

A Role Of Microfinance In Promoting SHG Activities

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Abstract

Microfinance is a term used to refer to the activity of provision of financial services to clients who are excluded from the traditional financial systems on account of their lower economic status. These financial services will most commonly take the form of loans (see micro credit) & savings, through some microfinance institutions will offer other services such as insurance & payment services. The Microfinance is changing the landscape of banking across the world. It has changed the lives of people & revitalized communities in the world's poorest as well as richest countries. The microfinance is a better targeted financial help to a clientele that is poorer & vulnerable than traditional bank clients. The broad classification of microfinance includes rural credit through specialized banks traditional informal microfinance like loans from friends & relatives money lenders etc. This paper focuses on the awareness of Micro Finance and in promoting the SHG activities.

Keywords: Microfinance ,money lenders ,micro credit

Introduction

People living in poverty –like everyone else need access to a diverse range of financial services, including loans, saving services, insurance & money transfers. Access to financial services can help enable the poor to increase income & smooth consumption flows, & thus expand their asset base & reduce their vulnerability to the external shocks that are a part of their daily existence. The availability of financial services acts as a buffer against sudden emergencies, business risk & seasonal slumps that can push a family into destitution. More & better financial services specifically geared towards low income groups can help poor households to move from everyday survival to planning for the future, investing in better nutrition, improve living condition & children's health & education.

Microfinance has the potential to benefit poor people both indirectly, through increased growth, & directly as they gain access to needed services. Impact studies show that in many cases ,microfinance reduced poverty through increasing income levels. Studies also show that microfinance improves poor people's lives by contributing to improved healthcare, children's education & nutrition & women's empowerment.

In particular, the ability to borrow, save & earn income reduced economic vulnerability for women & their households, increased financial & food security can bring a new confidence & hope which often translates to a greater sense of empowerment to a person.

Nonetheless, microfinance is not a panacea. Even the most innovative & participative programmes can lead to unwanted negative impacts. Microfinance has in many cases been shown to benefit the better off poor more than the truly destitute. Many early impact studies on microfinance showed increasing income levels, but more recent & better designed studies have shown that in many cases the impact varies per income group. In most cases the better off benefit more from micro credit, due to their higher skills level, better market contacts &

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higher initial resource base. Lower income groups may be more risk-averse & benefit more from saving & micro insurance.

Many microfinance & micro credit programmed target women in particular, largely due to their (generally) higher repayment rates, but in many cases this is mixed blessing. If a programmed excludes men, particularly in areas where access to financial services is limited, the man may require his wife to get the loan for him. Others have argued that exclusive access for women actually increases her bargaining power within the household. While inspiring examples abound of women taking loans & then using the income from their business to provide employment to others, feed their children's send them to school, & become empowered members of their community & their household, many more examples exist of vivacious circles of debt, family violence & increased workloads.

Access to Microfinance

The consultative group to assist the poor (CGAP) estimates that of the three billion poor people of working age who could be making use of these services about 500 million-one sixth currently have access to formal financial services.

If we are ever to reach the estimated three billion poor people who could use financial services, it will require a whole range of institutions, not just traditional NGO microfinance institutions to do it. Microfinance institutions have played a key role in the development of microfinance & they will continue to do so. But what is really needed-to reach both further & deeper-is a whole range of institutions that will jostle & compete with one another to serve poor people & to innovate to reach more & more poor people.

Self helpgroup.(SHG)

SHG is a holistic programme of micro-enterprises covering all aspects of self-employment, organization of the rural poor into self Help groups and their capacity building, planning of activity clusters, infrastructure build up, technology, credit and marketing.It lays emphasis on activity clusters based on the resources and the occupational skills of the people and availability of markets.Self-Help Group refers to self-governed, peer controlled, informal group of people with same socio-economic background and having a desire to collectively perform common purposes. Here poor people voluntarily come together to save whatever amount they can save conveniently out of their earnings, to mutually agree to contribute to a common fund and to lend to the members for meeting their productive and emergent needs.SHGs have been able to mobilize small savings either on weekly or monthly basis from persons who were not expected to have any savings. They have been able to effectively recycle the resources generated among the members for meeting the emergent credit needs of members of the group.SHG is a group formed by the community women, which has specific number of members like 15 or 20. In such a group the poorest women would come together for emergency, disaster, social reasons, economic support to each other have ease of conversation, social interaction and economic interaction.A SHG is an informal association to enhance the member's financial security as primary focus and other common interest of members such as area development, awareness, motivation, leadership, training and associating in other social inter-mediation programmes for the benefit of the entire community.

SHG Activites:

1. To save small amount of money regularly.
2. To mutually agree to contribute a common fund.
3. To meet their emergency needs.

4. To have collective decision making.
5. To solve conflicts through collective leadership mutual discussion.
6. To provide collateral free loan with terms decided by the group at the

Are you aware about Microfinance.

S.No.	Result	No. of respondent	Percentage
1	Yes	88	88
2	No	12	12

Interpretation

From the above we interpretate that 88% people aware about the microfinance & 12% people who unaware about the microfinance. A depth study is required to look at the channels where microfinance can communicate to 12% of people. Channels being print and digital media as well by arranging community programmes.

Educational Qualifications of sample Respondents

Elementary	Primary	Secondary	Higher secondary	UG	NILL
3	30	60	16	6	65

Out of the total respondents, 36.11 percent of the women are illiterate and the next majority of the women (33.33 percent) have done up to secondary education. It is noticeable that more than 63.89 percent of the respondents belong to literacy category

Maintenance Level of the family by women

To greater extend	To some extent	To low extent
43	129	8

Interpretation

Regarding maintenance level of the family, 129 (65.69 percent) respondents out of 180 respondents revealed that they are capable to maintain their family affairs to some extent and 43 respondents accepted it to a greater extent they can manage their family after becoming member in self-help group

Graph showing why they need microfinance by respondents

To start Business	To develop existing business	House hold purpose	Education purpose	Low rate of interest
88	33	35	8	16

Interpretation

Out of the total respondents, nearly half of the respondents (88 respondents) have taken microfinance to taken-up a new business and next they have taken up for household purposes and to promote their existing business respectively.

Microfinance provides the better service than traditional bank service?

S. No.	Result	No. of respondent	Percentage
1	Yes	65	74
2	No	23	26

From the above we interpretate that 73.86% people consider that microfinance provides the better service & 26.14% people consider the traditional system of bank service is

better. Microfinances need to provide additional services to its customers like a nationalised bank. This can be done by using innovative products to attract these 26.14% people.

Reduce in Poverty Level

To greater extent	To some extent	To low extent
165	15	0

Interpretation

From the above graph it is clear that 91.67 percent of the sample respondents stated that microfinance has minimized their poverty level to a greater extent and rest of the percentage stated that there is impact on their poverty some extent. It is noticeable that none of the respondent stated that negatively.

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Purpose of loan is taken through Microfinance

S.NO	PURPOSE	NO.OF RESPONDENTS	PERCENTAGE
1	SMALL BUSINESS	25	28.41
2	COTTAGE INDUSTRY OR SERVICE ACTIVITY	15	17.04
3	ARTISIAN ACTIVITY	12	13.63
4	HANDLOOM ACTIVITY	20	22.73
5	TRANSPORT SECTOR	16	18.18

Interpretation

From the above we interpretation that 18% people take the loan for the purpose of transport sector activity, 23% people take the loan for the agricultural & allied activity, 14% people take the loan for the artisan activity, 17% people take the loan for the tiny/cottage industry & 28% people take the loan for the purpose of small business. Number of loans given to small business is highest among other sectors

Conclusion

The legitimacy of microfinance is beyond doubt. In a context of growing financialisation, the poor more than anybody else need microfinance services. In the same vein, in a context where democracy remains mainly formal and inaccessible to the poorest, the collective approach (which is at the core of Indian microfinance through the Self-help-group concept) undeniably represents a tool for democratic practices and therefore for grass roots development, especially for women.

In practice, however, real effects are much more limited than what is usually presented. How far and under what conditions can microfinance combat poverty and contribute to grass roots development? The question is all the more acute in India, where microfinance has grown very fast and intensively over the last decade. After a first cycle of growth where the number

of clients went from a few thousand to several millions, microfinance is nowadays at the core of many agendas, be they public or private. Indian microfinance, both in terms of the number of clients and the volume of credit disbursed, is not anecdotal any more. Because of the socio- economic, political, even cultural questions it raises, microfinance becomes a societal challenge. If it is indeed urgent not to let oneself be blinded by the surrounding optimism and not to under-estimate the present weaknesses of microfinance, it is equally necessary to identify efficient and innovative experiments in order to better reflect on the future of microfinance.

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A Study on quality of Hospital facilities & patient satisfaction through various Health Care Departments

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Abstract

Most of the hospital follows a structured quality assurance and continuous monitoring programme, developed by Quality Committee of the hospital, mainly on the basis of **NABH** standards, an constituent board of QCI which is set up to establish and operate accreditation programme for healthcare organisations. It involves Healthcare Facilities, Quality Promotion, IEC Activities, Education and proper training for Quality & patient Safety and Recognition. Purpose is to provide a medical governance framework for high quality care and its periodic evaluation for Continuous improvement. These include a strong culture of safety that has been inculcated, a decrease in the incidence of adverse events and constant monitoring of quality within the system. Quality improvement is about ensuring that hospital focus is on improving, not just maintaining services. Quality improvement involves a focus on the safety, effectiveness, efficiency, acceptability, accessibility and appropriateness of services for consumers (who might be patients, relatives / parents, or the hospital and other health care professionals).

Keywords: *Quality, Safety, Hospital, Patient care, satisfaction*

Introduction: NABH is abbreviated as National Accreditation Board for Hospitals and Healthcare Providers is based on following international linkages: ISQua (International Society for Quality in Health Care) and ASQua (Asian Society for Quality in Healthcare).. The NABH standard touches every area where hospital faces difficulties in day to day issues where patients are of utmost importance. The prime focus is on requirement of patient, Care, Satisfaction, Information & Safety etc. Accreditation has following stages:

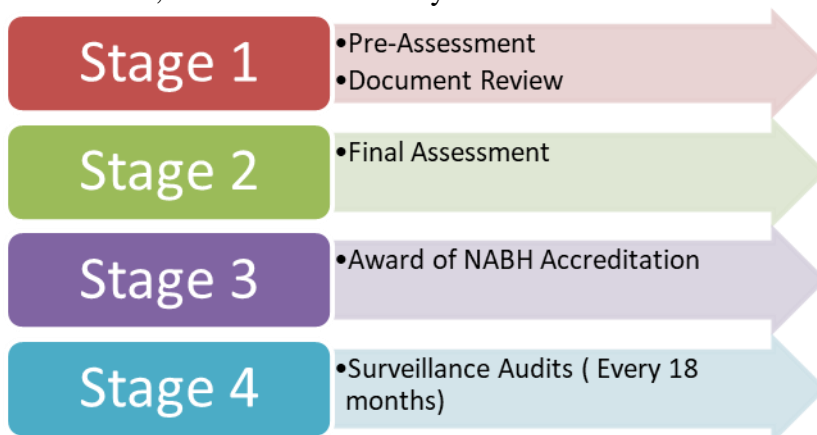


Fig 1.1: Stages of Accreditation

NOTE: Accreditation is valid for 3 years.

Continuous Quality Improvement strives to raise the benchmark in all aspect of service delivery and meet the quality standard. Following are some Key Points which ensure the

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uniform quality of patient care processes within the healthcare by developing and implementing an effective and continuous program to measure, assess, and improve Quality.

Key Points 1: Access, Assessment and Continuity of Care

Key Points 2: Care of Patients

Key Points 3: Management of Medication

Key Points 4: Patient Right & Education (PRE)

Key Points 5: Hospital Infection Control

Objective: To assess the framework for developing a strategy for high quality health care, and its periodic evaluation for continuous improvement thereby ensuring quality assurance system by proper Risk Management System.

