव और दूसरी तरफ टी.आर.पी. की होड़ में मुख्यधारा का मीडिया जूझ रहा है। दरअसल पूँजी कमाना ही इलेक्ट्रॉनिक और प्रिंट मीडिया का मुख्य उद्देश्य बन गया है। वर्ष 2009 लोकसभा चुनाव और वर्ष 2010 के महाराष्ट्र विधानसभा चुनाव के बाद 'पेडन्यूज़' की चर्चा सामने आई थी, जिसमें स्थानीय पत्रकार से लेकर मुख्यधारा के कई मीडिया चेनल्स भारी रकम लेकर अलग-अलग राजनीतिक पार्टियों की प्रचार-सामग्री को समाचार के रूप में प्रकाशित किया करते थे। हालांकि इस बात का पता चलने पर प्रेस काउंसिल, एडिटर्सगिल्ड और पत्रकार यूनियनों ने काफी निंदा भी की थी।

वर्तमान समय में मीडिया के चेहरे पर से नकाब हटाने का काम 'कोबरा पोस्ट' का 'ऑपरेशन 136' ने किया है। इस स्टिंग ऑपरेशन के माध्यम से मीडिया जगत के उस स्याह पक्ष का पर्दा फाश हुआ है, जहां कहा जाता है कि पैसों के लिए देश का मीडिया अपनी आवाज और कलम का भी सौदाकर सकता है। इस ऑपरेशन में देश के कई नामचीन मीडिया संस्थान सत्ताधारी दल के लिए चुनावी हवा तैयार करने के लिए राजी होते नजर आए हैं। "कोवरापोस्टने' ऑपरेशन 136' का पहला भाग जारी किया है जिसमें कुल 16 मीडिया संस्थानों के नाम सामने आए हैं। जिन में अमर उजाला, पंजाब केसरी, दैनिक जागरण, इंडिया टीवी, सब नेटवर्क, डीएनए (डेली न्यूज एंड एनालिसिस) और यूएनआई जैसे बड़े नाम शामिल हैं। इनके अलावा स्कूपव्हूप, रेडिफ डॉटकॉम, 9 एक्सरशन, समाचार प्लस, एचएनएन, लाइव24×7, स्वतंत्र भारत, इंडियावॉच, हिंदी डेली, साधना प्राइम न्यूज को भी सौदेबाजी में लिप्त पाया गया है। इन सभी मीडिया संस्थानों से जुड़े बड़े पदों पर काबिज लोगों की वातचीत के अंश खुफिया ऑपरेशन में दिखाए गए हैं।"[4] 'पेड़ न्यूज़' की कड़ी में 'फेक न्यूज़' भी साथ-साथ काम करता है। सूचनाओं को तोड़-मरोड़ कर समाज में झूठ फैलाया जा रहा है। दुनिया भर की फेक न्यूज़ लोकतंत्र का गला घोटने और सत्ता में बैठे तानाशाहों की मौज का माध्यम बन रही है। वर्तमान समय में गाँव देहात से लेकर राजधानी दिल्ली तक फेक न्यूज फैलाने के लिए आईटी सेल तथा पूरा तंत्र विकसित हो चुका है। फेक न्यूज़ के सन्दर्भ में रवीश कुमार का मानना है कि- "फेक न्यूज़ एक टूल है, जिसकी मदद से जनता को उसके वास्तविक मुद्दे से अलग कर दिया जाता है। उसे एक दूसरी रियलिटी में ले जाया जाता है, जहां वह अपनी चिंता छोड़कर गलत सूचनाओं से तैयार किसी राष्ट्रीय स्तर की चिंता के सामने बौना खड़ा, चुपचाप आत्मसमर्पण कर देता है।"[5] फेक न्यूज़ का एक उदाहरण 2016 में नोट वंदी के दौरान मुख्यधारा के मीडिया 'ज़ी न्यूज़' के सम्पादक सुधीर चौधरी ने अपने 'डीएनए' शो में नए 2000 रुपए के हर एक नोट पर NGC यानी नैनो GPS चिप लगा होगा, जिसे सैटेलाइट के ज़रिये ट्रेक किया जा सकता है, जैसी अफवाह फैलाई थी। इस अफवाह के मामले में बीबीसी हिंदी लिखता है-"आरबीआई ने स्पष्ट किया है कि ऐसी को ईटेक्नोलॉजी नहीं है।"[6] आज 'आल्ट न्यूज़ वेबसाइट' तमाम तरह के फेक न्यूज़ की जांच पड़ताल कर सही तथ्यों की जानकारी देने का सराहनीय कार्य कर रही है।

वर्तमान समय में प्रेस की आज़ादी पर ख़तरा मंडरा रहा है। 'रिपोर्टर्स विद आउट बॉर्डर्स' 2018 की रिपोर्ट के अनुसार प्रेस की आजादी के मामले में 180 देशों में भारत 140 वें स्थान पर पहुँच गया है। इससे पता चलता है कि सत्ता में वैठे लोग किस तरह से मीडिया की आज़ादी को ख़त्म कर रहे हैं। इस सन्दर्भ में न्यूज़ लौंड्री.कॉम की रिपोर्ट प्रासंगिक है। "भारत में साल 2018 में कम से कम छह पत्रकारों की हत्या कर दी गयी। पत्रकारों पर सोशल मीडिया के जरिये हमले हो रहे हैं। देश में हिंदूराष्ट्रवाद के नाम पर चल रहे एजेंडे की आलोचना करने वाले पत्रकारों को 'भारत विरोधी' कहा जा रहा है और उन पर कई तरह से हमले होते रहे हैं। रिपोर्ट के मुताबिक़, जैसे-जैसे भारत में साल 2019 के आम चुनावों की तारीख़ क़रीब आती गयी है, पत्रकारों पर प्रधानमंत्री नरेंद्र मोदी के समर्थकों के हमले बढ़ते गये हैं। अगर सरकार की आलोचना कोई महिला पत्रकार कर रही हो, तो स्थिति और भी ज़्यादा ख़राब हो जाती है।"[7] मीडिया पर संकट हर दौर में रहा है। लेकिन अंतर केवल इतना है कि कभी इसकी स्थिति अच्छी रही तो कभी बुरी भी रही है। प्रोनॉय रॉय लिखते है- "पहले 25 साल की अवधि में, भारत का प्रिंट मीडिया स्वतंत्र था। इनमें से कुछ तो वेहद मुखर थे और हमेशा सरकार को सावधान की स्थिति में रखते थे।"[8] आज भारत के हर नागरिक तथा पत्रकार की जिम्मेदारी है कि मीडिया को बचाए रखे। भारत का संविधान अभिव्यक्ति की आज़ादी का अधिकार देता है। इसीलिए चुनौतियों का सामना करते हुए सत्ता से सवाल करने के साथ-साथ जनता की आवाज़ बनना होगा। आज सोशल मीडिया द्वारा फैलाई जाने वाली सूचनाओं से सतर्क रहने की आवश्यता है। कुछेक पत्रकार निष्पक्षता से लगातार पत्रकारिता कर रहे हैं। उन्हें आईटी सेल तथा सरकार की ओर से ट्रोल किया जाने लगा है। यही वर्तमान समय में मीडिया का यथार्थ है।

समकालीन हिंदी कविताओं में मीडिया के विविध रूपों का चित्रण किया गया है। लोकतंत्र में पत्रकारिता तथा पत्रकार की क्या भूमिका है? इलेक्ट्रॉनिक और प्रिंट मीडिया समाज में सूचना एवं तथ्य परक जानकारी देने में कहाँ तक सक्षम हैं? क्या मीडिया जनता के मुद्दे उठाने में तथा सरकार से सवाल करने में अपनी भूमिका निभाता है? इन तमाम बिन्दुओं पर समकालीन कवि वेबाकी से अपने विचार रखता है। ये कविताएँ वर्तमान भारतीय परिवेश में मीडिया की जीती-जागती तस्वीर को बयाँ करने में प्रासंगिक हैं। समकालीन कवि अरुण कमल की 'ख़बर' कविता वर्तमान समय में पत्रकारिता की दयनीय स्थिति का चित्रण करती है। दयनीय स्थिति इसलिए है कि पत्रकारिता नेअपने मूल्य तथा सिद्धांतों से समझौता किया है। इसलिए अखबार की सुर्ख़ियाँ तथा पन्ने दर पन्नों से ख़बरे गायब हैं। वर्तमान समय की विडम्बना यह है कि आज की पत्रकारिता केवल पूंजीवादी, बुर्जुआ समाज, राजनेता, सेलेब्रेटी आदि के कवरेज में पूरा समय बिताती है और आम जनता के जीवन से जुड़ी समस्याओं,घटनाओं तथा गतिविधियों से अनभिज्ञ रहती है। अक्सर देखा गया है कि मीडिया का कैमरा और कवरेज से गरीब, किसान, दलित, मजदूर, स्त्री, अल्पसंख्यक, थर्ड जेंडर आदि की समस्याएं गायब रहती हैं। इसीलिए कविता के पहले भाग में कवि कहता है-

"अख़बारों में ख़बर थी: कैलिफ़ोर्निया की एक कुतिया ने तेरह वच्चे एक साथ जने।
अख़बारों में ख़बर थी: युवराज ने कंगालों में कम्वल बांटे।
अख़बारों में खबर थी: विश्वसुन्दरी का वजन 39 किलो है।
अखवारों में खबर थी: प्याज बड़ा गुणकारी होता है।
अख़बारों में ख़बर थी: राजनेता ने दाढ़ी मुड़ायी।
एक ख़बर जो कहीं नहीं थीं : किश्ता गौड को फांसी हो गयी
एक ख़बर जो ख़बर नहीं थीं : भूमैया को फांसी हो गयी।"[9]

मीडिया के इतिहास पर नज़र डालें तो इस बात से रुबरू होते हैं कि भारत की आज़ादी एवं समाज को जागरुक करने में समाचार पत्रों की महत्वपूर्ण भूमिका रही है। जिनमें भगतसिंह का 'प्रताप', महात्मा गांधी का 'यंग इंडिया' और 'नवजीवन', डॉ. बाबा साहेब अम्बेडकर का 'मूकनायक' आदि के साथ-साथ अनेक समाचार पत्र थे जिन्होंने समाज को नयी दिशा देने में अपना योगदान निभाया। समाचार पत्रों का उद्देश्य ही यही था कि सूचनाओं के माध्यम से आम जनता के जीवन में बदलाव लाना तथा सत्ता की जन-विरोधी नीतियों से अवगत कराना। अख़वार समाज को बदलने तथा लोकतंत्र के मूल्यों को बनाए रखने में मुख्य भूमिका निभाता है और निभाना ही चाहिए। लेकिन वर्तमान समय में बाजारवाद तथा कॉर्पोरेट जगत के विज्ञापनों से आज के अख़वार भरे पड़े हैं, जिनमें जनता को आकर्षित करने के लिए तरह-तरह के विज्ञापन प्रकाशित होते हैं। इन तमाम चीजों से न इलेक्ट्रॉनिक मीडिया वचा है न प्रिंट मीडिया। वहुत ही कम ऐसी पत्रिकाएँ बची होंगी जिनमें सच्ची खबरें तथा सूचनाएं होंगी। एक इंटरव्यू में गौरी लंकेश ने अपनी 'लंकेश पत्रिके' के सन्दर्भ में कहा था- "यह हमेशा ही धर्म निरपेक्षता, दलितों, महिलाओं और समाज के उपेक्षित वर्ग के साथ खड़ी रही है। पत्रिकेउन लोगों की आवाज़ वन गई थी जिनके लिए मुख्य धारा की मीडिया में कोई जगह नहीं थी।"[10] पत्रकारिता के बदलते स्वरुप को समकालीन कवि ज्ञानेन्द्रपति ने बख़ूबी चित्रित करने का प्रयास किया है। 'मधुशालीन' कविता की पंक्तियाँ इस बात की ओर ध्यान आकर्षित करती हैं कि अखबार के पन्नों में मसाला चाहिए। जिसकामुख्य उद्देश्य युवा वर्ग को आकर्षित करने के साथ-साथ पैसा कमाना है। कवि कहता है-

"भले ही वे
घटनाओं में समाचार
और समाचार में स्कूप

सूंघ लेनेवाले पत्रकार हों
जो सच पूछो तो बस इतना ही जानते हैं
कि पक रहे मांस को
और छप रहे अखबार को
चाहिए गरम मसाला।"[11]

समकालीन कवि मंगलेश डबराल ने समाज के हर विषय को अपनी कविता का केंद्र बनाया तथा समाज के ज्वलंत मुद्दों से आम जनता को अवगत कराने में महत्वपूर्ण भूमिका निभाई है। इसी सिलसिले में इनकी कविता 'त्वचा' बाजारवादी मीडिया में चलने वाले विज्ञापन की भरमार को प्रस्तुत करती है। आज बाजार में कई तरह के उत्पाद उपलब्ध हैं। जिनका प्रचार एवं प्रसार अधिकतर स्त्री के द्वारा विज्ञापन के माध्यम से दिखाया जा रहा है। दरअसल मीडिया और पूँजीवाद का गहरा सम्बन्ध होने के कारण एक दूसरे को लाभ पहुंचाना ही इनका मुख्य उद्देश्य बना हुआ है। इसीलिए दिन रात न्यूज़ चैनल्स और टीवी द्वारा विज्ञापन दिखाए जाते हैं। इसी बात को कविता की इन पंक्तियों में स्पष्ट रूप से देख सकते हैं-

"त्वचा ही इन दिनों चारों ओर दिखती है
त्वचामय बदन त्वचामय सामान
त्वचा का बना हुआ कुल जहान
टीवी रात-दिन दिखलाता है जिसके चलते-फिरते दृश्य
त्वचा पर न्योछावर सब कुछ
कई तरह से लेप उबटन झाग तौलिए आसमान से गिरते हुए
कमनीय त्वचाओं का आदान-प्रदान करते दिखते हैं स्त्री-पुरुष[12]

भारत का संविधान आर्टिकल 19 (1) अभिव्यक्ति की आज़ादी का अधिकार देता है। यह आज़ादी मीडिया के सन्दर्भ में भी है। मीडिया स्वतंत्र रूप से प्रतिबद्ध होना चाहिए। मीडिया की स्वतंत्रता से सरकार का मूल्यांकन किया जा सकता है।इस सन्दर्भ में वरिष्ठ पत्रकार रवीश कुमार कहते हैं- "किसी भी सरकार का मूल्यांकन इस बात से भी होना चाहिए कि उसके दौर में आज़ाद मीडिया था या गोदी मीडिया।"[13] आज बहुत कम ऐसे मीडिया हाउसेज और पत्रकार हैं जो सत्ता से सवाल करते हैं और सामाजिक मुद्दों को उठाते हैं। हर रोज समाज में हो रही हत्याएं, अत्याचार, शोषण, हिंसा आदि से अखबार के पन्ने भरे पड़े हैं। समाज में इस तरह की घटनाओं के पीछे अधिकतर सत्ताधारियों का हाथ होता है। दरअसल यह लोग अपनी राजनीति के लिए समाज में असंतुलन, तनाव तथा साम्प्रदायिक माहौल की स्थिति बनाए रखते हैं। जब कभी ऐसी घटनाओं के बारे में सांसद या विधायक से सवाल पूछा जाता है तो कन्नी काट लेते हैं। समकालीन कवि मंगलेश डबराल राजनीतिक व्यवस्था के चलते समाज में घटित घटनाओं से चिंतित है। जब वह अखबार के पन्ने पलटते हैं तो राजनीति का डरावना चेहरा सामने आता है। समाज की स्थिति को देख कर कवि कीचिंता 'सोने से पहले' कविता में अभिव्यक्त हुई है-

"सोने से पहले मैं समेटता हूँ सुबह के अखबार
परे खिसका देता हूँ दिन भर की सुर्ख़ियाँ
मैं याद नहीं रखना चाहता अत्याचार की तारीखों को और हत्यारे दिनों को
मैं नहीं जानना चाहता कितना रक्त बहाकर बनाए जा रहे हैं राष्ट्र
मैं औंधी कर देता हूँ तमाम तस्वीरें
जिसमें एक पुल ढह रहा है सिसकियाँ उठ रही हैं
एक चेहरा जान बख़्श देने को भीख मांग रहा है
एक आदमी कुर्सी पर बैठा अट्टहास कर रहा है।"[14]