Key Points 1: Access, Assessment and Continuity of Care:

Registration Process: Patients undergo Registration prior to any facilities which he wants to undertake in most of the hospital. A UID (Unique Identification Number) is generated which helps the hospital to identify patient across premises which ensure continuity of care across surroundings.

Patients enter in hospital through 3 Sources: OPD, Admission & Emergency.

OPD: OPD means an Out Patient Department of a hospital where patients are provided medical consultations and other allied services that is done on same day. The outpatient department is an important part of the overall running of the hospital which is mostly stationed on the Ground or First floor with car-parking facilities nearby. Wheelchairs and stretchers are available for non-ambulatory patients. Patients will register at a reception desk and there is seating for them while they wait for their appointments. Each doctor will have a consulting room and there may be smaller waiting areas near these. It contain following parts:

- Consultation Chamber
- Laboratory facilities such as: Blood Sample Collection
- Radiology investigation: X-Ray, MRI, USG, Mammography, CT scan, Etc
- Procedure Room for Dressing
- Cafeteria
- Washroom
- Nursing Counter
- Billing counter which includes: Help desk, Reception, Registration, Investigation counter, Grievance cell, Feedback, etc

The importance is as follows:

- 30–35% of hospital revenue is generated by ways of consultation fees, diagnostic tests etc.
- 50% of IPD patients come directly through OPD.
- It is a screening point (triage) for patients according to plan treatment.

Admission: Patients will only be accepted in the organization if their treatment falls within the scope of services. They are admitted mainly through below sources:

- OPD
- Emergency
- Direct pre-scheduled
- Referral

Admission are to be accepted 24 hours a day, 7 days a week and as per scope of services. The patients are admitted only under the doctor who has the authority to admit the patients in that hospital. The Admission policy categories are as follows:

Categories	Responsibilities
Third Party Assurance	TPA Desk/ Patient Attendant
Cash	Admission Desk/ Patient Attendant
PSU / Corporate	Admission Desk/ Corporate Desk/ Marketing
ICU / Emergency (Critical)	CMO, Nursing, PCS Executive
Re - Admission	Consultant/PCS Executive
Booking policy - Room Appointments	PCS Executive

Table 1.1: Admission Policy Category

The visiting time for the patient relatives are based on bed categories such as Ward / Private Rooms, SICU / MICU, Neuro ICU, CCU / CTVS, etc. Mostly timing is divided in dual shift: Morning and Evening.

Key Formats or records which are kept:

- Admission request form.
- Estimate form
- In Patient Information sheet
- A / D Form
- Registration form
- Bed transfer register

Emergency: The primary focus of any Emergency Department is to treat the critically ill and injured first in order to save life. An emergency is any medical problem that could cause death or permanent injury if not treated on priority. Severe pain in some instances can also be a medical emergency, such as the Chest pain accompanied by sweating, nausea, vomiting, and shortness of breath, radiating pain that moves to the arm or neck, dizziness, or feeling that your heart is beating irregularly or too fast, pain associated with kidney stones or appendicitis, etc. Following are the ways to reach patient to the hospital when they require health care on the urgent basis:

- Directly with some attendant
- Ambulance
- Unidentified Patient

Unidentified patients: As soon as patient is brought to casualty an emergency line of treatment get start and patient's registration shall be done as per hospital MLC Policy that clearly mention the patient as unidentified. Records are updated as and when the details of the patient are available and the same is informed to police.

Based on the Initial assessment done by CMO & nurse patient are shifted in emergency to following triage:

Colour	Condition	Timeliness
Red	Very Critical Patient	Urgent basis
Yellow	Critical Patient	20-25m
Green	Stable Patient	1 Hour
Black	Expired Patient	Shifted to Mortuary

Table 1.2: Emergency Triage Code Colour

Initial Assessment (IA): Every Inpatient (OPD, Emergency, and Unidentified) record MUST have a documented IA. The purpose is to ensure that patients undergo an appropriate assessment by qualified individuals to formulate a plan of care, which shall be documented with sign, name, date and time duly endorsed by the person making the entry. With the help of Doctor, Nurse and dietician the IA is conducted and documented.

Once the patient arrives in OPD /Emergency the following vitals / parameters are to be checked by nursing staff and on duty doctors.

- Pulse
- BP
- Respiration
- Temperature
- History of illness
- Height and weight
- Allergies or any associated disease/ surgical procedures
- Physical findings

Areas	Responsibility	Response Time	Record
Emergency	CMO	< 5 Mins	Triage assessment sheet
	Consultant	< 30 Mins	Hospital Letter head
	Nursing	< 2 min	Triage assessment sheet
OPD	Consultant	By Appointment / Walk in	Doctor Prescription
Ward	RMO	< 30 min	History & examination sheet
	Nursing	< 30 min	Nursing assessment
ICUs	Nurses	< 30 min	Nursing daily record
	RMO / Intensives	< 30 min	ICU chart / History Examination sheet
	Consultant	< 24 hrs of admission	Progress notes
Wards / ICU	Dieticians	< 24 hrs of admission	Nutritional assessment sheet

Table 1.3: Initial Assessment Table

Key Formats or records which are kept:

- Patient Assessment / Examination Sheet
- Emergency Record / IPD Case file

Plan of Care: It has following 5 Components: Curative, Preventive, Palliative, Rehabilitative & Nutritive. Plan Of Care must include “Preventing aspects of treatment / Care” which is documented so that treatment can be planned accordingly.

For Eg: Ischemic heart disease

Plan of Care: Regular Exercise, Avoid Smoking

Regular Reassessment: Once the initial assessment is over patient is reassessed periodically based on their treatment plan which is documented in the case sheet.

Key Formats or records which are kept:

- Patient Assessment / Progress Note / Sheet
- Medications sheet
- Nursing care of plan
- Nursing Notes

Continuity Of Care: To provide uninterrupted supply of service information about patient's care and response to treatment is shared among medical, nursing and care providers. The exchange in information is documented before shifting of any employee for smooth functioning of proper care of patient during their stay in hospital.

Discharge Process: The termination of an admission/ commitment to Hospital stay that ends the provision of treatment and other legal obligation of the Hospital towards the patient.

Following are the ways of doing discharge in hospital:

- Routine Discharge
- Discharge on Request
- Transfer to other hospital
- LAMA (Leave Against Medical Advice)
- Death
- Outside MLC

At the time of termination of patient during his stay in hospital Discharge Summary is handed over to the patient which contains following details: Patient Name, UIN, Admission date, Discharge Date, Reason for Admission, Significant Findings, Diagnosis, Investigation Reports, Procedure performed, Medication administered, Follow Up advice, Medication to be taken, When & How to obtain urgent case and In case of Death- Summary which will include cause of death.

Categories	Types Of Summary	Documents to be Given
Normal Discharge	Discharge Summary	Original Investigation Report & Film are provided to the patients.
LAMA	LAMA Summary	
Death	Death Summary	
MLC	Discharge Summary	Original Investigation Report & Film are not provided to the patients. Only photocopies of investigation reports are provided.

Table 1.4: Categories of Discharge Summary

Key Formats or records which are kept

- Discharge summary
- Death certificate and death summary
- LAMA summary
- Complete medical record file

Key Points 2: Care of Patients:

Vulnerable Patients: Those patients who are prone to injury and disease which includes: Elderly Senior citizen > 65 years, Babies and children < 12 years, mentally challenged patient, physically challenged patient, Female patient – unescorted, Patient with language problem e.g. foreign patient, Unconscious patient and sedated patient. These patients are never left alone at any point of time. The hospital ensures that vulnerable patients (elderly, physically and / or mentally challenged and children) are protected from abuse, which we define as a violation of an individual's human or civil rights by anyone.

Code Blue: It is an emergency response system in most of the hospital to respond to a Cardio Respiratory arrest situation when patient is Unresponsive, No Breathing and No Neck Pulse.

Hospital Staff response time is expected to be <90s or as soon as possible. Meanwhile Onsite staff has to start CPR (Cardio Pulmonary Resuscitation) Process.

Surgical Safety: To ensure Correct Patient at the Correct Site. The OT staff use methods known to minimize the risk for surgical site infection, Secure and accurately identify all surgical specimens and effectively communicate and exchange critical information for the safe conduct of operation there by establishing routine Surveillance of surgery Capacity, Volume and results.

Pain Management: The patient's pain is identified in the initial screening/assessment and reassessment on a regular basis. All care givers monitor patients pain which is documented and appropriate action are taken.

Time Out: Also known as Surgical Pause is a brief pause before the incision to confirm the patient, the procedure and the site of operation.

Key Points 3: Management of Medication

Medication Order: Contents will have following details:

- Patient Information
- Medication Name
- Dose, Time, Route, Frequency
- Clinician's Signature with date & time

Medication Errors: Following are the 5 kinds of Medication Errors:

- Prescription Error
 - Medicine prescribed should be in legible and clear handwriting.
- Transcription Error
 - Typing mistake should be avoided
- Dispensing Error
 - Cut Strips of medication should always be dispense in envelopes labelling Brand Name, Generic Name, Expiry Date and Batch No.
- Administration Error
 - Correct identification of the patient
- Near Miss
 - Medicine should be given on appropriate time by dose prescribed.

Medicine Administration: Following are the 10 Rights of Medication Administration:

- Right Person
- Right Drug
- Right Dose
- Right Time
- Right Route
- Right Education
- Right To Refuse
- Right Assessment
- Right Evaluation
- Right Documentation

All medications need to be check against Medication Order documented in Medication Chart to provide guidelines for the safe prescription, administration and monitoring of medications so that all medications are safely & accurately administered by appropriate trained and authorized personnel. While removing the medicine from the stock, it is required to check:

- Name of the drug (generic/Brand), Strength, and quantity.
- General appearance of the medication (e.g. melting, clumping etc.)
- Expiry dates before administration.

Three Checks

- While removing from stock
- Before loading
- After loading (prior to administration).

Storage of Medications: Are done as per manufacture's guidelines. Following is the list of different types of medication and their storage:

Medication	Storage
High Risk	Stored Separately in one cupboard under lock and key with orange colored high alert medication warning sticker outside cupboard
Narcotics Drugs	Separate Container/cupboard under double lock and keys with 2 different staffs.
Refrigerated drugs	2 to 8 degrees Celsius Expiry date <3 months Unopened vial: -20 degrees Celsius Open vial: 2 to 8 degree Celsius for 1 month
Blood and Blood Products	Whole blood, packed RBCs: -2 to 6 degrees Platelets, platelets aphaeresis: 20 to 24 degrees Fresh frozen plasma: -40 to -80 degrees Celsius Whole blood & PRBCs must be transfused within 4 hrs of issue

Table 1.5: Storage Of Medication

LASA Drugs: Look Alike/Sound Alike Drugs:

Colour Labels	Drug
Pink	Sound Alike
Yellow	Look Alike

Table 1.6: Drug Colour Label

Key Points 4: Patient Right & Education (PRE)

Patient's Rights and Responsibilities: Following are some of the patient's rights in hospital:

- Patient is treated with respect and dignity
- They are addressed by proper name
- Give correct information about the diseases for which he has come to hospital for proper care
- Maintain Privacy and confidentiality in all patient treatment.
- Protection from physical Abuse and Negligence

Following are some of the patient's responsibility:

- Provide accurate and complete correct and truthful information such as:
 - Patient identity
 - Medical Complaints
 - Past illness
 - Hospitalization
 - Present Condition

- Medications
- Pain, etc
- Clarify his doubts if patient is unable to understand Consultant queries during check up.
- Abide by all hospital Rules and Regulations such as:
 - Non Smoking Policy
 - Visitor Timing of meeting admitted patients
 - Employees should be treated with courtesy & respect,
- Patient should reach on appointment time.
- Pay service bills on timely manner.

Informed Decisions & Care: The purpose is to ensure that the Hospital is protecting patient and family rights and informs them about their rights during care for any modification of treatment plan. The patient has the right to know:

- treatment plan
- proposed plan of treatment including their risks factors and any alternatives / benefits in future
- methodology of the proposed treatment
- sign the informed consent to initiate their treatment
- Expected Results
- The Possible Complications
- Consultation
- Concerns & Requests
- Right to information and Education

All the above information is documented in Admission Information sheet.

Consent Policy: The purpose of obtaining a patient's general consent is to ensure that patient is informed about the routine medical and nursing care that will be provided to the patient based on which he takes decision of getting registered and admitted in this hospital. Information about and consultation on any proposed clinical / surgical/ non-surgical procedural initiative, it's likely alternatives and impacts. Two or more persons are said to be in consent with each other when they agree upon the same thing in same manner. There are two types of consent existing in health care intuitions.

- General Consent
- Admission Consent
- Informed Consent
- High Risk Consent
- Surgery

Patient Complaint/ Redressal Policy: If patient is dissatisfied by the services of hospital, he can register a complaint in a prescribed format of that hospital. This complaint is made either to Grievance cell or in the Feedback, which is later viewed by Area in charge. All the feedbacks are submitted to the Quality department via PA to Medical Director for further analysis and corrective or preventive measures.

Complaint Register & OPD and IPD feedback form/Analysis is maintained in hospitals.

Effective Communication: Information of rights of patients shall be communicated to them and their families in a Language that they understand through hospital guide book, at the time of admission or enquiry through verbal communication. Conversations with patient/family members shall be done at all levels wherever necessary in most of the hospital

are as follows:

- Front Office
 - Information related to cost of treatment, doctors availability, and scope of services with any general enquiries for any points. They also handle patient complaints, feedbacks and suggestions shall be collected (written) by the Front office personnel.
- Doctors / Nursing / Physiotherapists:
 - All information regarding diagnosis, treatment, prognosis. This will be done at the time of OPD consultation, admission and after the patient is admitted in the hospital till patients discharge from the hospital exist gate.
- Dietician:
 - Food related Issues, assessment for the need of foods and complaints
- Floor Manager / MOD's
 - Patient complaints during their stay in the hospital will be handled by the floor manager and also patient feedbacks and suggestions shall be collected by them after their discharge. Corrective and preventive action has to be taken and documented / inform to patients.
- PCS
 - All the Patient complaints during the OPD registration, consultations to till patients out from the hospital and also complaints / feedback / suggestions has to be handle by the PCS staffs. They have to review and analyzed for corrective action and same has to be documented / informed to patients.
- Administration, Quality, Operations Dept
 - All queries and grievances which cannot be handled at the lower levels will be finally forwarded here. Also patient's rights and responsibilities shall be displayed at all floors and staffs are trained on the same.

Key Points 5: Hospital Infection Control

Hand Hygiene: Good hand hygiene, the simple task of cleaning hands at the right times and in the right way, can prevent many hospital-acquired infections and save lives. The “Your Five Moments for Hand Hygiene” are:

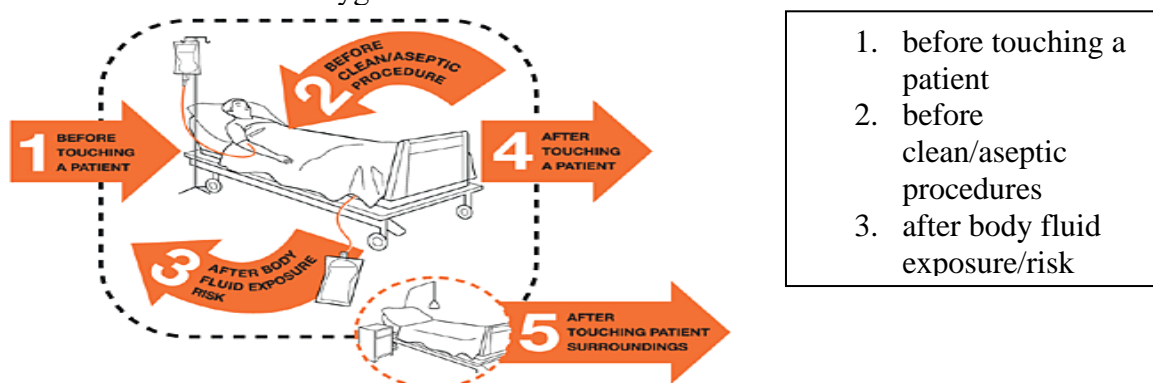


Fig 1.2: Five Moments for Hand Hygiene



Fig 1.3: Hand Hygiene technique with soap and water

Biomedical Waste Management: Anything tested or used on an individual, or any trash from biological experiments are medical waste. Hospital Waste is to be cleared within 48 hrs of Segregation. It is mainly generated from health care facility, Research Facility and Laboratories.

Container Colour	Description
White	Needle, Scapels, blades
Yellow	Ampulated body parts, All non plastic contaminated with blood and body fluids like cotton, bandage,plaster casts, etc
Red	All infected/containment Plastics like BT Sets, Gloves, Catheters
Blue	Broken/Unbroken glass, medicines vials & Ampoules
Black	General waste like, Kitchen waste, paper

Table 1.7: BioMedical Waste management- Put the right waste in the right colour

PPE's: Personal Protective Equipment's includes sterile gown, eye mask, shoe covers, boots, cap, mask, gloves, etc on entry in ICU's, CCU's and other Critical Care areas. Always use hand hygiene before and after touching the patient, and after contact with respiratory secretions and contaminated objects or materials.

Infection Control Surveillance: Personal protective equipment (PPE) to be worn to provide a protective barrier for personnel &also protect the patient from microorganisms present on the hands of personnel and reduce the likelihood of personnel contaminating their hands or clothing and transmitting microorganisms to the environment or to other patients. Key Aspects of Infection control program include-

- Surveillance for infections in patients and personnel
- Education for infection prevention
- Monitoring of Antibiotics
- Monitoring of SSI (Surgical Site Infections)

Conclusion: Most hospital adopt an approach to Quality improvement that includes planning the process for improvement, setting priorities for improvement, assessing Quality systematically, implementing improvement activities based on assessment, and maintaining achieved improvements. Some of the Quality improvement in hospital is done with the help of following:

- Access, Assessment and Continuity of Care: Registration Process, OPD, Admission, Emergency and Unidentified patients.
- Care Of Patients: Vulnerable Patients, Surgical Safety, Pain Management, Time Out, etc.
- Management Of Medication: Medication Order, Medication Errors, Medication administration and Storage.
- Patient Right & Education (PRE): Patient Rights and Responsibilities, Informed Decisions & Care, Consent Policy, Patient Complaint/ Redressal Policy, Effective Communication, etc
- Hospital Infection Control: Hand Hygiene, Biomedical Waste Management, PPE's & Infection Control Surveillance

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साहित्य में निरूपित मानव एवं समाज विषय संबंधी जीवन मूल्य

डॉ० निर्मला सिवाच*

सामान्य परिचय

आज का विद्यार्थी मूल्यपरक शब्द से अपरिचित नहीं है। भारतीय संस्कृति की आधारशिला मानवीय मूल्यों पर ही प्रतिष्ठित है। किसी भी परिवार, समाज या राष्ट्र की आर्थिक उन्नति भौतिक संसाधनों पर ही नहीं अपितु उस राष्ट्र के नागरिकों द्वारा व्यवहृत जीवन-मूल्यों पर आधारित है।

मानव जीवन को स्वस्थ दिशा देने वाले लोकोपकारी तत्वों का नाम है – मानव-मूल्य, जिनसे स्वस्थ व्यक्तित्व एवं स्वस्थ परिवार की संरचना होती है तथा क्रमशः स्वस्थ समाज एवं सुदृढ़ राष्ट्र की नींव निर्मित होती है। ये मानव मूल्य मानव जीवन के विषय झंझावतों में भी मनुष्य की जीवन रूपी नौका के लिए आकाशदीप की भाँति मार्गदर्शन करते रहेते हैं, उसे दिग्भ्रमित होने से बचाते हैं। 'सर्वजन हिताय तथा सर्वजन सुखाय' की भावनामृत से भरे हुए ये मानव मूल्य उस संजीवनी बुट्टी की तरह हैं जो मृत प्राय प्राणों में भी श्वास फूक देते हैं। ये मानव-मूल्य अमूल्य होते हुए भी मानव जीवन को मूल्यवान बनाते हैं। मानव-मूल्यों की दौलत से एक निर्धन भी स्वयं को धनवान से अधिक संतुष्ट अनुभव करता है तथा इनके अभाव में एक धनवान भी स्वयं को दरिद्र अनुभव करता है।

संस्कृत व्याकरण की दृष्टि से मानवीय-मूल्य शब्द की व्युत्पत्ति

मानवीय-मूल्य शब्द में मानव शब्द मननार्थक मन् धातु से निष्पन्न मनु शब्द से अपत्य के अर्थ में अण् प्रत्यय करने पर 'मानव शब्द' निष्पन्न होता है जिसका अर्थ है- मनु की सन्तति।

इसी प्रकार संस्कृत व्याकरण के आधार पर मूल्य शब्द का व्युत्पत्ति मूलेन समः मूल्य अथवा मूलेन आनाभ्य मूल्यम् के अनुसार हुई है जिसका अर्थ है मूल के समान मूल्य! मूल्य शब्द मूल + यत् प्रत्यय के संयोग से निष्पन्न है जिसका अर्थ है किसी वस्तु का विनिमय स्वरूप दिया जाने वाला धन, दाम, बाजारभाव आदि।

अंग्रेजी में इस शब्द के लिए वैल्यू, ग्रीक में एक्सियोज, जर्मन में वैट और फ्रांसीसी में वालोर का प्रयोग होता है।

पारिभाषिक दृष्टि से मूल्य शब्द का महत्व

मूल्य शब्द वस्तुतः अर्थशास्त्र का है, परंतु वर्तमान में यह नीतिशास्त्र, दर्शनशास्त्र, मनोविज्ञान, समाजशास्त्र तथा साहित्य जैसे विषयों में भी प्रयोग होने लगा है। डॉ० नगेन्द्र के अनुसार मानदण्ड और मूल्य आदि शब्द मूलतः साहित्य के शब्द नहीं हैं। पाश्चात्य आलोचना शास्त्र में इनका समावेश अर्थशास्त्र अथवा वाणिज्य शास्त्र से किया गया है।^४ सम्प्रति मूल्य शब्द का सर्वाधिक प्रयोग नीतिशास्त्र में दृष्टिगोचर होने लगा है। मूल्यबोध का सक्षात् संबंध मानवीय चेतना से है। मानवीय चेतना प्रभु प्रदत्त वह दीपशिखा है जो उसे उचित अनुचित, करणीय-अकरणीय का कर्तव्य बोध कराती है इस प्रकार मानवीय मूल्यों की जन्मभूमि मानवीय चेतना ही है। इस परिप्रेक्ष्य में कुछ विचार दर्शनीय है।

अज्ञेय के शब्दों में

हम मानते हैं कि सब प्रतिमानों का, सब मूल्यों का स्रोत मानव का विवेक है वही उसे सदसद् का ज्ञान देता है फिर उस सत् और असत् का क्षेत्र चाहे हो या न हो।^५ अतः मूल्य का मूल स्रोत मनुष्य का विवेक है जो सत्य और असत्य के राह पर चलाता है।

डॉ० संगमलाल पाण्डेय के अनुसार

मूल्यों का संबंध मनुष्य की चेतना से अनिवार्य है। मूल्य का संबंध मात्र ज्ञान, मात्र इच्छा या भावना से नहीं है अपितु मूल्य समग्र चेतना के विषय में है।^६ अतः पाण्डेय का कहना है कि मूल्य किसी एक तत्व से जुड़ा नहीं होता यह मनुष्य की सम्पूर्ण चेतना से जुड़ा होता है।