समकालीन कवि लीलाधर जगूड़ी भी वर्तमान समय में मीडिया के चरित्र को उजागर करने में पीछे नहीं है। आज का मीडिया नैरेटिव और प्रोपगंडा के तहत काम करता है। यह चिंताजनक है। पहले रिपोर्टर जनता के बीच जा कर स्टोरी करता था, लेकिन आज स्टूडियो से ही सब कुछ चल रहा है। इसीलिए लोकल एवं राष्ट्रीय मीडिया में भी आम आदमी के जीवन से जुड़े सवाल गायब हैं। कवि 'ख़बरें' कविता में रोज आने वाली ख़बरों का विश्लेषण करता है। जिसमें आम जनता अच्छे दिनों की उम्मीद करते-करते ख़राब जीवन बिताने के लिए विवश है। दरअसल समाज में ऐसी स्थिति के लिए अधिकांशतः सरकार की विफल योजनाएं तथा नीतियाँ जिम्मेदार होती हैं। ऐसी स्थिति में सरकार अपनी विफलता को छिपाने के लिए मीडिया का सहारा लेकर अपनी योजनाओं तथा नीतियों का बखान करने का प्रयास करती है। कवि ऐसी व्यवस्था से चिंतित होते हुए कहते है-

"रोज़ ख़बरें आती हैं
लांछित और लज्जित होने की ख़बरें
उनकी कोइ ख़बर नहीं आती
जिनमें लज्जा की भनक हो
जो अच्छे दिनों की कामना में
ख़राब जीवन जिए चले जाते हैं
जो उस जीवन से बाहर चला आता है
उसकी ख़बर आती है।"[15]

निष्कर्ष: समकालीन हिंदी कविताएँ मीडिया के विभिन्न पक्षों पर चर्चा करते हुए वर्तमान समय में मीडिया की आज़ादी, चुनौतियों तथा आम आदमी के जीवन से जुड़े सवालों पर चर्चा करती है। इसमें कोई दोराय नहीं है कि आज का मीडिया अनेक चुनौतियों से गुजर रहा है। लोकतंत्र के इस चौथे स्तम्भ को खोखला करने तथा पत्रकारों पर दबाव बनाने में सरकार की लगातार कोशिशे अतीत से लेकर आज भी जारी हैं। समकालीन हिंदी कविताएँ इन तमाम विषयों पर समग्र रूप से चर्चा करने की चेष्टा करती है।

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अपनी माटी (ISSN 2322-0724 Apni Maati) **मीडिया-विशेषांक**, अंक-40, मार्च 2022 **UGC Care Listed Issue**

अतिथि सम्पादक-द्वय : डॉ. नीलम राठी एवं डॉ. राज कुमार व्यास, **चित्रांकन** : सुमन जोशी (बाँसवाड़ा)

Tags 40 डॉ. शिराजोद्दीन मीडिया विशेषांक शोध UGC Care Listed Issue

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एक टिप्पणी भेजें

‹ और नया

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'अपनी माटी संस्थान' चित्तौड़गढ़ (पंजीयन संख्या 50 /चित्तौड़गढ़/2013) द्वारा संचालित और UGC Care List Approved त्रैमासिक ई-पत्रिका 'अपनी माटी ISSN 2322-0724 Apni Maati ('समकक्ष व्यक्ति समीक्षित जर्नल' PEER REVIEWED/REFEREED JOURNAL), कंचन-मोहन हाउस,1, उदय विहार, महेशपुरम रोड, चित्तौड़गढ़-312001,राजस्थान, अन्य जरूरी प्रश्न हो तो 9460711896(Manik) और 9001092806(Jitendra) पर Only Watts App करके सम्पर्क कर सकते हैं कॉल पर बात नहीं होगी।, apnimaati.com@gmail.com

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Internal Defect Identification and Classification of Apple Using MRI Images Based on Convolutional Neural Network (CNN) Deep Learning Model

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Abstract - **Apples are considered as most cultivated and consumed fruits worldwide. The quality evaluation is a highly challenging task. Presently, Digital Image Processing technology is used to detect external defects such as the shape, size, color, and texture of the apple fruit, whereas identifying the internal defect of an apple becomes a more tedious task. In this current study, an effort was made to detect the internal quality evaluation of apple fruits using the Magnetic Resonance Imaging (MRI) method. A total of 21 apples were subjected to MRI scanning by which we got 196 MRI images. Manually these MRI images are analyzed and classified as healthy and defective samples. Then, these MRI image datasets were divided into 60:40 as training and testing datasets respectively. The deep learning approach has been employed to classify apples. In our study, we developed Convolutional Neural Network (CNN) to classify healthy and defective apples and achieved 67% of accuracy.**

Index Terms - Apple, Digital Image Processing, Convolutional Neural Network (CNN), Magnetic Resonance Imaging (MRI).

INTRODUCTION

India is an agricultural-based country. Most of the economy of India is interdependent on the agricultural sector. Apple is considered as all seasonal fruit and the most demanding fruit because of its high nutritional value. In India Jammu and Kashmir, Himachal Pradesh is the state where apple is primarily cultivated. It grows around 1500-2700m above sea level in hill stations [1]. Apple fruit is exported to over 75 countries from India. The total volume of export in 2020-21 was around 30 thousand metric tons [1]. The quality of apples should be retained to increase its export, the defective apples should be spotted and removed before they are released in the market [2]. The external defect like texture, color, and size can be very effectively detected in digital image processing using biomolecular sensing technology, imaging hyperspectral techniques, imaging multispectral technology, and machine traditional vision technology [3]. Several studies in deep learning have been carried out to detect external defects in fruits using CNN, but there was less research has been done in digital image processing to detect internal defects in fruits. However, some imaging techniques arise after the 1980s to check the internal quality of agricultural products like X-rays, Sonography, etc. In the medical field to diagnose the severity of the disease in the patients MRI scanning was done because of its non-invasive and non-destructive nature. Whereas, in the field of agriculture digital image processing is not been applied on MRI images of fruits to detect internal defects. In our current study, a deep learning model CNN has been developed to detect an internal defect of apple and also to classify healthy and defective fruit using MR images of apple.

RELATED WORK

Author in [4] reviewed current advances in digital image processing methodology for evaluation of the quality of fruit. A survey in [5] is made on the availability of different non-destructive technologies such as X-ray, NIR, Sonic/ Ultrasonic methods to detect the internal defects of agricultural products. The author also discussed the advantages and disadvantages of these technologies.

The author in [6] proposed the finding of bruises in magnetic resonance images (MRI) of apples by using dissimilar pulse arrangement methods to examine chronological variations in MRI image dissimilarity in bruised & disinfected parts of the flesh. The author also stated that contrast between infected and dis-infected sections was found with time.

An application of MRI for Braeburn apple's tissue analysis is done in [7] . In this study, small samples of Braeburn apples were investigated with field MRI to identify the dissimilar tissue structures types. The author focused on MRI images for tissue classification using inner and outer cortex tissue and described the interior superiority faults such as holes, worms damage, or bruising & their alterations when time is passed.

A review of current challenges in the MRI methodology for agriculture products is made in [8]. MRI scanning is a significant technology to get a different variety of measurements to evaluate growth rate and quality constraints in agricultural and other food resources to improve the fundamental biological parameters. MRI scanning method is considered as the best method over last decades and Magnetic Resonance Imaging gives the structure of food to be imaged non-destructively, Since MRI does not produce any damaging radiation, it can be taken as an effective device for analysis of food products qualities [9].

Different computer vision technologies used to detect the internal quality of fruit are discussed in [10]. Color image of tomato fruit is taken for observation, defective skin is calculated using different image processing methods. If the value of the pixel is less than the threshold then it is considered a defective one otherwise it is taken as good quality fruit. Open CV/ Python application is used for implementation.

A combined CNN and LSTM deep learning model is applied in [11] and got 98.17% of classification accuracy after 50 epochs. The author used CNN classifier to classify a set of 6519 pomegranate fruits into normal and abnormal. of classification accuracy after 50 epochs.

CNN model was used in [12] for the classification of three varieties of fruits Apple, Banana, and Orange. The dataset contains a total of 443 images of apples, 363 images of oranges, and 231 images of bananas. CNN model was trained using Tensorflow with Mobilenet V2 implementation provided by Keras and succeeded with 95% of accuracy.

A CNN model was proposed in [13] to classify fresh and rotten fruits. The author used bananas, orange, and apple fruits for experimental purposes. The model was built with 16 convolutional filters of size 3 x 3. The total dataset is divided into three groups for training 60% and for validation 10% and for testing 30%. This model uses the Adam optimizer got 97.82% accuracy and with RMS prop got 85.64% of accuracy.

It has been observed that a lot of research has been done in biological science to detect internal defects without destructing fruits using MRI images because of its non-destructive and noninvasive nature. In digital image processing CNN model was used to detect external defects of fruits. In our proposed methodology, internal quality analysis was done using MRI images of apple fruits, and the CNN model is developed to classify healthy and defective apple fruits.

MATERIALS AND METHODS:

I. Dataset Preparation:

21 Delicia apples were brought from the local market. Firstly photographic pictures of each apple are taken in all angles Front, Back, Bottom, and Arial (Fig 1). Individual Apples were subjected to vertical and horizontal MRI scanning (Fig 2 & 3). MR images were obtained using 1.5 Tesla Sieman's Magnetom Spectro MR machine with T2- weighted MR images with a recurrence period (TR) of 8980 and Spin echo period (TE, the period during which sample magnetization dephases and then rephrases) of 100.2 with slice diameter of 116.7mm and interslice gap of 8.0mm. The total number of slices for all channels ranges from 9 to 33, leading to 145 images. The pixel size of each image was 512 X 512 (Table 1). The images are grayscale. MR image production period depends on the resolution, the higher the needed resolution the more acquisition are mandatory for image production and the lengthier it acquires to get an image. MRI images were analyzed using RadiAnt DICOM Viewer (64-bit) software.

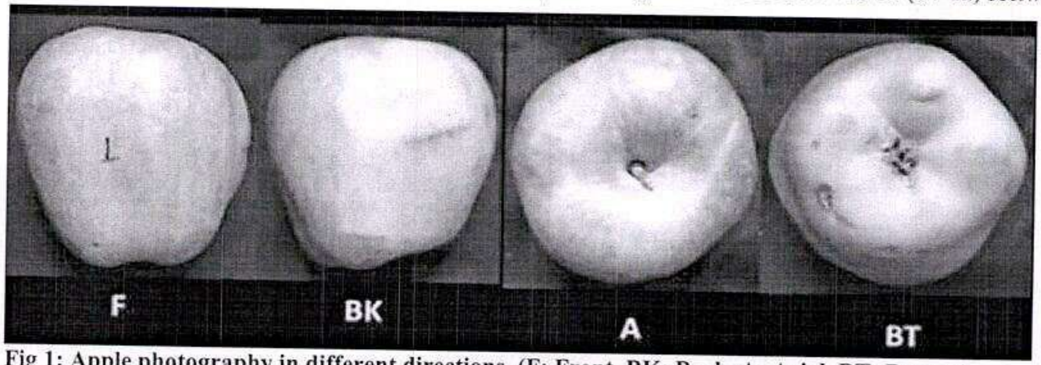


Fig 1: Apple photography in different directions. (F: Front, BK: Back, A: Arial, BT: Bottom)

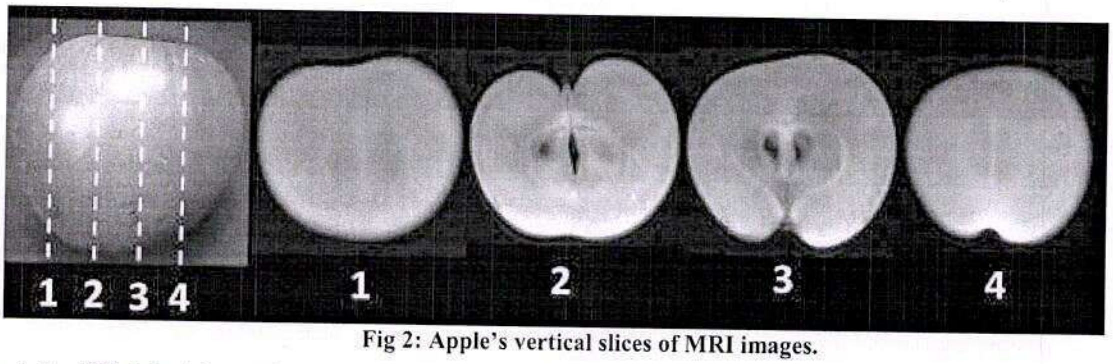


Fig 2: Apple's vertical slices of MRI images.

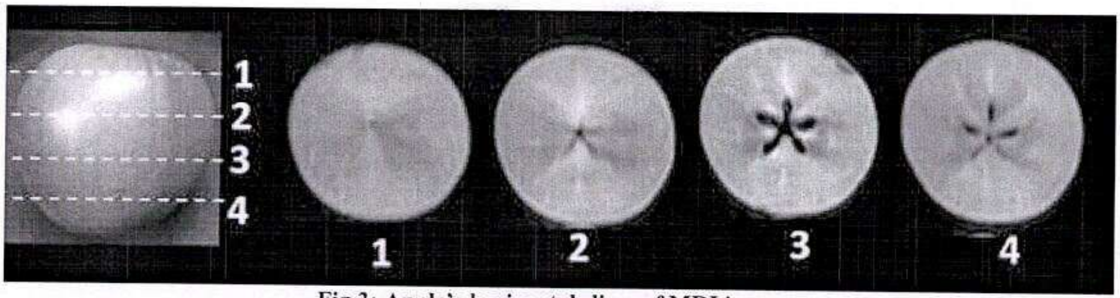


Fig 3: Apple's horizontal slices of MRI images.

Table 1: MRI scanning parameters.

Method	Parameters
Machine	1.5 Tesla Sieman's Magnetom Spectro
TR	8980
TE	100.2
Slice diameter	100.2
Slice gap	8.0mm
Image size	512 x 512

Convolutional Neural Network (CNN):

CNN is a category of neural network which mimics a biological neural network. It is considered as the subset of machine learning and the heart of deep learning neural networks. CNN is composed of a number of hidden layers each node connected to another node associated with weights and threshold [14]. CNN model is used for image classification, image recognition, etc. And an ideal model is composed of several layers such as Convolutional layer, Pooling layer, Fully connected layer, ReLu, Dropout layer, and Classification layer as shown in Figure 4.

Convolutional layer: This is the first layer, it takes input images and reduces the size of images by extracting various features from images. The convolution layer applies convolution operation to the input image and passes it to the next layer. It reduces the size of the image from the matrix into a vector bringing all information into a single pixel. Between the input image and filter of size M x M, a mathematical operation was performed [11] to extract features like edges and corners. The output of this layer contains information about the edges and corners of images. The mathematical operation convolution layer is:

$$F(i, j) = (I * K)(i, j) = \sum\sum (i+m, j+n)\, K(m,n) \qquad (1)$$

Where I is input matrix K is 2D filter and F is the output of 2D feature map

Pooling layer: It is also called as downsampling layer and it is used for dimensionality reduction purposes. The working of the Pooling layer is the same as the convolutional layer only difference is that it does not contain weights. Pooling layers are further classified into two types:

Max pooling: As this filter is applied on the input image, It selects the maximum value pixel to send to the output array.

Average pooling: As this filter is applied across the input image, it computes the average value to send to the output array.

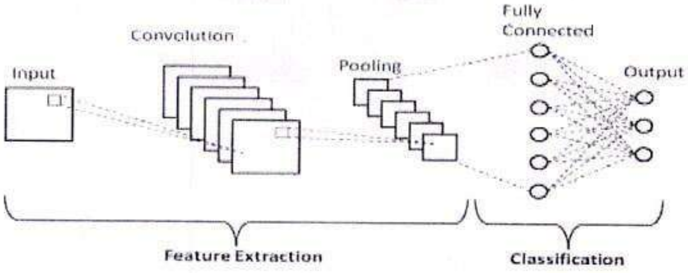
Fully connected layer (FC): In this layer, each node in the input layer is connected with each node of the previous layer[11]. In this layer feature extraction is performed from the previous layer and classification is done based on previous learning.

Rectified Linear Unit (ReLu): This layer exists after the convolutional layer. It consists activation function which takes positive input from the previous layer passes it to the next layer. If the input is negative then output is zero. The activation function of the ReLu layer

$$f(x) = max(0, x) \qquad (2)$$

Dropout layer: Drop out layer exists after the FC layer, it removes the overfitting on the training data. Dropout deactivates some layers from the hidden layer as a result nullifies contribution to the output.

Classification layer: This is the layer where exact classification takes place, it comes after fully connected layer and it is the main layer where image identification takes place.


Input
Convolution
Pooling
Fully Connected
Output
Feature Extraction
Classification

(Figure 4: Network of CNN model)

EXPERIMENTAL RESULTS AND DISCUSSION

I. Dataset Acquisition:

only 21 apple fruits were able to scan and a total of 196 MRI slices were acquired by RadiAnt DICOM Viewer (64-bit) software. As observed manually from the MRI images fruits were categorized into two groups Group 1 is having fruits that are seen as healthy and no defect observed externally as well as internally (Fig 5) as compared with photographic as well as MRI images. Group 2 has fruits containing defects externally and internally when compared with photographic and MRI image slices (Fig 6). Defect severity is also being calculated based on the coverage area of the defect and color intensity in the MRI images.

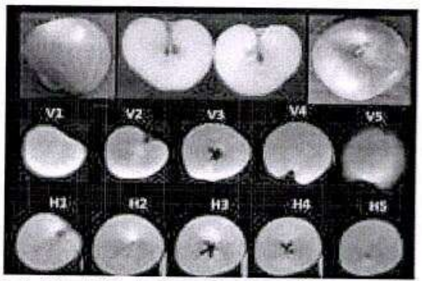

V1
V2
V3
V4
V5
H1
H2
H3
H4
H5

Fig 5: No defects found externally as well as internally.

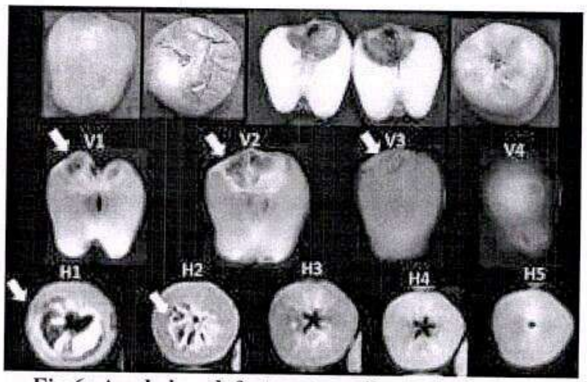

V1
V2
V3
V4
H1
H2
H3
H4
H5

Fig 6: Apple has defects externally as well as internally.

The dataset includes a total of 196 MR images including healthy and defective ones as given in Table 2.

Table 2: Dataset details

Name	No. of Images
Healthy	128
Defective	68

II. B. Experimental Setup:

For experimental purposes, among 196 MRI images, 60% were used for training purposes, and the remaining 40% were used for testing purposes. CNN model was built using python toolbox in the Google Colab platform. Hyperparameters of the model like the number of epochs, learning rate, and dropout are tuned to the best value to get better results .

III. The number of epochs:

An epoch represents the number of iterations taken by a machine to get the entire training dataset [23]. One epoch means when the entire dataset moves backward and forward through the network. The number of epochs needed to run the model depends on the number of the training dataset. In our model, we have used 20 epochs to run the model successfully.

IV. Batch size:

Batch size defines total amount of datasets fed into the model. The whole dataset cannot be passed into the model at once so datasets are divided into a number of batches. In our model, the batch size was 5 per epoch.

V. Activation function:

The activation function decides the output. This function is used to deactivate some hidden layers taken from the previous layer[13]. Activation functions can be used anywhere in the model. In our model, we used two activation functions ReLu and Sigmoid. ReLu (Rectified Linear unit) takes only positive inputs from the previous layer and passes into the next layer and in other cases it outputs zero. A sigmoid function is used after the dense layer. Sigmoid layer predicts the probability of output that exists between (0,1), since the probability of anything exists between (0,1) so sigmoid is the better choice.

VI. Dropout Rate:

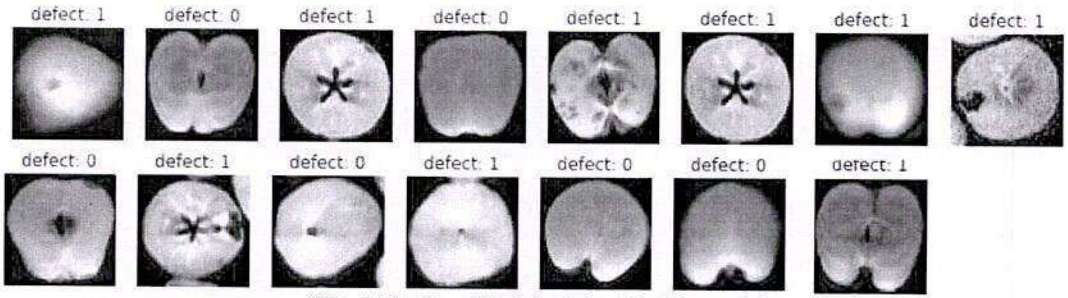
The model will drop out some nodes during the training to fit the model [9], it prevents the model from overfitting. The dropout rate that exists between (0,1), our model dropout rate was 0.5.

CNN model hyperparameters are summarized in Table 3.

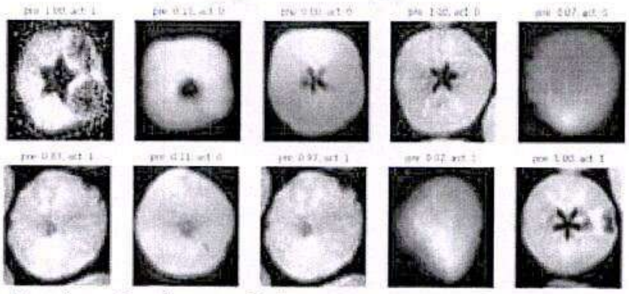
Table 3: Hyperparameters of CNN training model

Hyperparameters	**Value**
Epochs	20
Batch size	5
Activation function	ReLu, Sigmoid
Dropout rate	0.5

Initially, before building CNN model MRI images of healthy and defective apples were numbered as 1(healthy) and 0(defective) as shown in Figure 7. Then the model is built and fruits are classified and we got classification accuracy 67% and images are labeled with the prediction values range from 0 to 1 as shown in Figure 8. The model history is shown in figure 10.



(Fig 7: Fruits with defect=1 and without defect=0)



(Fig 8: predicted results after prediction values ranges from 0 to 1 actual 0 to 1)

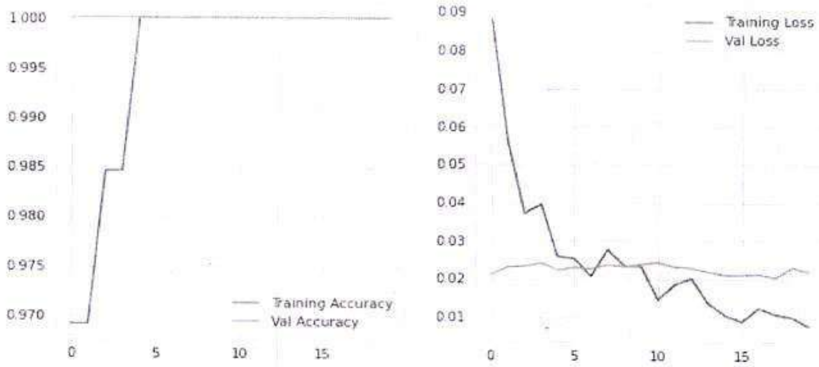


Fig 9: Model history

VII. . Evaluation of performance:

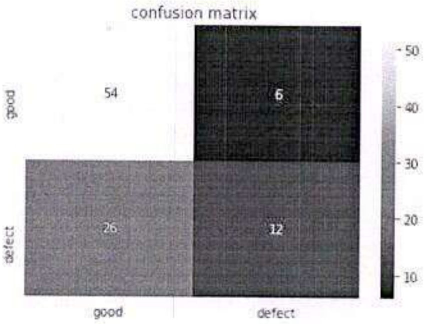
Confusion matrix is a 2 x 2 matrix used to evaluate the model [27] on test data. It consists of 4 different parameters used for the analysis correctly predicted and actual values. Accuracy of confusion matrix denotes the number of samples that are correctly classified. The model is evaluated using confusion matrix and we got 67% accuracy. The meaning of different parameters are confusion matrix is described below:

TP (True Positive) – "No of samples predicted positive and it was true".

TN (True Negative) – "No. of samples predicted negative and it was true".

FP (False Positive) – "No. of samples predicted positive and it was false".

FN (False Negative) – "No. of samples predicted negative and it was false".



$$\text{Accuracy} = \frac{\textit{Total number of images classified}}{\textit{Total number of images used for testing}} \times 100$$

$$\text{Accuracy} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{54+12}{54+6+26+12} = 67\%$$

CONCLUSION AND FUTURE WORK

This entire study was carried out to find the internal quality of apples. A digital image processing technology is used for the classification of defective and good-quality apples. By using CNN methodology, we achieved only 67 percent of test accuracy. The proposed model is limited to only one fruit and datasets gathered are fewer. Further, our aim is to improve the number of datasets and to use different varieties of fruits then to apply different deep learning algorithms to get more percentage of accuracy.

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DESIGN AND DEVELOPMENT OF E-LEARNING SYSTEM USING INTELLIGENT TECHNIQUES

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ABSTRACT

It was created here, an adaptable and intelligent web-based e-learning system. Techniques for more effective e-Learning systems have made substantial progress over the past few years. We describe the main components of an adaptive learning intelligence algorithm meant to fulfill the teacher's objectives and to create a close relationship with the learner, monitoring and adapting the teaching based on a wide variety of evaluations of their knowledge and performance. Future study in this area has the potential to have a substantial impact on education. Educational institutions will benefit from better learning systems developed in collaboration with trainers, teachers, and subject matter experts.

KEYWORDS: Intelligent Techniques, e-Learning,information technology, Development

INTRODUCTION

Today, e-Learning is defined as the use of information technology to facilitate and support learning in the classroom. E-learning can help any business, whether it's a school or another form of establishment, by allowing it to increase its capabilities. For example, an e-learning system can provide access to educational resources 24 hours a day, eliminating the need for expensive group training or at least reducing their duration and increasing effectiveness. Technology has altered the paradigm of education when it comes to using e-learning systems. Corporate trainers are still needed, despite the rise of online learning. Teachers are responsible for overseeing and evaluating the design of online training materials, providing assistance to students, keeping an eye on their progress, and making improvements to the materials depending on feedback from students, performance, and other factors. In addition, in many training circumstances, human interaction is priceless. The consultant's or trainer's role will be enhanced by software agents that can perform additional tasks to assist students, thanks to emerging technologies that incorporate artificial intelligence. As a training aid, e-learning will let staff train more students, faster, and more thoroughly.

LITERATURE REVIEW

SUN DUO, ZHOU CAI YING (2021) Traditional e-Learning systems have a serious problem with personalization. Personal characters in e-Learning are the focus of this study. An intelligent agent-based system for personalizing e-learning has been designed and implemented in the study. The paper introduced the system's structure, workflow, intelligent agent design, and intelligent agent implementation. We discovered that the system could help students take more responsibility for their own learning, allowing them to receive a more personalized knowledge service. Consequently, we came to the conclusion that it might be possible to implement self-learning and self-promotion in the age of lifelong education.

IRAKLIS KATSARIS (2021) Technology and the use of modern equipment have allowed for significant advancements in the field of education. The old adage of "one size fits all" is starting to lose its luster these days. As part of the study, researchers are looking at ways to tailor learning environments to individual students' needs. Learning Styles are commonly used in adaptable platforms to improve the learning experience. Based on a review of 42 publications published between 2015 and 2020, we examine the learner model, adaptability module, and domain module. It is imperative that e-learning systems contain new adaption mechanisms that are compatible with educational ideas. Adaptive E-learning Systems and Learning Styles are the focus of this paper, which seeks to provide an overview of their theoretical and technological foundations. This survey of the literature is intended for those working in this subject as well as those who will be designing and developing adaptive platforms in the future.

TUMAINIKABUDIILIASPAPPASDAG HÅKONOLSEN (2021) Massive advances in artificial intelligence (AI), mobile internet, and cloud computing have all had a profound impact on the way students are educated. Advanced AI-enabled learning systems have emerged in recent years and are gaining popularity due to their capacity to offer educational information and adapt to the particular needs of students. These systems are becoming more and more prevalent. In spite of the fact that these new educational platforms satisfy students' demands, only a small number of them have been put into practice in order to solve the concerns and issues that many students confront. Our study's systematic mapping of the AI-enabled adaptive learning systems literature was done from this perspective. Over the course of 2014 to 2020, 147 research studies were analyzed. AI-enabled learning interventions have been identified, authors associated with major research themes in AI-enabled learning systems have been visualized, and common analytical methods and related techniques used in such learning systems have been reviewed, among other things. This paper's major contributions include these findings. Use this mapping as a reference for future research on how to create AI-enabled educational systems to solve specific educational problems and enhance the learning experiences of students and teachers alike."

XIAORAN FU, K. LOKESH KRISHNA AND R. SABITHA (2021) Teachers and students should expect better educational experiences thanks to AI-aided educational institutions' significant use of an e-learning environment. Higher education in China is heavily influenced by e-learning or online learning. There is a challenge in China's higher education to utilize e-learning to improve course resources, student learning type prediction, teaching quality, and customer service. Because of this, a framework based on artificial intelligence (AI-EELF) has been presented in this research to help China's higher education overcome obstacles associated with deploying e-learning modules. An adaptive learning environment makes effective use of the data collected by students. Using the AI-EELF technique, a variety of learning models are introduced to help teachers be more effective and better predicts how their students will learn. Research shows that the AI-EELF can accurately predict students' learning styles and increase the quality of their education compared to other techniques.

S. BHASKARAN & RAJA MARAPPAN (2021) Data mining relies heavily on decision-making systems. The subject of data mining has evolved into one in which the interactions, decision-making processes, and overall experience of users must be utilized. In contrast to the traditional head-to-head approach of educating with culture, e-learning is now a progressive way to deliver long-term online education. The number of people benefiting from various programmers is growing steadily thanks to the growth of e-learning. In spite of this, the wide range of pupils on the internet brings additional challenges to the conservative one estimate fits all learning systems, which provide a single set of learning resources to all learners. It takes longer to process queries and provides less accuracy in the final recommendation for well-known recommender systems that have these issues. A new transductive support vector machine-based hybrid personalized hybrid recommender for machine learning public data sets is the primary goal of this project. It is via the habits of the students that the learning experience has been attained. Some of the novel tactics that are being tested to increase the performance of a hybrid recommender are outlined in this research. The learner dataset will be preprocessed using a modified one-source denoising technique. Performance measures will be improved by modifying the anarchic society optimization technique. For mining the sequential pattern of learners, an improved and generalized technique based on sequential pattern analysis is proposed. These habits and interests will be evaluated using an improved transductive support vector machine. Learners' confidentiality rates are being analyzed by these new tactics, which then make recommendations based on the results of the analysis. In order to test the suggested generalized model, it is used to mimic public datasets for machine learning such as movie and music data as well as food and commerce data. The results of the experiment show that the enhanced clustering approach discovers clusters of random size. In terms of projected absolute error, accuracy, ranking score, recall, and precision metrics, the recommended recommendation strategies outperform the current methods by a wide margin. The proposed datasets have an accuracy range of 82% to 98%. A range of 5 to 19.2 percent is seen in the MAE statistic for public datasets that have been simulated. Experimentation has shown that the recommended algorithm has a lot to offer in terms of quality and performance.

METHODOLOGY

INTELLIGENT ALGORITHM

The study makes use of rule-based association mining and group-based filtering. Two phases make to an intelligent algorithm:

Step1: Using a rule-based system to find relevant training resources for users in a variety of areas.

Step2: Making use of a group-based filtering algorithm to direct users to relevant teaching resources. The algorithm for association rules mining consists of three phases:

Step1: The process of frequently producing item sets As long as the item-appearance set's frequency falls below min sup; it's considered a frequent item-set in this context.

Step2: All non-spatial subsets are generated for each common item set l.

Step3:if a non-spatial subset of the frequent item-set l is considered, then

$$\frac{\sup port\_count(l)}{\sup port\_count(s)} \geq \min\_conf$$

Once that is done, the s=>(l-s) rule is created. A transaction's support count(l) and support count(s) denote the number of transactions that contain item sets l and s, respectively, with min conf representing the minimal confidence thresholds.

It is possible to categories teaching resources into various subcategories. Then this information is then used to develop associations through the use of an algorithm known as a "association mining algorithm. The category of educational resources is located on the rules' left side. In addition, the regulations are categorized and chosen. The category for proposing educational materials should be provided by the useful guidelines. S1-Sn is an example of an association rule recommendation that yields a set of N categories. Recommendation categories are represented by S = S1, S2, S3, Sn Category Sn's instructional resources may be found in N(Sn).