डॉ० सर्वपल्ली राधा कृष्णन् के अनुसार

मनुष्य की स्वतंत्र आत्मचेतना का सम्मान एवं विकास करे, क्योंकि वही मानवीय इतिहास की समस्त प्रगति के लिए उत्तरदायी है।^७ इस प्रकार मूल्य बोध या निर्णय के लिए मानवीय विवेक को जागृत रखना तथा उसके अनुरूप आवरण करना अनिवार्य है। हमारी निष्ठा समग्र मानवता के प्रति होनी चाहिए, हमें यह अनुभव करने में समर्थ होना चाहिए, भले ही हमारे राष्ट्रीय हितों को हानि पहुँचे, किंतु यदि उससे मानवता का, मानव जाति का रक्षण होता है तो वह उचित है।

* विशाल नगर, रोहतक

^४ गोविन्दचन्द्र पाण्डेय – मूल्यमीमांसा, पृ० 1

^५ डॉ० नगेन्द्र – विचार और विश्लेषण, पृ० 1

^६ अज्ञेय – हिन्दी साहित्य : एक आधुनिक परिदृश्य, पृ० 10

^७ डॉ० संगमलाल पाण्डे – नीतिशास्त्र का सर्वेक्षण, पृ० 304–305

** डॉ० सर्वपल्ली राधाकृष्णन् – भारतीय संस्कृति कुछ विचार, पृ० 67

अतः डॉ० सर्वपल्ली राधाकृष्णन् के अनुसार राष्ट्रीयता तब तक उपयोगी शक्ति है जब तक वह कर्तव्य, सर्वमान्य की भलाई, निष्ठा और सामान्य कल्याण के लिए त्याग के उच्च सिद्धांत हममें जगाती है। इसके अतिरिक्त भर्तृहरि ने भी मानवीय मूल्यों के प्रवर्तक ग्रंथ 'नीतिशतकम्' में मानव की श्रेणियाँ निर्धारित की हैं साथ ही मानव को परिभाषित भी किया है कि वे सच्चे पुरुष मानव कहलाने योग्य हैं जो स्वार्थों को छोड़कर परहित में तत्पर रहते हैं, वे सामान्य जन हैं जो व्यक्ति स्वार्थ साधन के साथ-साथ परहित में तत्पर रहते हैं, वे व्यक्ति मनुष्य के रूप में राक्षस हैं, जो स्वार्थों के लिए परहित को नष्ट कर देते हैं।

मानवीय जीवन मूल्य की गिरती हुई स्थिति में सुधार की आवश्यकता

विश्व कल्याण एवं विश्व शांति की प्रतिष्ठा के लिए आज मानव मूल्यों को आत्मसात् करने की महती आवश्यकता है। आतंकवादी हिंसा, नशीले पदार्थों के सेवन में हो रही उत्तरोत्तर वृद्धि तथा भौतिक सुख-समृद्धि की लिप्सा से दिग्भ्रमित मानव, समाज में गिरते हुए मानवमूल्यों के दुष्परिणामों के रूप में सामने विद्यमान है। मनुष्य में मनुष्यता लुप्त होती जा रही है।

आज विश्व में तमस् का प्रधान्य है, इसी तामसिक ज्ञान के कारण विश्व शांति विनष्ट होती जा रही है। कही धर्म के नाम पर तो कही वर्ण, जाति, लिंग, भाषा एवं संस्कृति के आधार पर हिंसा एवं प्रतिहिंसा हो रही है। इस समय भारत हो या श्रीलंका, सोवियत संघ या अन्य कोई राष्ट्र किसी न किसी रूप में वहाँ जनहिंसा हो रही है। मनुष्य हिंसक पशुवत् मनुष्य को ही मार रहा है। इंसानियत पर शैतानियत हावी होती जा रही है। फलतः अन्तर्राष्ट्रीय आतंकवाद आज विश्व की ज्वलंत समस्या बन बैठा है। बारूदी सुरंगों, बम धमाकों एवं एटमी जखीरो पर विजयी अटूटहास करते मस्तिकों ने आज मानस संतति के भविष्य और अस्तित्व पर ही प्रश्न चिह्न लगा दिए हैं। आज संयुक्त राष्ट्र संघ द्वारा आहूत सहस्राब्दि विश्व-शांति शिखर, सम्मेलन पर जुटे अनेक शासनाध्यक्षों की उपस्थिति इसी चिंता को जगजाहिर करती है। अतः आज मनुष्य में मनुष्यत्व को जागृत करने के लिए मानव-मूल्यों की मशाल की प्रदीप्त करने की परम आवश्यकता है। तभी विश्व में लोक कल्याण एवं विश्व-शांति की प्रतिष्ठा सम्भव है।

मानव जीवन को स्वस्थ दिशा देने वाले गुणों को मानव मूल्यों की संज्ञा से अभिहित किया जा सकता है। इस प्रकार ऋषियों द्वारा प्रदत्त आचार-संहिता या जीवन दृष्टि का नाम ही मानव-मूल्य है, जिनसे मानव जीवन का पूर्ण एवं सार्थक सदुपयोग हो सकता है। जीवन को अनुशासित एवं सुवासित करने वाले तत्त्वों को भी मानव-मूल्यों की श्रेणी में रखा जा सकता है। जैसे- असत्य की ओर नहीं, सत्य की ओर बढ़ो। अंधकार की ओर नहीं, प्रकाश की ओर, मनुष्य को बढ़ना चाहिए। इसी प्रकार मनुष्य को मृत्यु की ओर नहीं बल्कि अमृतत्व की ओर बढ़ना चाहिए।^{††} इन्हीं मूल्यों को जीवन के अनुशासित एवं सुवासित मूल्यों की श्रेणी में रखा जाता है। इसी प्रकार मनुष्य को अकलुषित कृत्य या बुराई से युक्त कलुषित कृत्यों को छोड़कर अकलुषित कृत्यों का आचरण करना चाहिए।^{†††}

संक्षेप में, मानवीय -जीवन-मूल्य के अनुपम तत्व हैं, जिनसे मनुष्य के मूल्य प्रतिष्ठा एवं यश में भी वृद्धि होती है, ये मनुष्य के मापक हैं तथा विश्वकल्याण के मेरुदण्ड के समान हैं। वैदिक साहित्य में मानवीय मूल्य विश्वकल्याण रूपी पृथ्वीलोक और पिता के समान आकाश को मधुरता प्रदान की गई है।^{‡‡} और यजुर्वेद में सविता देवता से प्रार्थना की गई है कि वे सविता देवता हमारे समस्त दुराचारों को दूर करे एवं जो हमारे लिए कल्याणकारी हो उसे हमको प्राप्त कराएँ।^{‡‡‡} मनुस्मृति में धैर्य, क्षमा, संयम, चोरी न करना, बाह्य-आभ्यान्तर पवित्रता, इन्द्रियों को वंश में करना, विवेकमति, ज्ञान, सत्य, क्रोध न करना ये दस मानव मूल्य के स्वरूप माने गए हैं। संस्कृत साहित्य में मानव-मूल्यों को धर्म एवं नीति जैसे शब्दों से भी अभिव्यक्त किया जाता है। मानव-मूल्य शब्द का अर्थ क्षेत्र बहुत व्यापक है इसके अन्तर्गत 'आदर्श गुण समूह, न्यायपूर्ण आचरण एवं विश्वकल्याण व्यवस्था दिग्दर्शन मिलता है। सर्वोत्तम मानव-मूल्य सत्य को प्रतिष्ठित करती हुई बाल्मीकि रामायण में यह कहा गया है कि इस जगत् में सत्य ही ईश्वर है, सत्य पर ही सदा धर्म की स्थिति रहती है। सबके मूल में सत्य ही है। सत्य से श्रेष्ठ कोई पद नहीं है।^{‡‡‡‡} इसी प्रकार महाभारत में धर्म के रूप में वर्णित मानव जीवन मूल्यों के प्रादुर्भाव के विषय में एक उल्लेख में कहा गया है कि प्राणियों के अभ्युदय एवं कल्याण के लिए ही धर्म का प्रवचन किया गया था अतः जो इस उद्देश्य से संयुक्त हो अर्थात् जिससे अभ्युदय और निश्रेयस् सिद्ध होते ही वही

†† असतो मा सद्गमय

तमसो मा ज्योतिर्गमय

मृत्योर्मा अमृतम् गमेयेति। वृहदा 1.3.28

‡‡ यानिवधानि कर्माणि तानि सेवितव्यानि। नो इतराणि। तैत्तिरीय उपनिषद् 1.11.2

‡‡‡ मधुनक्तमुतोषसे। मधुमत् प्रार्थिव रजः

मधु धौरस्तु नः पिता। ऋग्वेद 1.90.6

‡‡‡‡ विश्वानि देव सवितुर्दुरितानि परासुव

यद् भद्रं तन्न आ सुव।। यजु० 30.3

†††† सत्यमेवेश्वरी लोके सत्ये धर्मः सदाउजश्रितः।

सत्यमूलानि सर्वाणि सत्यान्नास्ति पर पदम्।। राम अयो० 109.13

धर्म है।^{१२५५} ऐसे शास्त्र वेताओं का निश्चय है कि प्राणियों की हिंसा न हो, अतः अहिंसा धर्म है। इसलिए धर्म का उपदेश दिया गया है।^{१२५६}

मानवीय जीवन मूल्यों का सामाजिक रूप से अध्ययन

कुछ मूल्य ऐसे हैं जो समाज के लिए जरूरी हैं। आचार्य भिक्षु का यह दृष्टिकोण बहुत ही उपयोगी है कि—जहाँ समाज व्यवस्था को चलाना है तथा समाज के आधार पर चिंतन करना है, वहाँ नैतिकता और धर्म को बीच में लाने की जरूरत नहीं। वहाँ सामाजिक दृष्टि से ही सोचना होगा। एक संदर्भ युद्ध के विषय में है युद्ध करे या नहीं? राष्ट्रीय हित की दृष्टि से युद्ध करना जरूरी हो जाता है, यदि वहाँ धार्मिक दृष्टि से सोचा जाएगा तो मुखर्तापूर्ण बात ही होगी। इसके विपरीत यह कहा जा सकता है कि हर मानव वर्ग व समाज किन्हीं मूल्यों और रीतियों पर आधारित है, लेकिन जब वह व्यक्ति समाज का अंग बन जाता है तो सामाजिक प्राणी कहलाता है और समाज में उसको विभिन्न गुण, विद्या, तप, दान, शीलता का भाव अपनाना चाहिए।^{१२५७} तभी वह सामाजिक भावना से समाजसेवी या समाज-संज्ञक व्यक्ति कहलाएगा। अतः कहा गया है कि धर्म को समझने के लिए जितना व्यक्ति को समझना जरूरी है उतना ही समाज को समझना जरूरी हो जाता है। धर्म के साथ कर्म का सिद्धांत जुड़ा हुआ है कर्म की व्याख्या व्यक्ति और समाज दोनों के संदर्भ में होती है। जैनकर्म विज्ञान के अनुसार गौत्रकर्म आठ प्रकार से भोगा जाता है— जाति, कुल, बल, रूप, तप, श्रुत, लाभ और ऐश्वर्य। रूप, बल, श्रुत, तप ये व्यक्ति से संबंधित हैं। जाति, कुल, लाभ ऐश्वर्य ये समाज से संबंधित हैं। कर्म प्रकृतियों का विश्लेषण करने से यह पता चलता है कि कुछ कर्म-प्रकृतियाँ समाज की सापेक्ष बताई गई हैं। अकेले व्यक्ति में भी उनका विशेष अर्थ नहीं होता परंतु वे समाज के संदर्भ में सार्थक बन जाती हैं।

निष्कर्ष

निष्कर्ष रूप में कहा गया है कि साहित्य में निरूपित समाज विषयक मानवीय जीवन के मूल्यों का अत्यधिक महत्व है, जो मूल्य रूपी धन व्यक्ति ने एकत्रित किया है वह समाज में व्यक्ति की प्रतिष्ठा का कार्य करता है और एक-दूसरे की सहायता करके व्यक्ति को सामाजिक रूप से प्रतिष्ठित जीवन जीने के ढंग को प्रदर्शित करता है।

संदर्भग्रंथ सूची

1. ऋग्वेद संहिता, सम्पादक – पं० श्री राम शर्मा, भगवती देवी शर्मा, प्रकाशक – ब्रह्मवर्चस् शन्तिकुंज, हरिद्वार
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3. महाभारत पं० राम नारायण दत्त शास्त्री पाण्डेय, गीता प्रेस, गोरखपुर।
4. महाभारत अनुशासन पर्व, गीता प्रेस गोरखपुर
5. मनुस्मृति, प्रो० सुरेन्द्र कुमार, आर्ष साहित्य प्रचार ट्रस्ट, खारी बावली, दिल्ली।
6. नीतिशास्त्र का सर्वेक्षण, संगम लाल पाण्डेय, सेंट्रल बुक डिपो, प्रयाग।
7. भारतीय संस्कृति के कुछ विचार, डा० सर्वपल्ली राधाकृष्णन।
8. विचार और विश्लेषण, डॉ० नगेन्द्र
9. मूल्य मीमांसा, गोविंद चन्द्र पाण्डेय
10. हिन्दी साहित्य : एक आधुनिक परिदृश्य अज्ञेय।

^{१२५५} प्रभवार्थाय भूतानां धर्मप्रवचनं कृतम्

यः स्यात् प्रभवसंयुक्तः स धर्मः इति निश्चयः।। महा अ० 109.10

^{१२५६} अहिसार्थाय भूतानां धर्म प्रवचनं कृतम्।

यः स्यादहिसा सम्पुक्तः स धर्म इति निश्चयः।। महा स० 109.12

^{१२५७} येषां न विद्या, न तपो, न दान,

ज्ञानं न, शीलं न, न गुणो न धर्मः

ते मर्त्य लोके भुवि भार भूताः

मनुष्य-रूपेण मृगाश्चरन्ति, भर्तृहरिनीति 65, पृ० 94

Children's Buying Behaviour towards Attractive Packaging of Food Products

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Abstract

Yester years witnessed the purchase decisions by the elderly persons in the family. Their decision also based on quality, price and with a limited competition. The time scale invited the children's to participate in the purchase decisions of their products. But today, purchased decisions are dictated by the children's of the home. They decide the choice and parents execute the choice of their kids whether it is food items, dress materials or electronic gadgets. This study took an initiative to graph the changes in the purchase pattern of food items and what really influences the purchase decisions of food products by the children. The perception of the children on the attributes of packaging namely colour, design, information, size, brand and quality were analysed. The focus of the study for primary data collection is children from selected schools in Chennai city. The simple random sampling method is adopted for the analysis. The analysis throws light on the strong relationship between packaging of food products and the purchasing behaviour of the children. Further, the study identifies the importance of colour, design and quality of the package through high beta coefficient in the regression table. Thus the manufacturers can give appropriate importance to these factors while taking the product packaging decision.

Keywords: Packaging, Attributes, Advertisement, Perception Analysis, buying behaviour

Introduction

Yester years witnessed the purchase decisions by the elderly persons in the family. Their decision also based on quality, price and with a limited competition. The time scale invited the children's to participate in the purchase decisions of their products. But today, purchased decisions are dictated by the children's of the home. They decide the choice and parents execute the choice of their kids whether it is food items, dress materials or electronic gadgets. Social media advertisements, peer group, status of parents, ready availability makes the children to decide the purchase. If both the parents are working, they pacify their kids to purchase anything they desire as they are not available to take care of their genuine needs and wants, especially food items. This study took an initiative to graph the changes in the purchase pattern of food items and what really influences the purchase decisions of food products by the children.

Packaging

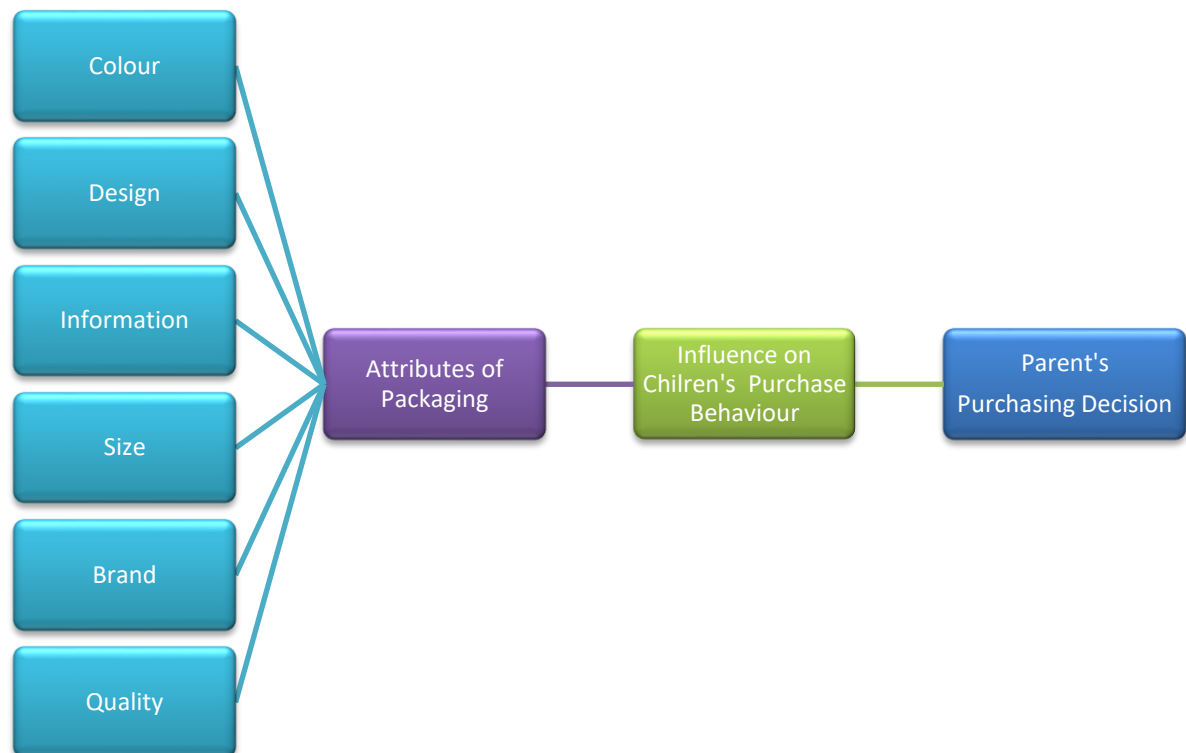
Adults view quality as their main criteria for purchase decisions while the children's judges the book by its cover. Kids are concerned about the packaging of a product. Packaging attracts the eyes, increases the affordability, protects the goods, satiates their desire and acts as the main criterion for the purchase decision of kids. It also increases the shelf time of the

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product which directly helps the manufacturers, retailers and consumers for the prolonged and continued usage of the product. Variation in the colour, quantity, taste, price and size of the package acts as a boost for the marketing of a product. The glittering packaging materials, soft touch of the cover, convenient tearing or piercing for opening, ease of carrying, quality maintenance, eye-catching words etc., attracts the children to select a particular brand of a product. Milk products and liquid items packed at a particular temperature gives high utility to those items with tetra packing.

Conceptual Framework

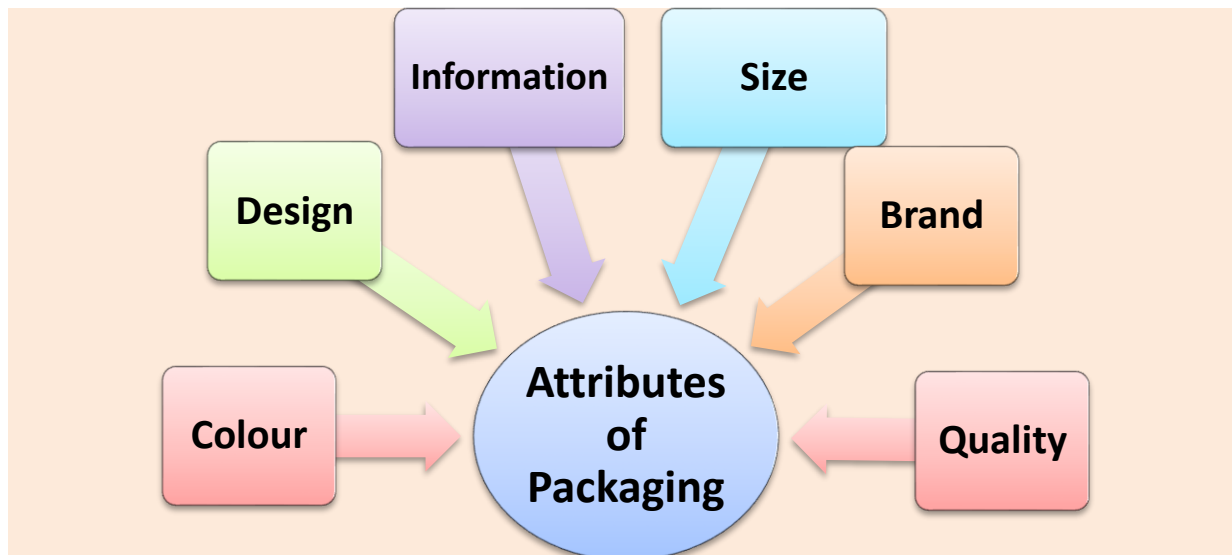


The packaging of a product attracts children to impulsively purchase a product. Thus the packaging has to be very attractive and eye catching for children to get influenced. The attributes of packaging plays a key role and influences the children's preference and choices and forms their purchase behaviour. Parents in turn are executing the purchase decision decided by their children. The theoretical framework of the study is developed based on the review of literature.

Food Packaging



Attributes Of Packaging



ATTRIBUTES	IMPACT
COLOUR	Eye catchy colours grasp the attention of children in food products. The colour of package attracts, influences and decides the purchasing behaviour of the children. Few colour are even names after the products like fanta orange, chocolate brown etc.,
DESIGN	Design of wrapper identifies the product itself. The colourful image of the products inside displayed on the package invites and acts as a prelude for the purchase.
INFORMATION	The information provided in the package is very essential. It should show the quantity, ingredients, price, details about the manufacturer, date of expiry and the nutritional value about the product, so that it facilitates the comparison among mutually exclusive products.
SIZE	Availability of the product in different sizes of package aids in matching the purchase with the requirements. The various packaging material also varies with the quantity (size) of the product. Depending upon the quantity of the product, packaging varies to suit its requirements.
BRAND (NATIONAL & INTERNATIONAL)	Brand image plays a key role in purchase decisions. Advertisement of a brand and its recognition in the young minds, leads to repetitive purchasing behaviour among the children. National and International brand are well recognised by the millennium kids well.
QUALITY	Quality of packaging material articulate about the product. The packaging usually highlights the quality of the product and creates a good impression about the product.

Review Of Literature

Shefali and Vijita Singh Aggarwal (2018) explores the influence of children on family purchase decisions by investigating the role of demographics variables of children and parents along with national culture and Family communication patterns. The authors developed a conceptual model which incorporates the influence of demographic variables and national culture on family communication patterns, and their subsequent influence on children influence in family purchase decisions across product categories and buying process stages.