DATA ANALYSIS

Listed below is a diagram of the collaborative filtering algorithm

Step1: Representation. A user-item evaluating matrix (mn) is one possible interpretation of the alleged input data. R. m is the total number of users, and n is the total number of items. Appraisal value is linked to the content because Ri,j is the value that a user assigns to a jth item. The appraisal value shows whether or not the item is a teaching resource in an E-learning environment. If the user selects resources, the number 1 indicates that the user has done so, whereas zero indicates that the user has not selected resources.

Step2: It's time to look for a nearby neighboring set A neighbor set N1,N2,N3,Ns is formed and organized according to the degree of similarity between a user U and its neighbors. Even if U doesn't fall into one of the 'N1, N2, N3, Ns' categories, it is nevertheless sorted according to SIM (U, Ns).

Step3: Developing a suggestion. Thereafter, interest levels for items and their top-N neighbors are computed. Assuming user a and option set Ia, we may apply formula 2 to determine the degree of interest in item j.

$$p_{a,j} = r_a + \frac{\sum_{u=1}^{n} w_{a,u}\left(r_{u,j} - r_u\right)}{\sum_{u=1}^{n}\left|w_{a,u}\right|}$$

Among them are: Rarely represents the average value that a user assigns to a given object, and U is the collection of items that are closest to it. WjI's user-to-user similarity, Item j's evaluation value is given by the user u. The average appraised worth of an item as determined by a user u is represented by Ru. For each item, the user i's interest level is calculated individually. We use N items as a suggestion set since they have a higher interest degree than the item itself but do not belong to it. Top-N.

The collaborative recommendation is used after the association rules are used to identify the categories of interest. We employ the collaborative recommendation in N for eachSnS. (Sn). Supposedly, teaching resources for eachSn,Q should be considered. If you're looking for a set of recommendations, you'll find them here: Each commodity's interest rate is P(It1), P(It2), P(It3), P simultaneously (Itq).

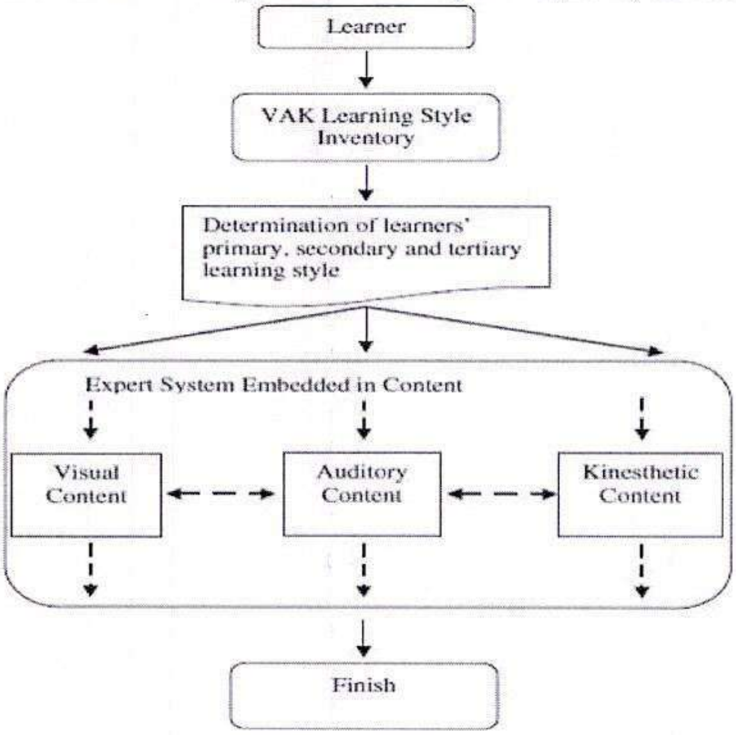
Using this approach, we propose the following resources. The category weighting approach is used to recommend products because the user has varying levels of interest in each category. It's the user's interest weight for each category n S based on P(It,j) (t=1,2,3,...,t j=1,2,3,...q) Confidence is used to determine interest weight. Association rules are used to determine a person's level of confidence.

$$F_{t,j} = w(S_n)p(I_{t,j})$$

The size of Ft,,j (t=1,2…t, j=1,2…q) is taken as the recommendation.

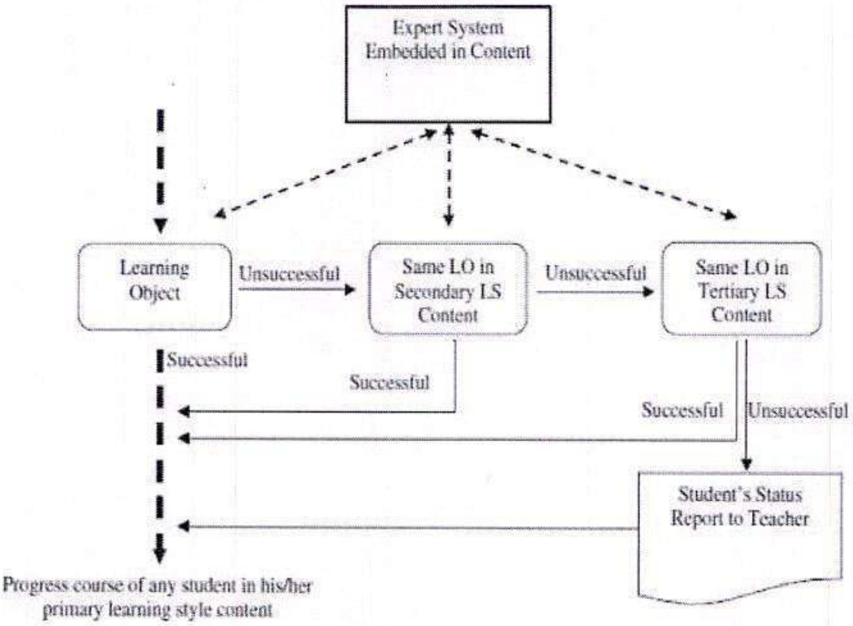
This section provides an overview of the general architecture of an intelligent algorithm. Algorithm is an adaptable and intelligent e-learning environment where content is given with expert system support and is personalized based on VAK learning style. Students and teachers must sign up and connect in to the system in order to use the clever algorithm in a classroom setting. As a result, both teachers and students must first sign up for the system. There are links on the main page for teachers and students to sign up for the course. The administrator of the system verifies teacher registrations. Once their registration has been verified, teachers can access the system with their assigned usernames and passwords. Students who want to enroll in this programmed must first pick the schools and teachers they would like to work with. Students' registration information is automatically shown on the teacher's page when they submit it correctly. In order to verify, arrange, or delete a student's registration, each teacher has access to their own class's learner list. Students who haven't had their registrations confirmed by the teacher yet aren't able to log in. These students are notified that their registration is pending the approval of their instructor. In order for a student to take the VAK learning style assessment, the teacher must first validate their registration. Gokdag developed the VAK learning style measure that is embedded within the site (2004). The researcher conducted all of the studies on this scale. The learner's primary, secondary, and tertiary learning styles, as determined by the learner's first login to the system and as measured by the scale, are automatically calculated and stored in the system's database. This is a one-time event that determines the learning styles of the students. Learning styles of students who have completed a learning style inventory are immediately routed to the material most appropriate to their styles. As a result of this advice, each student follows a specific order when completing the LOs associated with their preferred learning method. These students are making progress in their primary learning style thanks to an expert system hidden within the text. The system now has complete control over any learner who is developing in their primary learning style. With the help of experts, any learner who is taking the content of primary learning style receives the essential suggestions and solution supports that are relevant to their main learning style in all LOs in the content. A learner's performance is the only factor that affects the presentation of these hints and intelligent solution assists. For example, students of the same learning type may receive varied recommendations and intelligent solution support depending on their performance. Los was designed using an expert system on an intelligent algorithmic learning site. In LOs, an expert system checks to see if any learners have achieved the "adaptability point."

At this stage of adaptability, the expert system makes a judgement on the learner. Learners can choose to be redirected to their primary learning style or their secondary learning type for this decision. When a learner completes a current learning objective, they are guided to the next learning objective in their primary learning style. If a learner fails to complete the current LO and reaches this point, the learner is redirected to the identical LO in the secondary learning style. Secondary-style learners who are given the same lesson plan understand that there are many different approaches to solving difficulties and completing the LO. For those students who have finished their secondary learning objectives, they can proceed to the main learning objectives that follow. The same approach is applied to learning failures in secondary and tertiary styles of learning. A student who completes a LO in this manner is returned to the previous LO in their primary learning style and is given the opportunity to complete the remainder of the course. The teacher receives a report about a student who is failing in a tertiary learning method as well. When a student's case is brought to the attention of the teacher, the primary learning style is resumed for that student. As a result, students may be able to access various content based on their performance on this site. Below is a diagram of the browsing and adaptability architecture,

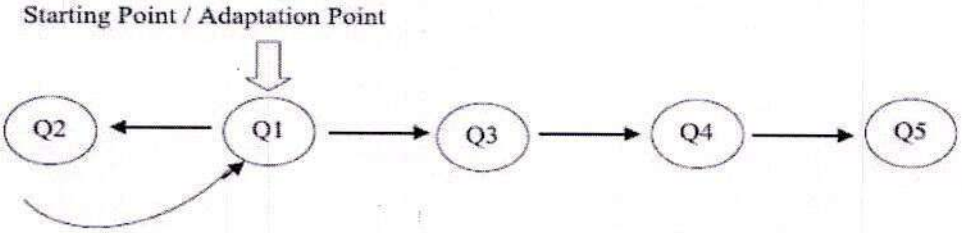

Learner
VAK Learning Style Inventory
Determination of learners' primary, secondary and tertiary learning style
Expert System Embedded in Content
Visual Content
Auditory Content
Kinesthetic Content
Finish

E-learning system content based on an intelligent algorithm was selected at random and two LOs were presented as examples. The sample LO that was chosen for this article is described in detail below.

LO_6: One of the LOs designed for permutation subject
LO_45: One of the LOs designed for probability subject


Expert System Embedded in Content
Learning Object
Unsuccessful
Same LO in Secondary LS Content
Unsuccessful
Same LO in Tertiary LS Content
Successful
Successful
Successful
Unsuccessful
Student's Status Report to Teacher
Progress course of any student in his/her primary learning style content

Schematic view of browsing support between contents of primary/secondary/tertiary learningstyles


Starting Point / Adaptation Point
Q2
Q1
Q3
Q4
Q5

Scenario prepared for Activity_6 and presentation plan of questions within the activity

This is a permutation-related learning object. The scenario for LO 6 and the content of LO are depicted in the figure on the right above. This LO's content is divided into five separate questions. The first question in the LO is answered by the learner. An answer of "yes" indicates that the learner is ready for Question 3. The learner who properly answers the third question is then directed to the following question using the same logic. Learning Objectives (LO) can be completed by properly answering the third, fourth, and fifth questions of the test. Intelligent solution supports will be provided to students who are unable to answer the third, fourth, and fifth questions correctly. Depending on the student's response to the second question, he or she will receive assistance and advice on how to solve the problem. The second question's tips and solution support shows the learner how to tackle the difficulty. The student who successfully answers this question is returned to the first question. The LO's "adaptability point" was the first question that was asked. At this point, the student must return to the initial question and re-answer it. If the student answers the question properly this time, the ",,adaptivity point" determines whether or not the LO was successfully completed. There, the learner is tasked with answering LO-related questions. Learner's inability to answer the first question correctly is determined by the "adaptivity point" if it occurs again. Consequently, the student will be directed.

CONCLUSION

The paper proposes a new intelligent algorithm based on association rule mining and collaborative filtering. Personalized e-learning is another area where the algorithm is being used. Data shows that algorithm can provide greater support for online learning.

Architecture of intelligent algorithm based e-learning system.

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ORIGINAL RESEARCH

Fungi affected fruit leaf disease classification using deep CNN architecture

Sukanya S. Gaikwad[1] · Shivanand S. Rumma[1] · Mallikarjun Hangarge[2]

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Abstract The paper aims to classify fruit leaf—disease pair using deep convolution neural network (CNN) architecture. We have considered three fruits leaves i.e., Apple, Custard apple and Guava which are the prime crops of our region i.e., Hyderabad and Karnataka (H&K) region of Karnataka, India. As far as authors are aware, there is no work carried out on fungi classification of leaf diseases. Hence we have collected the dataset from real time environment, with total of 14,181 images with 10 assigned class labels. Three different versions of dataset i.e., color, black and white and gray images are used for experimentation. These dataset are trained on two CNN models of AlexNet and SqueezeNet, on the same hyper-parameters. It is observed from the experiments conducted that both models have got almost the same recognition accuracy of 86.8% and 86.6% on color images respectively, which signifies that color images are effective for classification. And in order to realize the full potentiality of the proposed idea of working on different variation of dataset, our experimental findings are the new improvements in fungi classification.

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Keywords Fruit leaf disease · Fungi affected · CNN · AlexNet · SqueezeNet

1 Introduction

India is an agriculture country, where most of the population depends on agriculture. It has been a major source of economic growth. India has varied temperature, soil and land. So based on these parameters and the economic value, the farmers chooses the crop or fruits for sowing. Fruits play a major role in human life, where they help to nourish the human body and provide the essential nutrients. In this era, due to the increase in population, the demand of vegetables and fruits increases every day. To meet this demand, there is a need to introduce modern technology in the agriculture field.

In the recent years, developing a reliable technology for agriculture monitoring is been a difficult task. As there is a need to continuous monitor the plant and take precautions immediately so that it should not spread to the other parts of the plant and the neighboring plant. Several studies including, computer vision, pattern recognition, machine learning and deep learning have lead to improve the identification and recognition of these leaf diseases.

Fruit leaf diseases are the major threat to the plant. As they try to extract the nutrients from the host plant instead of supplying to the plant. Among the many diseases causing agents like bacteria, algae, insects, birds etc., fungi pathogens causes the major diseases in plants. As far as authors are aware, there is no work carried out on fungi classification of leaf diseases. However, little similar works have been reported in literature. But in order to realize the full potentiality, our experimental findings are the new supplements to the research carried out in fungi

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classification. Hence in this paper we aim to identify and classify the fungi affected diseases of fruit plants.

For our study we have included Apple (Malus domestica) plant, Custard apple (Annona squamosa) plant and Guava (Psidium guajava) plant, which are the prime crops of our H&K region. The apple leaf images were collected from the publically available dataset from plant pathology. The Custard apple and Guava leaf images were collected from the nearby farm of Kalaburagi District of Karnataka, India. The dataset consists of 10 different classes with total of 14,181 images of diseased and healthy leaves, which are used for experiment. The focus is been on collecting the real time environment images as there is already a lot of work done on publically available dataset [1].

In this work we use deep learning architectures such as AlexNet [2] and SqueezeNet [3] for identifying and classifying the fungi affected leaf diseases. We have used three different versions of the image dataset i.e., color, black and white and gray images. By experimenting on these different versions of dataset, will let us know whether the color and background plays a role in identifying the disease in the image or not. The images are collected from real time environment, where background of the image is not controlled much.

Our contribution in this work as follows:

- We aim to classify 3 different species, 10 different fruit leaf-disease pair using deep learning architecture i.e., using AlexNet and SqueezeNet model.
- We aim to eliminate the preprocessing step which reduces the time complexity of the models.
- When a new image is given to the model, the system predicts the correct crop-disease pair.
- We try to analyze the difference between color, black and white and gray images, and note down which version of dataset performs better for disease identification.
- Agriculture is the backbone of our country and our focus is on working on prime crops of our H&K region. This in turn will support to maximize the yield by identifying the disease at the early stage.

The rest of the paper is organized as Sect. 2 describes the literature survey, Sect. 3 the description of the dataset, Sect. 4 narrates the proposed model, Sect. 5 gives the experimental results, Sect. 6 describes the discussions, Sect. 7 gives the Conclusions and lastly the Sect. 8 gives the future scope of the research.

2 Literature survey

Table 1 show the work carried out by different authors on leaf disease identification. The authors in [24–28] have implemented the different CNN models only on Color images, but we have experimented on gray scale and black and white images to find out the significance of Color images. From the experiment conducted it is found that color images are effective. It also signifies that capturing images in day light is effective as compared to the other time.

The authors have used images which are already preprocessed, meaning the background of the images is eliminated and focus is only on leaf of the image. In our experiment we have eliminated this step, as images are directly given for feature extraction and classification, which reduces the time and space complexity of our model. And also the current need of an hour is to work on real environment images.

Hence, we have worked on our own collected new dataset of Guava and Custard apple plant, which are the prime crops of our region i.e., Hyderabad and Karnataka (H&K) region.