Sharma & Sonwaney (2014) analysed the influence of mother employment status also on children consumption behaviour. The study shows that the mother employment status has no significant influence on children influence in purchasing decisions. The study was carried down in the urban India based on the product type and decision stages which leads to the moderating effect on buying decisions. Shah et al., (2013) identifies labelling as the most visible part of a product and forms an essential element of the marketing mix. Further the information on the packaging plays a major role, as it provides basic information and supports the marketing communication strategies of the company and paves way for identification and brand image building.

Karbasivar & Yarahmadi (2011) analyses the promotional activities, cash discount and window displays on the impulse purchasing behaviour of the selected sample consumers. The analysis reveals that there is a vital relationship between window display, credit card, promotional activities (discount, free product) and consumer impulse buying behaviour.

Saeed, Lodhi, Mukhtar, Hussain, Mahmood and Ahmad (2011), integrate the brand image, brand attachment and environmental effects and their impact on consumer purchase decision. The analysis reveals that brand image and brand attachment has a positive relationship with purchase decision while environmental effects do not influence the purchase decision. Butkeviciene, Stravinskiene and A. Rutelione (2008) considers impulse buying as the appropriate factor in CE retailing, and justified the use of sales packaging. At the same time, the importance of optimisation is indispensable. On the other hand, the authors indicate that a costly packaging in an ineffective way is not justifiable from economical and environmental perspective.

Adelina & Morgan (2007) are of the opinion that packaging was one of the most valuable tool in current marketing communications. Further the authors identifies the importance of packaging with its elements and the impact on the purchasing behaviour of consumers. Erzsebet & Zoltan (2007) made an exploratory analysis on the buying behaviour of baby care products by adopting risk reduction strategies. The authors through both qualitative and quantitative research proved that consumers' needs satisfied with the product in terms of reliability and performance and packaging.

The review of the literature throws a beacon light on the research carried down on the product packaging and purchasing decision of various products by the customers in the varied age groups in various geographical locations. The lacunae of research study concentrating on the children's influence on the purchasing decision are identified. Hence this study aims to bridge that research gap.

Objectives Of The Study

To study the impact of packaging on the buying behaviour of children.

To analyse the various attributes of packaging its influence on the buying behaviour of children.

Research Methodology

The study is based on the primary data which is collected through a standardized questionnaire. The focus of the study for primary data collection is children from selected schools in Chennai city. The simple random sampling method is adopted for the analysis. The children in the age group of 10 to 15 years were chosen for the data collection. The respondents being children, informal discussions was done to understand the packaging influence and further parents were also interviewed to understand the influence exerted by their children in their purchasing decision. The period of the study (reference period) i.e. period of data collection was 2018 -2019.

Limitations Of The Study

- The packaging of food products alone is selected for the study. Other types of goods do not form a part of the analytical forum.
- The focus of the study is based on the opinions of the consumers about the packaging. The opinions vary with different time zones and geographical variations. Hence it cannot be generalised in total.

Analysis & Interpretations

The perception of the children on the attributes of packaging namely colour, design, information, size, brand and quality were analysed. The relationship between the attributes of packaging was carried down by correlation analysis to understand the relationship between the variables. Multiple regression analysis was applied by considering children's buying behaviour as dependent variable and the attributes of packaging as independent variable.

Table 1: Perception analysis on the Children's Purchasing Behaviour

Variables	Strongly Disagree	Disagree	Moderately Agree	Agree	Strongly Agree	Total	Mean	SD
Colour	8	15	45	76	106	250	4.03	1.09
Design	10	12	48	102	78		3.90	0.91
Information	53	69	33	55	40		2.84	0.84
Size	36	43	67	39	65		3.22	0.69
Brand	35	28	65	80	42		3.26	0.85
Quality	19	15	32	97	87	3.87	1.01	

Source: Computed from Primary Data

The perception analysis on the children's purchasing behaviour is portrayed in the Table 1. Perception score based on the five point scale is classified and presented in the table along with the mean and standard deviation. It is very interesting to note that the analysis of children's response depicts a high priority of the colour of packaging with the highest mean score of 4.03. The attractiveness created by the colours mainly influences their purchasing decision is very clear through the mean score. The design of the packaging also got an important consideration for their purchase decision can be understood with the moderate mean score of 3.90. Further, in close association with the design the quality of the package

also influence them is very clear through the mean score of 3.87. Though the brand, size and information has an active role to play, it does not carry a predominant influence on their purchasing decision.

Table 2: Correlation Analysis on the attributes of packaging of food products

Variables	Particulars	Colour	Design	Information	Size	Brand	Quality
Colour	Pearson Correlation	1.000	0.953**	0.642	0.834**	0.095**	0.302
Design	Pearson Correlation	0.953**	1.000	0.679	0.832	0.967**	0.932**
Information	Pearson Correlation	0.642	0.679	1.000	0.925**	-0.107	0.135
Size	Pearson Correlation	0.834**	0.832	0.925**	1.000	-0.056	0.312
Brand	Pearson Correlation	0.095**	0.967**	-0.107	-0.056	1.000	0.914**
Quality	Pearson Correlation	0.302	0.932**	0.135	0.312	0.914**	1.000

** Correlation is significant at the 0.01 level (2-tailed).

The attributes of packaging indicate the power of inducement for the purchasing behaviour of children. The correlation analysis is carried down to understand the relationship between the attributes of packaging. There is a significant relationship between colour and design, size and brand. Further high correlation also exists between information and size and also brand and quality. Thus the attributes of packaging show a significant correlation relationship between the variables.

Table 3: Multiple Regression Analysis of Children's buying behaviour and Attributes of Packaging

H₁: There is significant relationship between the Children's buying behaviour and attributes of packaging.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	0.879(a)	0.781	0.667	4.291	6.185	0.00*

Coefficients (a)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	10.189	1.738		6.863	0.000**
Colour	0.834	0.057	0.563	14.192	0.000**
Design	0.238	0.049	0.317	5.422	0.001**
Information	0.185	0.024	0.064	4.826	0.083
Size	0.835	0.062	0.349	13.192	0.092
Brand	0.247	0.047	0.472	4.422	0.084
Quality	0.389	0.069	0.489	3.826	0.000**

** Significant at 1 per cent level

The table presents the results of multiple regression analysis made between the children's

buying behaviour and the attributes of packaging of food products. The variable children's buying behaviour is taken as dependent variable and the attributes of food packaging like colour, design, information, size, brand and quality are taken as independent variables.

It is clear from the results of regression analysis that there is a significant relationship of 88 per cent between the buyer behaviour and the attributes of packaging of food products. The ANOVA test made shows that f value of 6.185 is significant at 1 per cent level. The high beta co-efficient in the regression table clearly indicates the importance of colour, design and quality as the most influencing factor in the attributes of the packaging. Thus the manufacturers and policy makers can give appropriate importance to these factors while taking the product packaging decision.

Conclusion

The study traces down the changes happening in the purchasing behaviour of the consumers over the years. The children took the decision making in their hands today, especially for the food products. What makes a children to choose a particular product becomes the subject matter of analysis for today's manufacturer. This is a maiden step to unravel the main ingredient for the point of selection of a children, especially towards the packaging of food products. The attributes of packaging like colour, design, information, size, brand and quality are analysed in relation to children's purchasing behaviour. The primary data was collected from school children's through random sampling method. The analysis throws light on the strong relationship between packaging of food products and the purchasing behaviour of the children. Further, the study identifies the importance of colour, design and quality of the package through high beta co-efficient in the regression table. Thus the manufacturers can give appropriate importance to these factors while taking the product packaging decision.

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Phytochemical screening and detection of antimicrobial activities of medicinal plants : *Dalbergia sissoo* (Sheesham), *Plumeria rubra* (Gulchi) and *Solanum nigrum* (Makoi)

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VINAY DWIVEDI***

Abstract

To investigate the antibacterial activity and phytochemical screening, solvent extracts of the leaves of *Dalbergia sissoo*, *Plumeria rubra* and *Solanum nigrum* were prepared. The antibacterial activity of leaf extracts of above plants were evaluated by disc diffusion method against selected three bacterial species. All the extracts were shown positive effect against gram-positive bacteria and gram-negative bacteria. The extract of *Dalbergia sissoo*, and *Solanum nigrum* was found to be the most active against the *Bacillus subtilis*. Phytochemical analysis showed that the extracts contain carbohydrates, flavanoids, terpenoids, saponins, alkaloids, proteins, steroids, tannins, glycosides.

Keywords: Antimicrobial, Phytochemical, *Dalbergia sissoo*, *Plumeria rubra*, *Solanum nigrum*

Introduction

People from the ancient times have been exploring the natural resources particularly plants in search of new medicines. These plants have been found effective in the treatment of several diseases caused by microbes. As per WHO estimation, 80 percent of the people worldwide rely on plant based medicines for their primary health care needs (Farnsworth et al. 1985).

The medicinal plants generally produce variety of secondary metabolites which owe as an important source of microbicides, pesticides and many pharmaceutical drugs. Plant products still remain as the principal source of pharmaceutical agents used in traditional medicine (Ibahim et al 1997 and Ogundipe, et al. (1998).

Phytochemical screening play very important role to identifying new sources of therapeutically and industrially important compounds like phenolic compounds, alkaloids, flavonoids, saponins, steroids, tannins, terpenoids etc.

Dalbergia sissoo belong to family fabaceae is a fast-growing nitrogen-fixing tree which can easily be propagated and will grow on any well-drained soil, even on pure sand. In ayurveda, various parts of shisam tree are used for treating various diseases. The leaves are used for eye pain, swelling, painful urination, gynaecological disorders (Duke and Wain, 1981).

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Solanum nigrum also known as Makoi (h) belong to family solanaceae is a perennial shrub found in wooded areas. The phytochemical screening of the crude extract show the presence of alkaloids, reducing sugars, tannin, flavonoids and steroids.

It is an African medicine plant utilised for many ailments that square measure to blame for morbidity particularly feverish convulsions, eye diseases, hydrophobia and chronic skin ailments (Jain et al.,2011).

Plumeria rubra, commonly called Frangipani is well-known for its intensely fragrant, lovely, spiral-shaped, reddish blooms which appear at branch tips June through November.

Frangipani contains a number of medically active constituents and has been shown to be uterine stimulant, antifungal, antibacterial, antitumor, antiviral, analgesic, antispasmodic, and hypoglycaemic (Kalantri Mishra et al, 2016).

The in vitro medication activity of ethanolic, chloroform, ethyl acetate and aqueous extract of leaves has been evaluated using disc diffusion method against certain bacterial strains (Ajay Singh Baghel et al, 2010)

This study was designed to explore the antimicrobial efficacy of *Dalbergia sissoo*, *Plumeria rubra* and *Solanum nigrum* on selected human pathogens and to evaluate the phytochemical constituents of these plants. The leaves of these selected plants were used for the present study.

Materials & Methods

Plant Materials

The fully matured leaves of *Dalbergia sissoo*, *Plumeria rubra* and *Solanum nigrum* were collected from the Ghaziabad District, India during January 2017. The plant leaves were separated, washed thoroughly with tap water, shade dried, homogenized to fine powder and stored in an air tight bottle.

Preparation of Extracts

The organic extract was prepared by adding 10 g of crushed leaves of *D. sissoo*, *P. rubra* and *S. nigrum* in 50 ml of acetone, ethanol and methanol separately. It was allowed to stand for 24 h after which it was filtered using a Whatman No. 1 filter paper. The solvent was removed in rotary evaporator and the crude extracts were dried at room temperature. The light green crude extract was lyophilized to remove moisture contents.

The dried extract was transferred to amber glass jar and keep at 4°C

Phytochemical analysis

Phytochemical examinations were done for all the extracts as per the quality ways. (Harborne JB,1984 and Trease GE,1989).

1. Glycosides

Keller Killiam Test- A 100 mg of extract was dissolved in 1 ml of glacial acetic acid containing one drop of ferric chloride solution.

This was then under-layered with one millilitre of targeted acid.

The appearance of a brown ring at the interface of the two layers with the lower acidic layer turning blue green upon standing would indicate a positive test for glycosides.