3 Preparation of dataset

A proper dataset is required to analyze the performance of the deep learning models. We have used 3 different dataset, the apple dataset is obtained from plant pathology which is an open source and it is available at below site [29] and the custard apple & guava dataset is our own collected brand new dataset. This is not yet publically available. Below we describe each dataset of apple, custard apple and guava plant.

3.1 Apple dataset

The apple dataset is collected from plant pathology site, which is a publically available dataset. It consists of 9395 images of diseased and healthy leaf. The most commonly caused fungi affected disease of apple plant are apple scab caused by Venturia inequality, apple rust caused by Gymnosporangium juniper-Virginiana, apple black rot caused by Botryosphaeria obtuse. Total of three diseased and one healthy category of leaf are used for classification. The overview of apple dataset is given below in Table 2.

3.2 Custard apple

The dataset is collected from nearby farm of Kalaburagi district of Karnataka, India. The images are collected in real environment and consist of two different categories of

Table 1 Survey of leaf disease identification using deep learning

Sl. no	Authors	Dataset used	Method used	Class labels	Obtained accuracy
1	Zhang et al. [4]	Maize leaves collected from different sites like Plant village, Google websites	GoogLeNet model & Cifar 10 model	9 different class labels	98.8% using GoogLeNet and 98.9% using Cifar 10 model
2	Mohanty et al. [5]	Plant Village dataset	AlexNet model & GoogleNet model	38 different class labels	85.53% using AlexNet and 99.34% using GoogLeNet model
3	Durmuş et al. [6]	Plant Village dataset of only Tomato plant	AlexNet model & SqueezeNet model	10 different class labels	95.6% using AlexNet and 94.3% using SqueezeNet model
4	Arivazhagan et al. [7]	Collected their own dataset of Mango plant	CNN model	6 different class labels	96.67% using CNN model
5	Sun et al. [8]	Collected their own dataset of Tea plant	CNN model and Support Vector Machine (SVM)	7 different class labels	93.75% using CNN model, 89.36% using SVM and 87.69% using BP
6	Howlader et al. [9]	Collected their own dataset of Guava plant	Deep-CNN model	4 different class labels	98.74% using D-CNN model
7	Gaikwad et al. [10]	Plant pathology dataset of Apple plant	CNN model	4 different class labels	88.9% using CNN model
8	Sardogan et al. [11]	Dataset of Tomato plant	CNN model with Linear Vector Quantization (LVQ) algorithm	5 different class labels	86% using CNN with LVQ algorithm
9	Sholihati et al. [12]	Collected their own dataset of Potato plant and also from Plant Village and Google	Visual Geometry Group (VGG) 16 AND VGG 19	5 different class labels	91% using VGG 16and 90% using VGG 19
10	Rangarajan et al. [13]	Plant Village dataset of only Tomato plant	AlexNet model and VGG 16	7 different class labels	97.49% using AlexNet and 97.29% using VGG 16
11	Kulkarni [14]	Plant village dataset	Inception V3 and MobileNet	5 different class label	99.62 using MobileNet and 99.74% using Inception V3
12	Zhong et al. [15]	AI Challenger-Plant-Disease-Recognition	DenseNet-121, three methods of regression, multi-label classification and focus loss function	6 different class label	93.51% using DenseNet-121, 93.31% using Regression and 93.71% using Focus loss function
13	Kumar et al. [16],	Plant village dataset	Exponential Spider Monkey Optimization (ESMO)	38 different class labels	92.12% using ESMO technique
14	Chen et al. [17]	Collected own dataset of Tea leaf diseases	LeafNet algorithm	7 different class labels	90.16% using LeafNet algorithm
15	Liu Bin et al. [18]	Collected own dataset of grape leaf diseases	Dense Inception Convolutional Neural Network (DICNN)	6 different class label	97.22% using DICNN
16	Deeba et al. [19],	Plant village dataset of tomato, corn, potato and also collected their own dataset of chilli and brinjal	LeNet, AlexNet, VGG16, VGG19, and ResNets	5 different class label	Overall predicted performance of 98% is obtained
17	Hu et al. [20]	Collected own dataset of tea leaves	Canadian Institute For Advanced Research (CIFAR 10) quick model	4 different class label	92.5% using CIFAR10 quick model
18	Pushpa et al. [21]	Plant village dataset	VGG16, LeNet-5 & proposed AlexNet	10 different class label	96.76% using proposed AlexNet
19	Hasan et al. [22]	Collected images from local farm and internet	Inception model of Google	3 different class label	99% using the inception model
20	Ozguven et al. [23]	Collected own dataset of sugar beet leaf	Faster R(Recurrent)-CNN	4 different class label	95.48% using faster R-CNN

leaves i.e., Leaf spot and another category is of the healthy leaf of custard apple plant. A mobile camera is used to capture the images, which has a resolution of 12 Megapixel. A total of 1047 images are used for classifying the leaves. The overview of Custard apple dataset is given below in Table 3.

3.3 Guava

The dataset is collected from real time environment. It is collected from the nearby farm of Kalaburagi district of Karnataka, India. A total of 3966 images are used for classifying the leaves. The fungi affected leaves of guava are Pseudocercospora leaf spot caused by Pseudocercospora psidii fungi, Rust caused by fungi Puccinia psidii, Insect eaten caused by insect-eating of the leaves. And another category is of healthy leaf. The overview of the Guava dataset is given in Table 4.

Below Fig. 1 shows the sample images of the dataset, from which it is clearly visible that images are not preprocessed.

4 Proposed method

Deep learning is a sub filed of Artificial Intelligence, which works as human brain's neuron works. The basic building block of Deep learning architecture is perceptron which are also called as nodes. Thousands of nodes interconnect to form the deep architecture of Convolution Neural Network. There are different types of CNN architecture based on the various problem domain, most of which are related to computer vision and pattern recognition. Among the different architectures, for our problem we have used AlexNet and SqueezeNet architecture for evaluating the performance of the dataset.

Table 2 Overview of Apple dataset

Name	Total images	Training images	Testing images
Healthy	4576	3661	915
Apple Scab	2252	1802	450
Apple Rust	544	436	108
Apple Black Rot	2023	1667	356
Total	9395	7566	1829

Table 3 Overview of Custard apple dataset

Name	Total images	Training images	Testing images
Healthy	635	509	126
Leaf spot	412	330	82
Total	1047	839	208

4.1 AlexNet

It is the first known modern CNN, which won the Imagenet large-scale visual recognition challenge in the year 2012. It used ReLu (Rectified Linear Unit) activation function for better performance. It has 60 Million learnable parameters and Dropout layer is introduced to avoid the over-fitting of the dataset.

4.2 SqueezeNet

It is similar to the AlexNet model but has lesser parameters of about 1.25 Million. It considered usage of 1 × 1 filters instead of 3 × 3 filters. The input channels were decreased and large activations functions are introduced to focus more on the important feature maps. Its size is compressed so that it should fit on applications like mobile devices such as handheld computer, smart phones, laptops etc.

Below Figs. 2 and 3 shows AlexNet and SqueezeNet architectures respectively.

Using these architectures we try to experiment with three different versions of the dataset i.e., color, black and white and gray images. Novelty of our proposed method is to perform experiment on these dataset, to check which version of images gives the best results. We also get to know whether the background of the images plays a role in identifying the diseases of the leaves. Below Fig. 4 shows some sample images of black and white Fig. 4a–e and gray images Fig. 4f–j of the dataset.

5 Experimental results

In this section, we evaluate the experimental results of basic Deep Learning models which are AlexNet and SqueezeNet. The dataset consists of 14,181 images. The

Table 4 Overview of Guava dataset

Name	Total images	Training images	Testing images
Healthy	2056	1645	411
Insect eaten	323	258	65
Leaf spot	727	582	145
Rust	860	688	172
Total	3966	3173	793

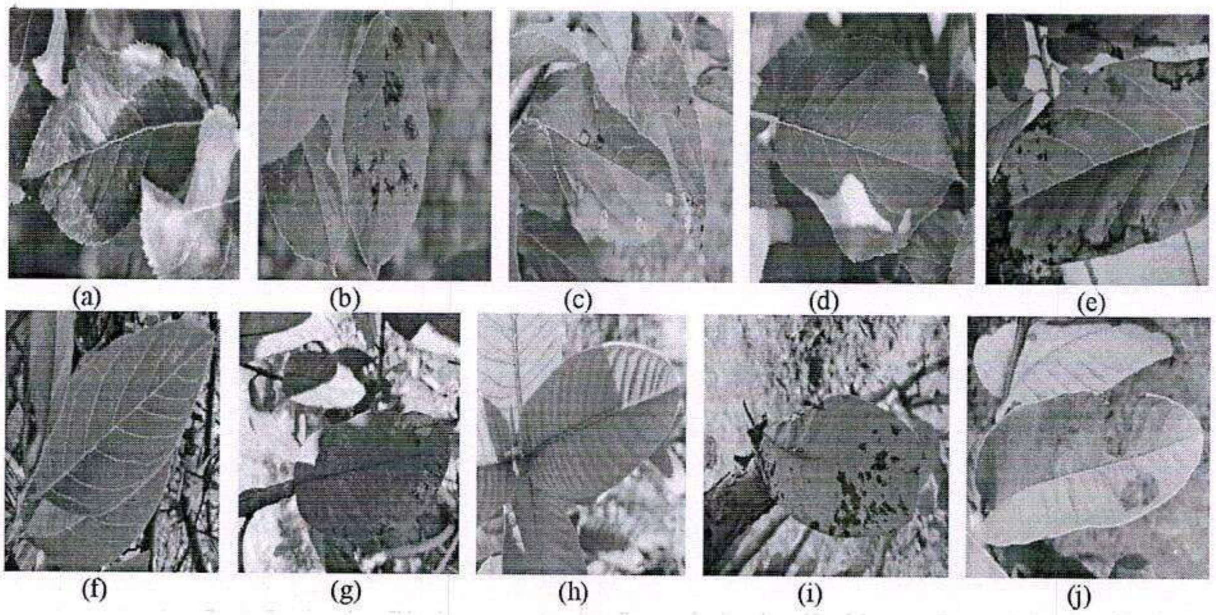

Fig. 1 **a** Apple—scab, **b** apple—black rot, **c** apple—rust, **d** apple—healthy, **e** custard apple—leaf spot, **f** custard apple—healthy, **g** guava—pseudocercospora leaf spot, **h** guava-healthy leaf, **i** guava—rust, **j** guava—insect eaten

experiment conducted divides the dataset into 80:20 split where 80% of the dataset we use for training and the remaining dataset, i.e. 20%, is used for testing purposes. Below Table 5 shows the hyper parameters which are kept same for both the models, to know which model performs the best.

Below Tables 6, 7 and 8 shows the class wise recognition accuracy of AlexNet model for color, black & white and gray images.

Below Tables 9, 10, 11 shows the class wise recognition accuracy of SqueezeNet model for color, black and white and gray images respectively.

Below Tables 12 and 13 shows the Confusion matrix for AlexNet and SqueezeNet model for color images.

The below graph Figs. 5 and 6 shows the accuracy obtained for training and validation data using the AlexNet and SqueezeNet model for color images respectively.

Below Table 14 shows the comparative analysis of AlexNet and SqueezeNet model.

5.1 Performance metrics

The evaluavtion of the models is done by using the performance metrics. These metrics include mean precision, mean recall and F1 score. They tell us about how efficiently our model performs on the given dataset. It is calculated for both AlexNet and SqueezeNet model for all the three different versions of dataset, which is shown in below Table 15.

It is evident from Tables 14 and 15 that both models have performed better on color images as compared to black and white and gray images. By these experiments we could note that, color plays an important role in identifying the leaves diseases. It is not necessary to monitor the plants day and night, as while capturing the images at night will lead the images to appear either gray or black and white. It clearly indicates that taking images in day light gives the good recognition accuracy in identifying the diseases.

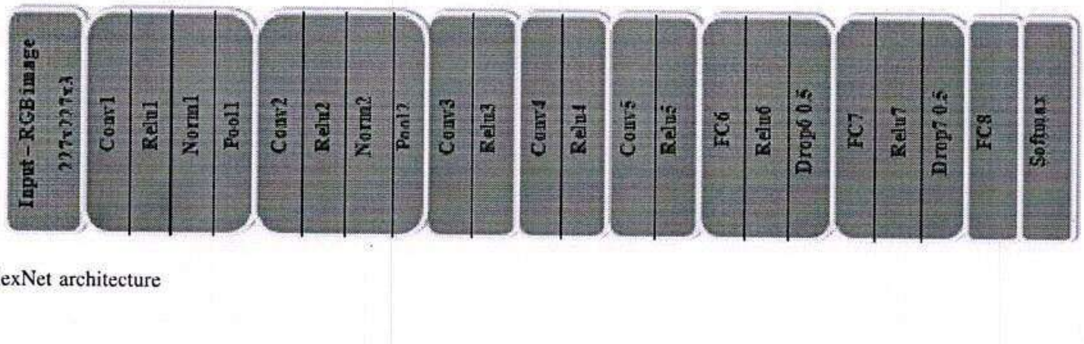

Fig. 2 AlexNet architecture

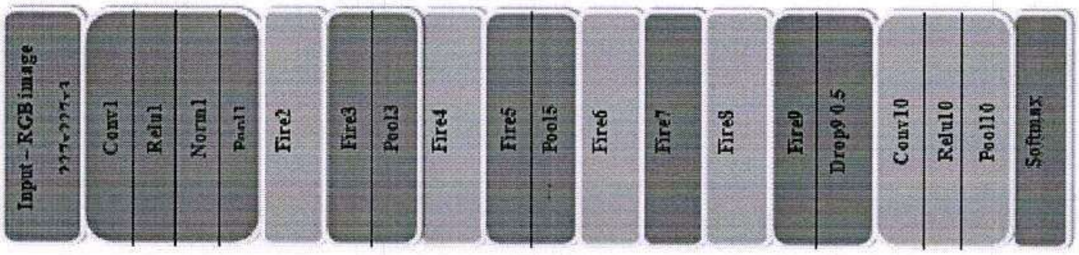
Input - RGB image
227x227x3
Conv1
Relu1
Norm1
Pool1
Fire2
Fire3
Pool3
Fire4
Fire5
Pool5
Fire6
Fire7
Fire8
Fire9
Drop9 0.5
Conv10
Relu10
Pool10
Softmax

Fig. 3 SqueezeNet architecture

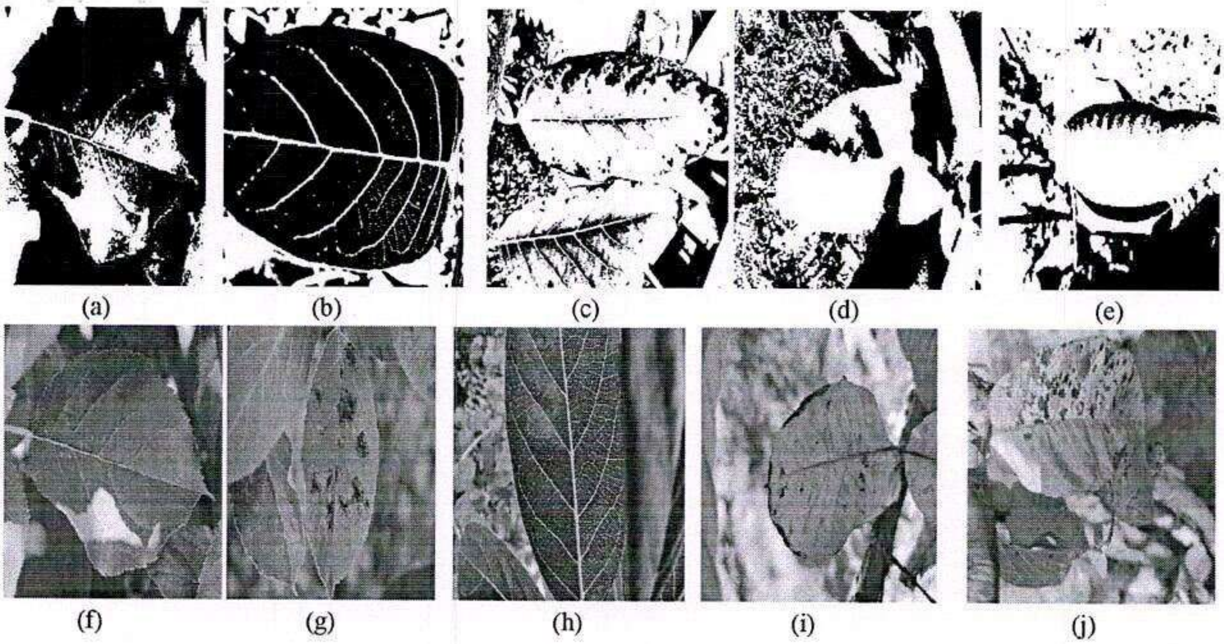
(a)
(b)
(c)
(d)
(e)
(f)
(g)
(h)
(i)
(j)

Fig. 4 **a** Apple—healthy, **b** custard apple—healthy, **c** custard apple—leaf spot, **d** guava—insect eaten, **e** guava—healthy, **f** apple—healthy, **g** apple—scab, **h** custard apple—healthy, **i** guava—leaf spot, **j** guava—rust

The collected images are real time environment images and both models AlexNet and SqueezeNet gave good recognition accuracy of 86.85% and 86.56% respectively.