2. Terpenoids

1ml of plant extract was taken. 2 ml of Chloroform was added. Conc. Sulphuric acid (3 ml) was supplementary to create a layer.

A reddish brown color at the interface indicates its presence.

3. Saponins

Froth Test: Extracts were diluted with water to 20ml and this was jolted in a very graduate for quarter-hour.

Formation of 1 cm layer of foam indicates the presence of saponins.

4. Carbohydrates

Extracts were dissolved separately in five millilitre water and filtered.

The filtrates were went to check for the presence of carbohydrates.

Molisch's test- Filtrates were treated with two drops of alcoholic α -naphthol in a test tube and 2 ml of conc.sulphuric acid was supplementary rigorously on the edges of the test tube. Formation of a red or dull violet colour at the interphase of the two layers indicates positive test.

5. Proteins

Xanthoproteic Test: The extracts were treated with few drops of targeted chemical element acid solution.

Formation of yellow color indicates the presence of proteins

6. Tannins

2 ml of the extract was stirred with 2ml of distilled water and few drops of ferric chloride (FeCl_3) solution were added.

Formation of inexperienced precipitate was indication of presence of tannins.

7. Flavonoids

Alkaline Reagent Test: 2 ml of extracts were treated with few drops of 10% aqueous sodium hydroxide solution.

Formation of intense yellow color, that becomes colorless on addition of dilute acid, indicates the presence of flavonoids.

8. Anthraquinone

5 gm of each plant extract were mixed with 10 ml of benzene and filtered. A 10% ammonium hydroxide solution (5 ml) was added to the filtrate, and the mixture was shaken.

The presence of a pink, red or violet color in the ammonia phase was taken as an indication of the presence of anthraquinones.

9. Steroids

Salkowski Test- A reddish brown colour produced in the lower chloroform layer when 2 ml of organic extract was dissolved in 2 ml of chloroform and 2 ml concentrated sulphuric

acid was supplemental in it, indicates the presence of steroids.

10. Alkaloids

Wagner's Test: Extract were treated with Wagner's reagent (Iodine in potassium iodide)

Formation of brown/reddish brown precipitate indicates the presence of alkaloids.

Microbial Culture

The reference strain of three bacteria, viz. *Bacillus subtilis* (MTCC *121), *E.coli* (MTCC 118), *Pseudomonas aeruginosa* (MTCC 2297) were obtained from IMTECH, Chandigarh, India. The bacteria rejuvenated in Mueller-Hinton broth (Hi-media laboratories, Mumbai, India) at 37oC for 18 h and then stocked at 4oC in Mueller-Hinton Agar. Bacterial subcultures were maintained in nutrient agar medium.

Preparation of disc for Antibacterial activities.

The stock solution were prepared in water and the sterile blotting paper disc (5 mm) were soaked in the diluted extract in different concentrations (25%, 50%, 75% and 100%). The prepared disc were dried in room temperature to remove excess of solvent and used for study.

Antibacterial activity using disc diffusion method The modified paper disc diffusion (12) was employed to determine the antibacterial activity of extract of the herbal preparations. Inoculum was spread over the agar plate using a sterile cotton swab or spreader in order to obtain uniform microbial growth. Then the prepared discs were kept over the lawn and pressed slightly. The plates were incubated for 18 h at 37°C. The antibacterial activity was evaluated and diameter of inhibition zones was measured. Experiment was carried out in triplicate and the averages diameter of zone of inhibition was recorded. The antibacterial activity was classified as highly active (>11 mm), mild active (8-11 mm) and slightly active (7-8 mm) and less than 7 mm was taken as inactive.

Results

In the present study, three common medicinal plants namely *Dalbergia sissoo*, *Plumeria rubra* and *Solanum nigrum* were tested for their phytochemical and antimicrobial properties against selected human pathogens.

Phytochemical analysis

Table 1: Phytochemical analysis of *Plumeria rubra*, *Dalbergia sissoo* and *Solanum nigrum*.

Compounds	Extract	Medicinal plant		
		<i>Plumeria rubra</i>	<i>Dalbergia sissoo</i>	<i>Solanum nigrum</i>
1. Glycoside	Acetone	++	+	++
	Methanol	+	++	+
	Ethanol	+++	+++	+++
2. Terpenoids	Acetone	+++	++	++
	Methanol	+	+++	+
	Ethanol	++	+	+++
3. Saponins	Acetone	++	-	++
	Methanol	+++	-	+++
	Ethanol	+	-	+
4. Carbohydrates	Acetone	+++	+	+
	Methanol	+	+++	+++
	Ethanol	++	++	++
5. Proteins	Acetone	+++	++	+++
	Methanol	+	+++	+

	Ethanol	++	+	++
6. Tannins	Acetone	++	+	++
	Methanol	+	+++	+
	Ethanol	+++	++	+++
7. Flavonoids	Acetone	+	+	++
	Methanol	++	+++	++
	Ethanol	+	++	+++
8. Anthraquinones	Acetone	-	-	-
	Methanol	-	-	-
	Ethanol	-	-	-
9. Steroids	Acetone	+++	+	+
	Methanol	+	++	+++
	Ethanol	++	+++	++
10. Alkaloids	Acetone	+	+	+
	Methanol	+	++	++
	Ethanol	++	+++	++

Phytochemical analysis of selected medicinal plants *Solanum nigrum*, *Dalbergia sissoo* and *Plumeria rubra* are tabulated in Table 1. The phytochemical screening of medicinal plants was performed for the identification of bioactive compounds including flavonoids, terpenoids, anthraquinones, saponins, steroids, carbohydrates, tannins, alkaloids, glycosides and proteins. While performing phytochemical analysis some of the medicinal plants shows positive results in their specific extracts. Some of the extracts exhibit higher abundance of the compounds while some shows lesser or no presence of that specific compound within the extracts. From the table 1, it could be clearly seen that glycoside, terpenoids, carbohydrates, proteins, tannins, flavonoids, steroids and alkaloids are present in all plant extracts. Saponins shows no presence in the leaves of *Dalberia sissoo*. Anthraquinones is not present in any of the plant extracts.

Antimicrobial analysis

Table 2: Antimicrobial analysis of selected medicinal plants against E.coli, B. subtilis, P.aeruginosa, A. niger and A.nidulans.

Strain	Extracts	Medicinal plants		
		Plumeria rubra	Dalbergia sissoo	Solanum nigrum
E.coli	Acetone	+	++	++
	Methanol	++	++	++
	Ethanol	+++	++	++
Bacillus subtilis	Acetone	+	++	++
	Methanol	+	+++	+++
	Ethanol	+	++	+++
Pseudomonas aeruginosa	Acetone	++	++	++
	Methanol	+	++	++
	Ethanol	++	++	++

Discussions

Screening of three selected medicinal plants predicts the maximum number of phytochemicals are present in Solanum nigrum as compared to the other two selected plants. Phytochemical and antimicrobial analysis of ethanolic extracts has shown highest results as compared to the other two extracts (Perez et al., 1990). Due to these regions *S. nigrum* can be used clinically to find novel antibacterial compounds for curing different infectitious diseases (M. Rajathi D Modilal et al, 2015). Aromatic compounds such as phenols, phenolic acids, alkaloids and lectins and its derivative e.g., flavonoids have been identified as antimicrobial agents. (Singh et al., 2011). Phytochemical analysis of Dalbergiasissoo have showed the presence of glycoside, terpenoids, carbohydrates, proteins, tannins and flavonoids. Methanolic extract of leaves of *Dalbergia sisso* showed antimicrobial activity against the bacterial test species second more potent drug. Phytochemical analysis of *Plumeria rubra* has also shown the presence of maximum number of phytochemicals except anthraquinones. These results were found similar with the findings of Kalantri Manisha and Aher An (2016). The ethanolic extract of *Plumeria rubea* showed maximum zone of inhibition against bacterial strain E.coli and Pseudomonas aeruginosa.

Conclusion

The results obtained in this study reveals the effects of plant extracts (Plumeria rubra, Dalbergiasissoo and Solanum nigrum) in Acetone, Methanol and Ethanol on some bacteria which are responsible for causing various infectitious diseases. The selected plants have shown great effect against certain bacterial strains. The plant extracts contain many phytochemical constituents that are effective against these microbes. The antimicrobial effects of the three selected plants were good but Solanum nigrum has shown best results. These plants have a therapeutic value which can be also used as a potential sources for drug for treating various diseases and infections.

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Sustainability Of Green Marketing In Kanniyakumari District

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Abstract

Green marketing is a broader concept, which encompasses all marketing activities that are developed to stimulate and to sustain consumers' environment-friendly attitudes and behaviours. The development of energy – efficient operations, better pollution controls, recyclable and biodegradable packaging, ecologically safe products are all part of green marketing which also leads to sustainable development. In the present study, an attempt has been made to study the sustainability of green marketing in Kanniyakumari District of Tamil Nadu. The paper aims at finding the factors influencing to purchase of green products and to analyse the attitude of the respondents towards green products. The study reveals that majority of the customers are educated youngsters aware of the significance of environmental protection. But the problems are lack of availability and marketing of green products. If the problems are rectified by the authorities concerned the green marketing in the study area will be exemplary.

Keywords: Sustainability, Green Marketing

Introduction

Environmental concern as the combination of marketing management discipline has appeared recently. The nucleus and essential elements of green marketing is sustainability in all spheres of business. Green marketing is a much broader concept, which encompasses all marketing activities that are developed to stimulate and to sustain consumers' environment-friendly attitudes and behaviours. According to the World Commission on Environmental Development (1978), Sustainable Development is “meeting the needs of the present without compromising the ability of the future generations to meet their own needs”. The common theme throughout this strategy of sustainable development is the need to integrate economic and ecological considerations in decision making by making policies that conserve the quality of agricultural development and environmental protection. The development of energy – efficient operations, better pollution controls, recyclable and biodegradable packaging, ecologically safe products are all part of green marketing which also leads to sustainable development.

Review Of Literature

Tantawi et al. (2009) in their research paper have empirically investigated the attitude of Egyptian consumers towards the environment in general which would help the Egyptian government better understand the consumers' level of concern about the environment, develop effective environmental policies required to achieve sustainability and reinforce green purchase through legislation. Attitude of the consumers is seen as the most significant predictors of consumers' willingness to pay more for environmentally-friendly products.

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Egyptian consumers argued that protecting and preserving the environment is the responsibility of every citizen however the larger responsibility falls on the government. ††††

Sharma and Tak(2010) in their article have underlined the importance of green marketing along with new innovative strategies which can be adopted by various business organisations. The corporate sector have realised the importance of going green. Nowadays institutions want to enhance their image as an environment friendly establishment which they are trying to achieve through their corporate sustainability cell for which the support from the government side is also remarkable. Lot of research has been done on Green Engineering wherein they can develop products which have a minimum or no impact on the environment. ††††

Abdul Samad Shaikh, and Mustaghis-Ur-Rahman (2011) the study gives an insight about consumers' attitude towards green products. The most important outcome of the research is that consumers' do not have positive significant attitude towards green products. But consumers' environmental awareness and their inclination to protect environment have been significantly high. Low perceived functionality of eco-labels indicates that consumers do not find eco-labels as something influencing their purchase intension. Consumers do not read information on eco-labels. Effectiveness of eco-labels is found to be poor to influence consumers' attitude towards green products. §§§§

Sonya (2013) pointed out that the consumers' attitude towards sustainable consumption as a whole and different segmentation models in particular. It was found that still the green consumers represent a very small segment although results vary depending on the industry and demographic characteristics of the segment. The government and NGOs need to assist companies in the education of consumers, to make sure that all the premises for changing behaviour are available and to convince people, that they have to do is to react. The study suggests increasing the sales of environmentally sensible products, companies must remove the main six obstacles – namely, limited knowledge, negative perceptions, distrust, high prices and low availability as well as anticipate the green marketing as leading management principle for the whole company. *****

Uma Maheswari, (2015) opined that consumer behaviour plays a vital role in the survival and success of products. The study brought out the fact that though consumers are considerably well aware of green products but they are less concerned and committed to buy eco-friendly products. The manufacturers, consumers, society, Government and media are collectively responsible for the sustainability of green environment and promotion of green products. †††††

Statement Of The Problem

The implication of marketing technique on consumer environment is a subject that is rarely considered by most marketing organizations. Most firms seek to maximize profits. The world must be developed according to the needs of the people, but with the obligation of

†††† Tantawi, P., O'Shaughnessy, N., Gad, K. & Ragheb, M.A.S. (2009), " Green Consciousness of Consumers in a Developing Country : A Study of Egyptian Consumers", *Contemporary Management Research*, Vol. 5, No. 1, pp.29 - 50.