Table 5 Hyper parameter tuning

Sl. No	Name of the parameter	Parameter
1	Solver type	Adam optimizer
2	Base learning rate	0.0001
3	Batch size	64
4	Epochs	25
5	Training data	80%
6	Testing data	20%

Table 6 Class wise recognition accuracy of AlexNet for color images

sl. no	Class name	Accuracy in %
1	Aple healthy	**98.9**
2	Apple scab	90.1
3	Apple black rot	91.5
4	Apple rust	89.9
5	Custard apple healthy	96.1
6	Custard apple leaf spot	88
7	Guava healthy	86.6
8	Guava insect eaten	44.6
9	Guava rust	75.1
10	Guava leaf spot	26.2%

Bold value is the highest value among the obtained results

Table 7 Class wise recognition accuracy of AlexNet for black and white images

Sl. No	Class name	Accuracy in %
1	Apple healthy	**87.3**
2	Apple scab	64.7
3	Apple black rot	49.9
4	Apple rust	10
5	Custard apple healthy	72.2
6	Custard apple leaf spot	62.8
7	Guava healthy	79.3
8	Guava insect eaten	3.5
9	Guava rust	34.8
10	Guava leaf spot	9.8

Bold value is the highest value among the obtained results

Table 8 Class wise recognition accuracy of AlexNet for Gray images

Sl. no	Class name	Accuracy in %
1	Apple healthy	**91**
2	Apple scab	87.6
3	Apple black rot	72
4	Apple rust	22
5	Custard apple healthy	87
6	Custard apple leaf spot	59.9
7	Guava healthy	83.5
8	Guava insect eaten	12.3
9	Guava rust	65.3
10	Guava leaf spot	17.2

Bold value is the highest value among the obtained results

6 Discussions

Convolution Neural Networks have made a tremendous progress in computer vision and pattern recognition. Using the deep CNN architecture, we have trained two models i.e. AlexNet and SqueezeNet with a goal to identify the correct leaf disease pair. The collected real time dataset consists of 14,181 images. The models are trained on the same hyper-parameters, so that we could evaluate which factors affect the accuracy of the model. Below we list the observations observed from the experiment carried out.

- Among the experiment conducted on color, black and white and gray images, color images gave good recognition accuracy.
- It shows that color plays an important role in identifying the diseases of the plant.
- From the experiments conducted it is noted that the monitoring of the images done at day time is effective as the diseases are visible properly.

Table 9 Class wise recognition accuracy of SqueezeNet for color images

Sl. No	Class name	Accuracy in %
1	Apple healthy	**95.5**
2	Apple scab	90.9
3	Apple black rot	87.4
4	Apple rust	84.4
5	Custard apple healthy	95.3
6	Custard apple leaf spot	88
7	Guava healthy	84.2
8	Guava insect eaten	56.9
9	Guava rust	76.7
10	Guava leaf spot	39.3

Bold value is the highest value among the obtained results

Table 10 Class wise recognition accuracy of SqueezeNet for black and white images

Sl. no	Class name	Accuracy in %
1	Apple healthy	85
2	Apple scab	74.7
3	Apple black rot	65.8
4	Apple rust	14.7
5	Custard apple healthy	**93**
6	Custard apple leaf spot	52.6
7	Guava healthy	76.6
8	Guava insect eaten	10.8
9	Guava rust	30.1
10	Guava leaf spot	16.8

Bold value is the highest value among the obtained results

Table 11 Class wise recognition accuracy of SqueezeNet for gray images

Sl. no	Class name	Accuracy in %
1	Apple healthy	93.8
2	Apple scab	83.6
3	Apple black rot	84.9
4	Apple rust	36.7
5	Custard apple healthy	**98.3**
6	Custard apple leaf spot	80.8
7	Guava healthy	89.5
8	Guava insect eaten	30.8
9	Guava rust	72.8
10	Guava leaf spot	26.9

Bold value is the highest value among the obtained results

Table 12 Confusion matrix for AlexNet

	Apple				Custard_Apple		Guava			
	Rot	Rust	Scab	Healthy	Healthy	Leaf spot	Healthy	Insect eaten	Leaf spot	Rust
A_rot	**204**	8	2	9	0	0	0	0	0	0
A_rust	17	**186**	1	3	0	0	0	0	0	0
A_ scab	4	1	**265**	24	0	0	0	0	0	0
A_healthy	0	4	5	**802**	0	0	0	0	0	0
C_healthy	0	0	0	0	**122**	4	0	0	0	0
C_leaf spot	0	0	0	0	8	**73**	0	0	0	0
G_healthy	0	0	0	0	6	4	**356**	19	14	11
G_insect	0	0	0	0	1	0	18	**29**	6	11
G_leaf spot	0	0	0	0	1	2	43	19	**38**	42
G_rust	0	0	0	0	0	2	19	4	18	**130**
Accuracy in %										**86.8%**

Bold value is the highest value among the obtained results

Table 13 Confusion matrix for SqueezeNet

	Apple				Custard_Apple		Guava			
	Rot	Rust	Scab	Healthy	Healthy	Leaf spot	Healthy	Insect eaten	Leaf spot	Rust
A_rot	**312**	37	6	2	0	0	0	0	0	0
A_rust	12	**92**	3	2	0	0	0	0	0	0
A_ scab	12	6	**410**	23	0	0	0	0	0	0
A_healthy	4	16	21	**874**	0	0	0	0	0	0
C_healthy	0	0	0	1	**121**	3	2	0	0	0
C_leaf spot	0	0	1	1	6	**73**	0	0	0	0
G_healthy	0	0	0	0	6	4	**346**	18	29	17
G_insect e	0	0	0	0	1	0	16	**37**	7	5
G_leaf spot	0	0	0	0	1	2	30	22	**57**	34
G_rust	0	0	0	0	0	2	10	8	20	**132**
Accuracy in %										**86.6%**

Bold value is the highest value among the obtained results

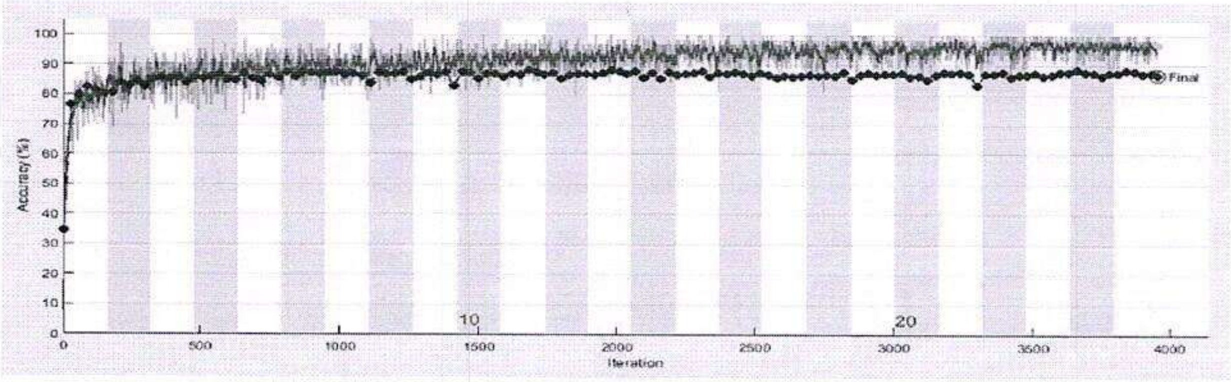

Fig. 5 Accuracy for training (blue line) and validation data (black line) for AlexNet

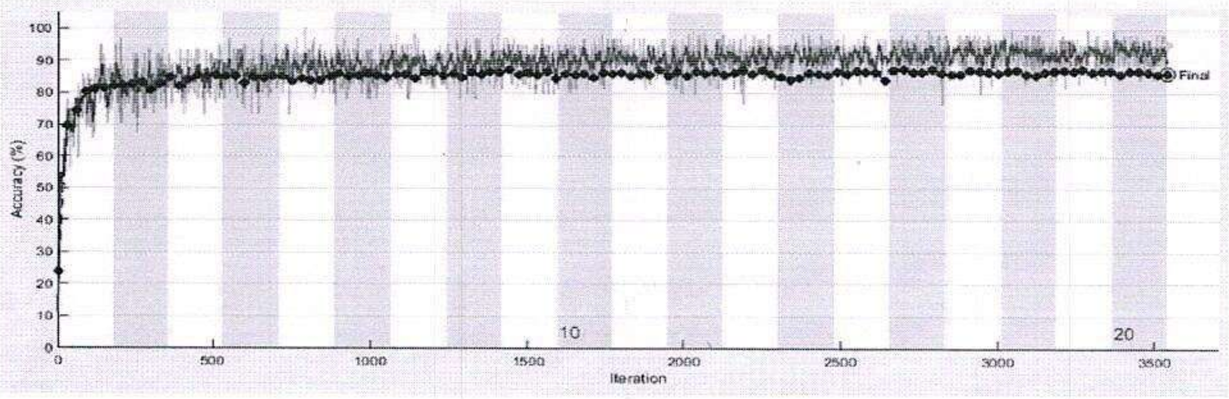

Fig. 6 Accuracy for training (blue line) and validation data (black line) for SqueezeNet

Table 14 Comparative analysis of models

Sl. no	Model	Dataset type	Accuracy in %
1	AlexNet	Color	**86.85**
		Black and White	64.3
		Gray	76.16
2	SqueezeNet	Color	**86.56**
		Black and White	67.8
		Gray	81.8

Bold value is the highest value among the obtained results

- The models perform well when the images are preprocessed. Where the background of the image is removed.
- The models perform well when we have more training images, as it will be able to recognize the disease from all angles.
- More images gives better recognition accuracy but it takes time to train the images when working on CPU.
- Experiments are conducted on real time environment images, which is the need of an hour. But the processed images gives better results due to noise removal, image enhancement etc.

7 Conclusion

The paper aims to identify and classify 10 different fruit leaf- disease pair using deep CNN architecture. The novelty of our work is that, we have focused on working of the prime crops of our H&K region, where no work is done. Total of 14,181 images with three different versions of dataset i.e. color, black and white and gray images are used for experimentation. Real environment images are collected and trained on AlexNet and SqueezeNet model, where the hyper-parameters are kept same for both the models. We have eliminated the preprocessing step to reduce the time complexity of the models. It is evident from the comparative analysis that AlexNet and SqueezeNet, both models performed well on color images as compared to the other two datasets of gray and black and white.

Our work also signifies that color images play an important role in identifying the diseased images. Hence capturing images at day time is suggested for identifying the diseases. And in order to realize the full potentiality of classifying fungi leaf diseases, our experimental findings are the new supplements for the research.

Table 15 Performance Metrics: mean precision, mean recall, F1 score and accuracy

Transfer learning					
	Dataset type	Precision	Recall	F1score	Accuracy (%)
AlexNet	Color	**0.9013**	**0.8839**	**0.8925**	**86.85**
	Black and White	0.7403	0.6364	0.6269	64.3
	Gray	0.7919	0.7425	0.7920	76.16
SqueezeNet	Color	**0.9269**	**0.8934**	**0.8790**	**86.56**
	Black and White	0.6384	0.6478	0.7089	67.8
	Gray	0.8983	0.7056	0.9735	81.8

Bold value is the highest value among the obtained results

8 Future scope

To explore and analyze all the dimensions of the proposed problem, a lot of work is yet to be done on fungi classification of leaf diseases. It includes disease identification of fruits, stems or leaves of plants and crops. So, there is a high scope to extend and generalize the various experimental findings.

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ಸಾಹಿತ್ಯ ಮತ್ತು ಸಂಸ್ಕೃತಿಯ ಶೋಧದಲ್ಲಿ...

Aruhu Kuruhu

In Pursuit of Literature and Culture...

ಸಂ. 13, ವಿಶೇಷ ಸಂ.೫೦, ಅಕ್ಟೋಬರ್ - ಡಿಸೆಂಬರ್ ೨೦೨೨, Vol. 13, Spl. Issue 50, October - December 2022

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ಕನ್ನಡ
ಭಾಗ-೧

೧. ಹದಿನೆಂಟು ಪಟ್ಟಣಗಳು
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೧೨. ಸರ್ವಜ್ಞನ ವಚನಗಳಲ್ಲಿ ಸಮತೆಯ ಭಾವ
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೧೩. ಕಡಕೋಳ ಮಡಿವಾಳಪ್ಪನವರ ತತ್ವಪದಗಳಲ್ಲಿ ವೈಚಾರಿಕತೆ
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ಚೆನ್ನಬಸವಣ್ಣನವರು

ಡಾ. ಮಹಾನಂದಾ ಮಡಕಿ

ಕನ್ನಡ ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕರು, ಕರ್ನಾಟಕ ಕಾಲೇಜು, ಬೀದರ

ಶರಣರ ಜೀವನ ಚರಿತ್ರೆಗೆ ಸಂಬಂಧಿಸಿದ ಆಕರಗಳು ನೋಡಲಿಕ್ಕೆ ವಿಪುಲವಾಗಿದ್ದರೂ ಅದರಲ್ಲಿ ಉಪಯೋಗಕ್ಕೆ ಬಾರದ ಸಾಮಗ್ರಿಯೇ ಹೆಚ್ಚು ಉಪಯೋಗಕ್ಕೆ ಬರುವ ಸಾಮಗ್ರಿ ಕಡಿಮೆ. ಈ ಕಡಿಮೆ ಸಾಮಗ್ರಿಯಾದರೂ ವೈರುಧ್ಯಗಳಿಂದ ಕೂಡಿರುವುದರಿಂದ ಸಂಶೋಧಕನಿಗೆ ಸಾಮಗ್ರಿಯೇ ಒಂದು ಸಮಸ್ಯೆಯಾಗಿ ನಿಲ್ಲುತ್ತದೆ. ಇದನ್ನು ಬಿಡಿಸಲು ಹೋದರೆ ಅನೇಕ ಹೊಸ ಸಮಸ್ಯೆಗಳು ಹುಟ್ಟಿಕೊಳ್ಳುತ್ತವೆ. ಕೆಲವೊಮ್ಮೆ ಚರಿತ್ರೆಯ ಕೆಲವು ಮಗ್ಗಲುಗಳನ್ನು ಕಟ್ಟುವುದಕ್ಕೆ ಈ ಸಾಮಗ್ರಿ ಸಾಲದೇ ಹೋಗುತ್ತದೆ. ಇಂಥ ತೊಂದರೆಗಳ ಮಧ್ಯದಲ್ಲಿ ನಿಂತು ಲಭ್ಯ ಆಕರಗಳ ಸಹಾಯದಿಂದ ಚೆನ್ನಬಸವಣ್ಣನವರ ಚರಿತ್ರೆಯನ್ನು ವೀರೇಂದ್ರ ಸಿಂಪಿಯವರು ದರ್ಶಿಸಿರುವುದು ಕಾಣಬಹುದು. ೧೨ನೆಯ ಶತಮಾನ ಶರಣ ಸಮೂಹದಲ್ಲಿ ಚೆನ್ನಬಸವಣ್ಣನವರ ಸ್ಥಾನ ಮಿಗಿಲಾದುದು. ಉಳಿದ ಆಧ್ಯಾತ್ಮ ಸಾಧಕರ ಜೀವನದಂತೆ ಅವರ ಜೀವನವೂ ಯಾವ ಚರಿತ್ರೆಕಾರನ ಸ್ಥೂಲ ನೋಟಕ್ಕೂ ಸಿಗದು. ಅವರದು ಬಹುಮುಖ ಸಾಧನೆ ಹಠಯೋಗ, ಮಂತ್ರಯೋಗ, ಶಿವಯೋಗಂಗಳ ಮಧ್ಯೆ ಸಮನ್ವಯ ಸಾಧಿಸಿದರು. ಚೆನ್ನಬಸವಣ್ಣನವರು ತಮ್ಮ ಜೀವನದಲ್ಲಿ ಅನುಭಾವ, ಅರಿವು, ಆಚರಣೆಗಳಿಗೆ ಮಹತ್ವಕೊಟ್ಟರು.

ಬಸವಣ್ಣನವರು ಭಕ್ತಿ ಭಂಡಾರಿಗಳಾದರೆ, ಅಲ್ಲಮ ಪ್ರಭುಗಳು ಅನುಭಾವ ಸಾಮ್ರಾಜ್ಯದ ಚಕ್ರವರ್ತಿಗಳಾಗಿದ್ದರು, ಅಕ್ಕಮಹಾದೇವಿ ವೈರಾಗ್ಯ ಶಿರೋಮಣಿಯಾದರೆ, ಸಿದ್ಧರಾಮ ಕರ್ಮಯೋಗಿಗಳಾಗಿದ್ದರು. ಇವರೆಲ್ಲರ ನಡುವೆ ಚೆನ್ನಬಸವಣ್ಣನವರು ಅವಿರಳ ಅನುಪಮ ಜ್ಞಾನಿಗಳಾಗಿದ್ದರು. ಅವರೆಷ್ಟು ಉನ್ನತ ಮಟ್ಟದ ಅನುಭಾವಿಗಳೋ ಅಷ್ಟೇ ಪ್ರಮಾಣದಲ್ಲಿ ತಮ್ಮ ಸುತ್ತಲಿನ ಸಮಾಜವನ್ನು ಸಹಸ್ರ ಕಣ್ಣುಗಳಿಂದ ನೋಡಬಲ್ಲ ತೀಕ್ಷ್ಣ ದೃಷ್ಟಿಯುಳ್ಳವರು. ಚೆನ್ನಬಸವಣ್ಣನವರು ತಮ್ಮ ಜನ್ಮ ಮೂಲವನ್ನೇ ಪರಮಾತ್ಮನಿಗೆ ಅರ್ಪಿಸಿದರು. ಅವರ ವಚನಗಳು ಘನ. ಅವರ ವ್ಯಕ್ತಿತ್ವವಂತೂ ಅದಕ್ಕಿಂತಲ್ಲೂ ಘನ. ಅವರದು ಜ್ಞಾನ ಕ್ರಿಯೆಗಳ ಅಪೂರ್ವಸಂಗಮವಾದ ಪಾದರಸದಂಥ ವ್ಯಕ್ತಿತ್ವ ವೀರಶೈವ ಸಿದ್ಧಾಂತಕ್ಕೆ ತಾತ್ವಿಕ ನೆಲೆಯನ್ನು ಕೊಟ್ಟು ಅವರು ಅನುಭವ ಮಂಟಪದ ಚರ್ಚಾಗೋಷ್ಠಿಯ ನಿರ್ವಾಹಕರೂ ಆಗಿದ್ದರು. ಅಕ್ಕನಾಗಮ್ಮ ಶಿವಸ್ವಾಮಿಯರ ಪುತ್ರನಾಗಿ, ಬಸವಣ್ಣನ ಸೋದರ ಅಳಿಯನಾಗಿ ಅನುಭವ ಮಂಟಪದ ಮೂಸೆಯಲ್ಲಿ ಪುಟವಿಟ್ಟ ಚಿನ್ನವಾಗಿದ್ದಾನೆ. ಚೆನ್ನಬಸವಣ್ಣ ಶಿವಶರಣರ ಚರ್ಚೆಗಳನ್ನು ಅನುಭವದ ವಾದಗಳನ್ನು ಆತ ಕೇಳಿದ್ದಾನೆ ಪ್ರಭುದೇವರು ಕಲ್ಯಾಣಕ್ಕೆ ಬಂದು ಬಸವಣ್ಣನು ಕೋಪಿಸಿಕೊಂಡಾಗ ಮಹಾದೇವಿಕ್ಕಯನ ಸತ್ವ ಪರೀಕ್ಷೆ ನಡೆದಾಗ, ನುಲಿಯ ಚಂದಯ್ಯಗಳು ಕಾಯಕದ ಹೊಣೆಯಲ್ಲಿ ಲಿಂಗವನ್ನು ತೊರೆದಾಗ ಎಲ್ಲಾ ಸಂದರ್ಭಗಳಲ್ಲೂ ಆತ ಅಗಾಧವಾದ ಜ್ಞಾನವನ್ನು ಪಡೆದಿರಲು ಸಾಕು. ಈ ಕಾರಣದಿಂದಲೇ ಆತ್ಮ ಸಿದ್ಧರಾಮನಂಥ ಯೋಗಿಗೆ, ಶಿವಯೋಗ ದೀಕ್ಷೆಯನ್ನು ನೀಡಲು

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ಅರುಹು ಕುರುಹು

ಸಾಹಿತ್ಯ ಮತ್ತು ಸಂಸ್ಕೃತಿಯ ಶೋಧದಲ್ಲಿ...

Aruhu Kuruhu

In Pursuit of Literature and Culture...

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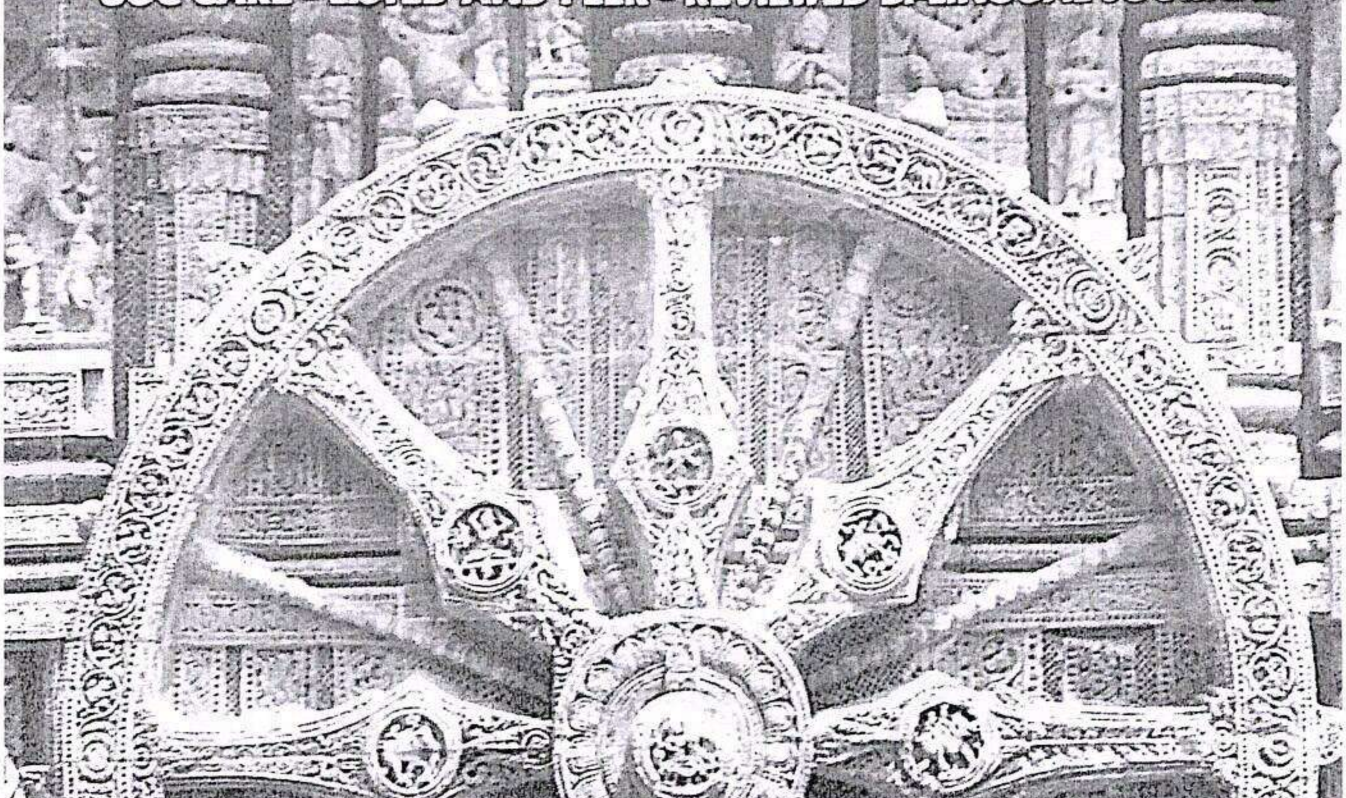

ಒಳನೋಟ

೦೧. ಶಾಸನಗಳಲ್ಲಿ ಆಯಾಗಾರಿಕೆ ಸಂಸ್ಕೃತಿ
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– ಡಾ. ರಂಗನಾಥ ರಾವ್. ಹೆಚ್.ಕರಾಡ್ /೧೩
೦೩. ಮಸ್ಕಿ ಪರಿಸರದ ಶಾಸನಗಳಲ್ಲಿ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯಗಳು
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ಯಕುಮಾರ ಹೆಚ್ ವಿಶ್ವಮಾನವ **ಡಾ ಆಶಾರಾಣಿ ಎಂ /೮೦

ಜನಪದ ಸಾಹಿತ್ಯ: ಮಹಿಳಾ ಪ್ರತಿಭಟನೆ

ಡಾ. ಮಹಾನಂದಾ ಮಡಕಿ
ಕನ್ನಡ ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕರು, ಕರ್ನಾಟಕ ಕಾಲೇಜು,
ಬೀದರ

ಮಹಿಳೆ ಎಂದಾಕ್ಷಣ ಮಹಾ ಇಳೆ, ತಾಳ್ಮೆ, ಸಹನಾಮೂರ್ತಿ ಎಂಬರ್ಥಗಳು ಸ್ಫುರಿಸುತ್ತವೆ. ಜನನ-ಬಾಲ್ಯ-ಪ್ರೌಢತೆ-ಪಕ್ವತೆ-ಮುಪ್ಪು ಹೀಗೆ ಸಾಗುವ ಮಹಿಳಾ ಜೀವನ ಯಾತ್ರೆಯ ಕ್ರಮ ಸುದೀರ್ಘವಾದುದು. ಈ ಬದುಕಿನ ನಡುವೆ ಸ್ತ್ರೀಸಂಕುಲ ಹಗಲು ರಾತ್ರಿ ಎನ್ನದೇ ಎಲೆಮರೆ ಕಾಯಿಯಂತೆ ಶ್ರಮಿಸುತ್ತಿರುವುದು ನೋಡಬಹುದು. ನಮ್ಮ ಸಮಾಜ ಬಹುಮುಖಿ ಸಂಸ್ಕೃತಿ ಒಳಗೊಂಡಿದ್ದು ಪಿತೃಪ್ರಧಾನ ವ್ಯವಸ್ಥೆಯಲ್ಲಿ ಹೆಣ್ಣು ಹುಟ್ಟುವುದೇ ಮಹಾಪರಾಧವಾಗಿದೆ. ಹೆಣ್ಣು ಹುಟ್ಟಿದರೆ ಹುಣ್ಣು ಹುಟ್ಟಿದಂತೆ ಭಾವಿಸಲಾಗುತ್ತದೆ. ಮುಂದೆ ಅವಳನ್ನು ಕೊಟ್ಟ ಹೆಣ್ಣು ಕುಲಕ್ಕೆ ಹೊರಗು ಎಂದು ಅತ್ಯಂತ ತಾತ್ಸಾರದ ಮಾತುಗಳನ್ನು ಆಡಲಾಗುತ್ತಿದೆ. ಹೀಗಾಗಿ ಮಹಿಳೆಯು ಎಲ್ಲಾ ಹಂತದಲ್ಲಿ ಅನೇಕ ರೀತಿಯ ನೋವುಗಳನ್ನು ಸಹಿಸಿಕೊಂಡು ಬರುತ್ತಿದ್ದಾಳೆ.

ಮಹಿಳೆಯು ಇನ್ನೊಬ್ಬರ ಅಧೀನದಲ್ಲಿಯೇ ಬದುಕು ನಡೆಸಬೇಕೆಂಬ ನೀತಿ ಕಟ್ಟಳೆಗಳು ಇಂದಿಗೂ ಇವೆ. ಈಗಲೂ ಸಹ ಅವಳು ಅನೇಕ ನೋವು, ಸಂಕಟ, ಯಾತನೆ, ಶೋಷಣೆ ಎಲ್ಲವುಗಳನ್ನು ಅನುಭವಿಸಬೇಕಾಗಿದೆ. ಇಷ್ಟಾದರೂ ಪ್ರಸ್ತುತದಲ್ಲಿಯೂ ಸ್ವತಃ ತಾಯಿಯಾದವಳೇ ಹೆಣ್ಣು ಬೇಡ ಗಂಡು ಬೇಕು ಎಂಬ ವಾದವನ್ನು ಮಾಡುವ ಹಂತವಿದ್ದಾಗ ಯಾರಿಂದ ಯಾರಿಗೆ, ಯಾರು ಯಾರಿಗೆ ನೋವು ಶೋಷಣೆ ಕೊಡುತ್ತಾರೆಂಬ ಅಂಶವು ನಮ್ಮ ಗಮನಕ್ಕೆ ಬರುತ್ತದೆ. ಆದರೆ ಇಂದು ಪ್ರಸ್ತುತದಲ್ಲಿ ಹೆಣ್ಣಿನ ಬಗೆಗಿನ ಪರಿಕಲ್ಪನೆಗಳು ಬದಲಾಗುತ್ತಿವೆ. ಹೆಣ್ಣು ಮಗು ಬೇಕು, ಅವಳು ಗಂಡನ ಮನೆ ತವರಿನ ಮನೆ ಎರಡು ಮನೆಯ ಸಮಾನ ಆಧಾರ ಸ್ತಂಭವಾಗಿದ್ದಾಳೆ. ಇಂದು ಮಹಿಳೆಗೆ ಎರಡು ಕಡೆ ಪ್ರಾಶಸ್ತ್ಯ ಉಂಟಾಗಿದೆ. ವಚನಕಾರರು ಹಾಗೂ ದಾಸರಲ್ಲಿಯೂ ಸಹಿತ ಮಹಿಳೆಗೆ ಮುಕ್ತವಾದ ಸ್ವಾತಂತ್ರ್ಯ, ಸಮಾನತೆ, ಭ್ರಾತೃತ್ವ ತರಲು ಹಾತೊರೆದುದ್ದನ್ನು ಕಾಣುತ್ತೇವೆ. ಇದರ ಹಾಗೆ ತತ್ವಪದಕಾರರು ಹಾಗೂ ಸ್ವರ ವಚನಕಾರರ ಲ್ಲಿಯೂ ಸಹಿತ ಮಹಿಳಾ ಪ್ರತಿಭಟನೆಯ ಅಂಶಗಳು ಸ್ಪಷ್ಟವಾದ ಹಾದಿ ದೊರೆಯದಿದ್ದರೂ ಆ ಸಂವೇದನೆಗಳು ಬಳಕೆಗೊಂಡಿವೆ, ಶರಣರ ಮಾದರಿಯಲ್ಲಿ ಮಹಿಳಾ ಪ್ರತಿಭಟನೆಯ ಅಂಶಗಳು ದೊರಕುತ್ತವೆ.

ಯಾವುದೇ ಸಾಹಿತ್ಯದಲ್ಲಿ ಪ್ರತಿಭಟನೆಯ ಅಂಶಗಳಿರುವುದು ಸಹಜ. ಆದರೆ ಪ್ರತಿಭಟನೆಯೇ ಸಾಹಿತ್ಯವಾಗಿ ಬೆಳೆದು ಬಂದ ಸಂದರ್ಭಗಳು ವಿರಳ. ಹೀಗೆ ಪ್ರತಿಭಟನೆಯೇ ಮುಖ್ಯವಾಗಿ ಬೆಳೆದು ಬಂದ ಪರಂಪರೆಗಳಿಗೆ ಚಳವಳಿ ಸಾಹಿತ್ಯವೆಂದು ಗುರುತಿಸಲಾಗುತ್ತದೆ. ಅಂತಹ ಸಾಹಿತ್ಯಕ ಚಳವಳಿಗಳಲ್ಲಿ ವಚನ ಚಳವಳಿ, ಪ್ರಗತಿಶೀಲ ಚಳವಳಿ, ದಲಿತ-ಬಂಡಾಯ ಚಳವಳಿಗಳು ಮುಖ್ಯವಾಗುತ್ತವೆ. ಆದರೆ ಜನಪದ ಸಾಹಿತ್ಯ ಹೀಗೆ ಚಳವಳಿ ಸಾಹಿತ್ಯವಾಗಿ ಬೆಳದದ್ದಲ್ಲ, ಅದು ಇರುವ ಬದುಕನ್ನು ಅರ್ಥವತ್ತಾಗಿ ಸ್ವೀಕರಿಸುತ್ತಲೇ ಅದರೊಳಗಿರುವ ಲೋಪ ದೋಷಗಳನ್ನು ಅಲ್ಲಲ್ಲಿ ಅಭಿವ್ಯಕ್ತಿಸಿದೆ. ಈ ರೀತಿಯ ಪ್ರತಿಭಟನೆಯ ಸಂಗತಿಗಳು ಮುಂದೆ ಹರಿದು ಸ್ತ್ರೀವಾದ ಕೇಂದ್ರಿತ ಅಧ್ಯಯನದಲ್ಲಿ ಕಾಣಿಸಿಕೊಳ್ಳುವವು.

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DIVERSITY OF NESTS AND NEST-BUILDING IN BIRDS

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Abstract:

Birds are unique in having a coat of feathers and in resting on the hind limbs alone. Hence they are defined as the feathered bipeds. For many years nest building in birds has been considered a remarkable behavior. Perhaps just as remarkable is the public scholarly consensus that bird nests are achieved by instinct alone. As a consequence, we contend that nest building is a much under investigated behavior that holds promise both for learning in that behavior as well as a new model system for examining brain-behavior relationship.

Key Words: Breeding habit. Parental care in birds. Nest and Nest building.etc.

Introduction:

Birds are the only animals with backbones that can fly. They are the univalled experts at flight, travelling further and faster than any other living creatures. They all reproduce by laying hard shelled eggs and most of them look after their offspring's. India has about, 1200, varieties of birds. The birds are famous for sexual dimorphism, courtship, seasonal migrations, art of nest building and parental care. Their distinctive colors and call notes appeal to human eye and ear.

Their economic importance further enhances human interest in them. They share with mammals and the highest development in animal kingdom. However show marked affinity with their ancestors the reptiles and are often described as the glorified reptiles.

Breeding habits differs from one species to other species. In case of Baya breeding habits seen during rainy season. During which they form large or small breeding colonies from these flocks. The larger breeding colonies may cover an area of several hundred hectares and are estimated to contain up to Ten million nests.

In case of Red Vented bulbul they breed from June to September their vocalization are usually stereotyped and call throughout the year during breeding they produced different distinct call is from March to December during which they produce a song which is a lord cheep-cheep-cheep with repeated continuosly.In case of sun birds pairs from for the whole breeding season both sexes later part in the nest building and also the feeding of the young.

Parental care behavior of birds includes the following activities. Nest construction, Incubation of egg, Care of the young. Most birds species build nests which is a structure in which the eggs are laid on section of narrow rocky ridges on patches of bare ground that have been scraped clean of vegetation and debris's is complexity from simple collection of sticks to those requiring varying degrees of care and precision in th formation of completed nest cups. The materials used in nests include grass, twigs, hair, feathers, sting moss of clay.

Incubation is the process by which the heat is necessary for embryonic development is applied to an egg after it has been laid; this is done by sitting on the egg. In many cases only the female incubates in other, the male and female share the responsibility. The incubation duration is generally related to the size of the bird. It varies from 12-14 days from smaller birds and from 40-50 days for the larger birds.

Female plays important role during parenting process this behavior and investment of parents increases the offspring's changes of survival. Usually the male collects the food materials and the female looks after the young ones. Young birds need care by the parents for some time their care includes feeding, guarding and protecting them against the sun, rain predator, either one or both the parents may perform these duties th food of young birds depending upon the species, compress worms, insects, seeds and fruits.

RESULTS AND DISCUSSION:

NESTS AND NEST BUILDING:

NESTS:

Nests come in many forms some of which are marvels of engineering and architecture. The classic nests are one that immediately springs to mind is the cup shaped structured favored by the majority of bird's species. It has the disadvantage of being vulnerable to predators but the advantage that it gives the incubating parent bird a char view of the surrounding environment the approach of any enemy can easily be seen enabling the bird to feet swiftly at the last movement of necessary.

One step up from this is the domed nest spherical in shape and with a side entrance this provides greater protection from the sun rain and cold and it completely hides the parent from prying eyes but it also makes it impossible for the parent to know when a predictor, such as two snake is closing in last minute espates therefore more difficult.

A further advance in design is the tube nest the entrance to the domed nest being extended down wards as a long hanging panage with the nest attached to a slender twig or branch this design makes it virtually, impossible for the tree snakes or other small ones or for climbing predators to enter the nest cavity. The problem with this type of construction is that it requires a great deal of time and effort to fashion it and claw actions of a highly specialized kind.

NEST BUILDING:

The male weaves begin their painstaking task by flying to tall grams and tearing off long strips. They do this by nipping a blade of grass and then flying sharply and powerfully upwards holding the blade firmly in their beaks making sure to take the toughest strip first, they start to wrap them around the fack of a twig after a number strip have been collected the loose ends have down in two separate trailing tassels these are then brought together to form a circle and this becomes the architectural bases for the whole nest. More and more strips are bought to this ring; the male standing on it like a caged bird on a swing as he carries out his intricate weaving stretching out as possible with each building action the bird gradually forms the dome of the nest. He uses three main types of stretching, knotting, weaving and twining. When knotting, he holds the grass with one or both feet and then pulls pushes and twists it around with his beak. When twining he uses his beak like the fingers of a tailor swing, threading a new grass strend in and out of the nest wall and adding's strength by employing a variety of loops.

Some birds have almost given up nest building and do little more than find a suitable notch on a branch or a tree trunk, where the egg is laid and incubated the tree swift cements a little patch of material to a branch with its saliva just enough to keep the single egg from rolling off.

Indian Houses Crow:

Scientific Name: Corvus Splendens

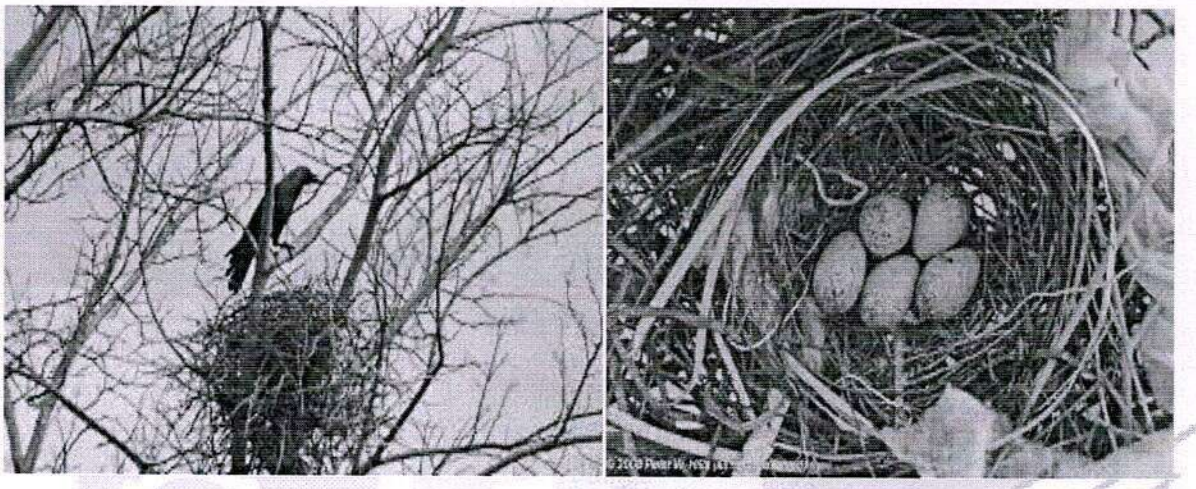
House crow also known as Colombo crow is a common bird of crow family that is of Asian origin, now found in many parts of world.

About the Bird:

Body length is 40 cm.the forehead, crown, throat and upper breast are a richly glossed black, whilst the neck and breast are a lighter grey brown in color. The wings, tail and legs are black. It feeds largely or refuses around human habitations, small, reptiles, insects, small invertebrates, eggs, nestlings, grain and fruits.

Construction of Nest:

Nests are usually hard to find and are placed 18-60 feet above ground, they are usually 12 inches wide and they are built using twigs, sticks and are lined with bark strip grass noses leaves, feathers and human hair. They built the nest in same trees and local environment seem to be necessary for its successful breeding, although they occasionally nest on telephone towards etc. They lay 3-6 eggs in a typical stick nest.



Indian Weaver Bird

Scientific Name: Polceus Philippinus

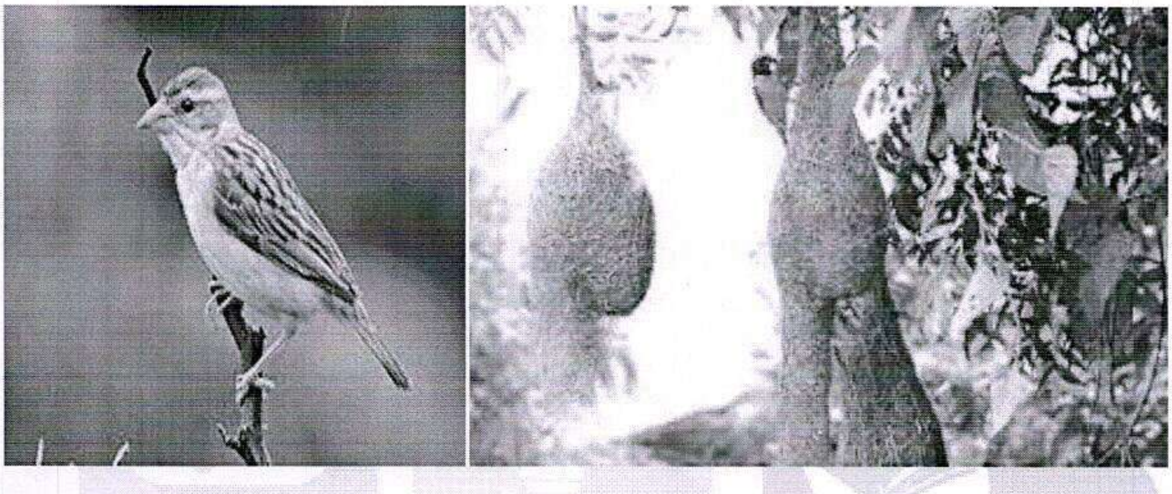
Baya weaver is a weaver bird found across south and Southeast Asia. Flocks of these birds are found in grasslands, cultivated areas, and shrub. They are widespread and common within their range but prone to local, seasonal movements mainly in response to resin and foods availability.

About the Bird:

They are 15cm, sparrow sized and in their non breeding plumage both males and females resemble female house sparrow. They have stout conical bill and a short square tails. Non breeding males and females look alike, dark brown streaked fulvous buff above, plain whitish fulvous below eyebrow long and buff colored, bill is horn colored and no mask. Breeding males have bright yellow crown, dark brown mask, blackish brown bill upper parts are dark brown streaked with yellow, with a yellow breast and cream buff below.

Construction of Nest:

During breeding season males begin building nests. Nests are build mainly in colonies, are often build from thorny Acacia or palm trees and hand over open water females lay about 2 to 4 white eggs and pendulous nests are retort shaped, with a central nesting chamber and a long vertical tube that leads to a side entrance to the chamber. Nests woven with long strips of paddy leaves, rough grasses and long strips to from palm fronds. Each strip can be below 20-60 cm. in length



Red Vented Bulbul:

Scientific Name: Pycnonotus Cafer

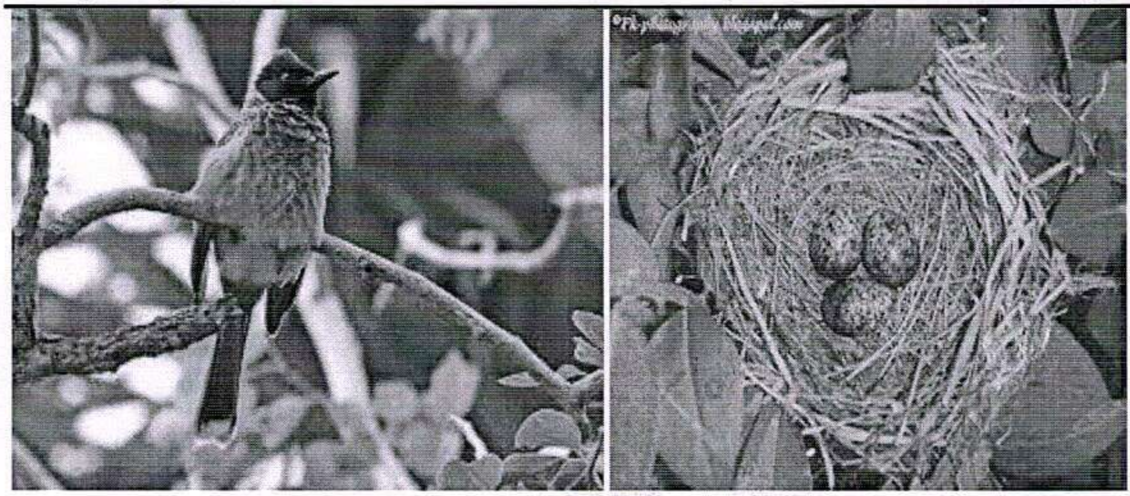
Red vented bulbul is a member of the bulbul family of passerine birds. It is resident breeder in tropical southern Asia from India, Srilanka, Burma and China.

About the Bird:

It is identified by its short crest giving the head a squarish appearance. Body is dark brown with a scaly pattern white head is darker or black. The rump is white the vent is red. The black tail is tipped in white. They are about 20cm. in length. It feeds mainly on fruits, petals of flowers, nector, insects and occasionally geckos.

Construction of Nest:

It builds its nest in a bush at a height of around 2-3 meter they lay 20 to eggs is a typical clutch nests are occasionally built inside houses or in a hole in a mud bank. In one instance a nest was found on a floating mat of water hyacinth leaves, nest in tree cavities have also been noted. They breed from June to September. Eggs are pale pinkish with spots of darker red more dense at broad end. They use small twigs and metal wires for nesting. The eggs hatch after about 14 days.



Rock Pigeon:

Scientific Name: Columba livia

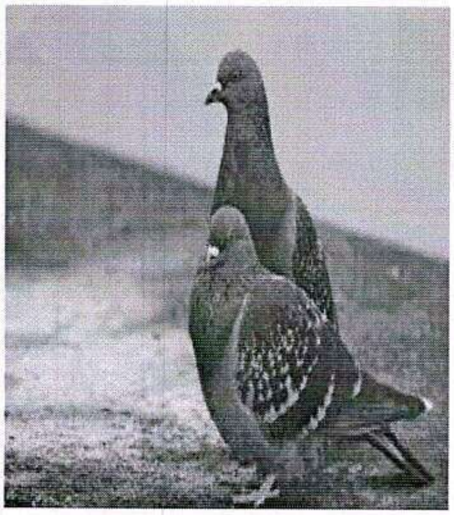
Rock pigeon or rock dove is a member of the bird family columbidae. Habitats include various open and semi open environments including agricultural and urban areas. Originally found wild in Europe, North Africa and Western Asia, feral rock pigeons have become established in cities around the world.

About the Bird:

These are pale grey with black bars on each wing. It is 32-37 cm. long has dark bluish grey head, neck and chest with glossy yellowish, greenish and reddish purple iridescence along its neck and wing feathers. The iris is orange bare skin around the eye is bluish Greybull is grey black with a conspicuous off white cere and feet are purplish red. They fed on food grains.

Construction of Nest:

They breed at any time of year, but peak times are spring and summer. Nesting sites are situated along coastal cliff faces as well as artificial cliff faces created by apartment buildings with accessible ledges or roof spaces. The type of nest constructed is a family platform of straw, sticks, twigs and grasses, put on ledge under cover. Two white eggs are laid with incubation that is shared by both parents lasting from 17 to 19 days and the fledging period is 30 days.



CONCLUSION:

Birds have perfectly adopted themselves to the environment where they live birds are found in almost all kinds of habitats with their beautiful nest in India and all over the world.

However human activities are causing habitat distruction, deforestation and pollution which have led many birds to become rare and endangered. A rigorous effort for conservation of birds is the need of the day.

From aesthetic view point birds are hard surpan any other group of animals. They can equal the variety and beauty of the colors of the colors of birds which is nature sue paned only by the colors of flowers, birds study has provided a never ending healthful recreation for millions of birds watchers all over the world.

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