†††† Sharma, A. & Tak, A. (2010), "Green Marketing : A Challenge or an Opportunity in the Global Environment", *Lachoo Management Journal*, Vol. 1, No. 1, 99 -102.

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††††† Uma Maheswari, M.,(2015), "Purchase Behavior of Consumers Towards Green Products", *The International Journal Of Business and Management*, Vo.3, Issue 7, July, pp.145-151.

sustainable development as a comprehensive process. Sustainable development is about making models in a qualitative way to meet the socio-economic needs and interests of people, while eliminating or significantly reducing the impacts that threaten or harm the environment and natural resources. It is ultimately the user who needs attitudinal change for the sustainability of green marketing practices. As consumers become more aware of the ecological issues, there is an increase in the demand for environmental products. This increased awareness of sensitivity towards environmental issues places certain demand on business functions to become greener. Thus in the present study, an attempt has been made to study the sustainability of green marketing in Kanniyakumari District.

Objectives Of The Study

The present study has been carried on with the following objectives

1. To study the profile of the green consumers in Kanniyakumari district.
2. To find out the factors influencing to purchase of green products.
3. To analyse the attitude of the respondents towards green products.

Scope Of The Study

The scope of the present study is limited to analysis of sustainability of green marketing in Kanyakumari District. The study includes the factors influence to purchase green products by the customers and their attitude towards green products in the study area. The study strives to provide the green marketers an impetus to a better understanding of attitude of green consumer, in order to target the right people and frame the marketing strategies accordingly.

Source Of Data

The study is based on both primary data and secondary data. Primary data have been collected from 130 customers with the help of a well designed questionnaire by following Judgment sampling method. Secondary data sources include information from journals and websites.

Tools For Analysis

Descriptive statistics like percentage analysis was used to describe the socio-economic and demographic variables of the sample respondents. In the present study, factor analysis has been applied to identify the factors influencing the purchase of green products and attitude of the customers towards green products.

Limitations Of The Study

1. Prejudice for the respondents might have caused errors.
2. This study is limited to Kanniyakumari district in Tamil Nadu. Hence the findings cannot be generalized.

Profile Of The Respondents

The parameters such as gender, age, education, marital status, type of family, occupation and monthly income of the family are considered in the present study to understand the profile of the respondents and are exhibited in Table 1.

Table 1. Profile of the Respondents

Profile Variables	Particulars	No. of Respondents	Percentage
Gender	Male	36	27.69
	Female	94	72.31
	Total	130	100
Age(in years)	Up to 25	30	23.08
	26 to 45	85	65.38
	Above 45	15	11.54
	Total	130	100
Educational Status	School Level	4	3.08
	College Level	107	82.31
	Professional	19	14.61
	Total	130	100
Marital Status	Married	79	60.77
	Unmarried	51	39.23
	Total	130	100
Type of Family	Nuclear	95	73.07
	Joint	35	26.93
	Total	130	100
Occupation	Employed	12	9.23
	Business/profession	105	80.77
	Others	13	10
	Total	130	100
Monthly Income	Below 25000	73	56.15
	25001 to 50000	35	26.92
	Above 50000	22	16.93
	Total	130	100

Source: Primary Data

It is found out from Table 1 that 72.31 per cent respondents are females. 65.38 of the respondents belonged to the age group of 26 to 45 years. 82.31 per cent of the respondents have undergone college education. 60.77 per cent of the respondents were married. The type of the family of the respondents revealed that 73.07 per cent of the respondents living in a nuclear family. 80.77 per cent of the respondents' occupation is business and 56.15 per cent of the respondents had a monthly income of below 25000. Thus, it is inferred that educated respondents with reasonably good income purchase green products.

Sustainability Of Green Marketing

Understanding customer behaviour helps a firm to seek better and effective ways to attain sustainability and satisfy customers. Customers decide the success or failure of a product. Thus in the present study, awareness of green attributes among customers, factors influencing the purchase of green products, the green products purchased by customers and level satisfaction towards the green products among customers have been studied.

Awareness Of Green Attributes

The researcher has analysed the awareness of green attributes among the customers. It is depicted in the Table

Sl.No	Particulars	No. of Respondents	Percentage
1.	Aware	98	75.38
2.	Not Aware	32	24.62
Total		130	100

Source: Primary Data

Table revealed that 75.38 per cent of the respondents are aware of green attributes and 24.62 per cent of the respondents replied that they do not have knowledge about green attributes. Thus, most of the respondents are aware of green attributes.

Factors Influencing To Purchase Green Products

Consumers are influenced by various factors which help them to determine the purchase of green products. Choosing a green products by the consumers require the consideration for attributes such as global warming, social benefit, environment and physical safety standard, quality, marketing activities, environmental awareness, environmental impact and other attributes. Twenty variables were taken into consideration for the study.

Bartlett's Test of sphericity value 2054.698 and the significance level ($p < .01$) indicates that the correlation matrix is not an identity matrix and there exists correlation between the variables. Higher value of Kaiser-Meyer-Olkin (KMO) test of sampling adequacy at 0.794 indicates that factor analysis, for the selected variables was found to be appropriate to the data.

Factor analysis was applied to find out the dominant factors influencing the purchase of green products by the respondents. The inter-correlations between the twenty variables were analyzed using Principal Component Analysis (PCA) and the Varimax Rotation of factor analysis. The results of Rotated Component Matrix of twenty variables along with the communalities are exhibited in Table. The values of the variables included in the factors are given in bold.

Table 2. Rotated Component Matrix

Variable	Component					Communality
	1	2	3	4	5	
Future generation	.758	.148	.021	.037	.027	.599
Protect Environment	.723	.117	.037	.040	.080	.546
Recycling	.640	.016	.084	.034	.170	.447
Natural Resource	.621	.014	.074	.193	.073	.422
Corporate Responsibility	.551	.177	.153	.360	.053	.491
Necessity	.164	.663	.048	-.066	-.052	.475
Government	-.033	.656	-.010	.327	-.060	.543
Price	.046	.636	.166	-.050	.047	.439
Quality	.243	-.171	.692	-.070	.068	.576
Variety of Products	.105	.079	.684	.046	.132	.504
Brand Image	.009	.205	.639	.306	-.066	.549
Packaging and labelling	.097	.209	.637	.277	.085	.544
Media	.102	.163	-.083	.765	-.098	.639
Reference Group	.295	-.055	-.067	.729	.038	.627

Competitive advantage	.088	.435	.114	.536	.188	.436
Product Promotion	-.046	.559	-.145	.526	.016	.612
Health Aspects	.206	-.026	-.014	.005	.737	.587
Awareness	-.053	.257	.033	.205	.641	.523
Availability	-.054	.434	-.130	.335	.524	.500
Self Esteem	.492	-.105	-.035	-.001	.516	.520
Extraction method: Principal Component Analysis Rotation Method : Varimax with Kaiser Normalisation						

Source: Primary Data

Table exhibits the rotated factor loading for twenty variables and their respective communality. It is observed that all the twenty variables have been extracted and were considered to be influential in the purchase decision of green products. The twenty variables were reduced to five factors. The consumer in the study area evinced the factor such as environment, price, product, sales promotion and personal factor as influential factor for making purchase decision of green products.

Influential Factors In The Purchase Green Products

Factor analysis of twenty variables relating to green products identified five influential factors. These factors along with the Eigen value, Percentage of variance and Cumulative percentage of variance are presented in Table 3

Table 3. Influential Factors to Purchase Green Products

Sl.No	Influential Factors	Eigen Value	Percentage of Variance	Cumulative Percentage of Variance
1	Environment	4.673	21.239	21.239
2	Price	2.607	11.852	33.091
3	Product	1.625	7.387	40.479
4	Sales Promotion	1.438	6.535	47.014
5	Personal	1.171	5.322	52.336

Source: Compiled Data

It has been observed from Table that the five factors such as environment factor, convincing factor, Marketing factor, social factor and personal factor were extracted. These factors accounted for about 52.336 per cent of variance in the data.

Eigen Value for first factor, 'Environment', was 4.673 and percentage of variance was 21.239. This factor provides the maximum influence to the respondents for the purchase of green products in the study area. Significant items under this factor were concern for future generation, protect environment, recycling and reduction of waste, conserve natural resources and corporate social responsibility.

Eigen value of Second factor, 'Price' was 2.607 and percentage of variance was 11.852. The green consumers have shown great concern towards factors such as necessity, Government and Price.

Eigen value of third factor, 'Product' was 1.625 and percentage of variance was 7.387. The buyers have shown the influence of marketing factor towards the purchase of green products. The concerns towards marketing factor are quality, variety of products, brand image and packaging and labeling.

Eigen value for the fourth factor, 'Sales Promotion' was 1.438 and percentage of variance was 6.535. The impact of society in the purchase decision of green product was found to be in the form of media, reference group and competitive advantage and product promotion.

Eigen value for fifth factor, 'Personal factor' was 1.171 and percentage of variance was 5.322. This factor provides least influence to the respondents for the purchase of green products in the study area. Important items under this factor were health aspects, awareness, availability, self esteem.

Thus, it is inferred from factor analysis that the environment factor, predominantly influences the purchase of green products.

Green Products Purchased By The Respondents

There are several eco-friendly products available in the market. The purchase of the products depends upon the willingness and attitude of the consumers. Multiple responses were received in the purchase of different types of green products by the respondents and the same is shown in Table

Table 4. Green Products Purchased by the Respondents

Sl.No.	Green Products	Frequency of Response
1.	Organic Fruits and Vegetables	303
2.	Clothing/Fabrics	104
3.	Solar Lamps/Heaters	64
4.	Accessories	37
5.	CFL Light Bulbs	214
6.	Grocery	236
7.	Paper bags/Cups/Plates	287
8.	Cosmetics / Body care	153
9.	Mobile Phones	5
10.	Furniture	75
11.	Foot wear	10
12.	Home Appliances	214
15.	Hand crafts	206

Table shows that 303 respondents purchased the organic fruits and vegetables, 287 respondents bought paper bags/cups/plates, 236 respondents bought grocery, 214 respondents used CFL light bulbs and home appliances, 206 respondents are purchased handicrafts, 104 respondents bought clothing and fabrics, 75 respondents purchased furniture, 64 respondents used solar lamps and heaters, 37 respondents used accessories 10 respondents used foot wear and 5 respondents purchased mobile phones.

It is inferred that majority of the respondents buy the green products such as organic fruits, vegetables and groceries, paper cup/bag/plates followed by CFL lights, handicrafts and home appliances too. The eco-friendly attitude was found the least towards purchase of foot wear and mobile phones in the study area.

Level Of Satisfaction Regarding Green Products

Satisfaction towards green products as a comparison between expectation and what is truly obtained by customers. Customers' purchase behaviour depends on the customers' level of satisfaction towards the product. Purchasing behaviour and customer satisfaction is mostly influenced by the attributes of the green products. Twelve variables are taken into consideration for the study.

Bartlett's Test of sphericity value 884.015 and the significance level ($p < .01$) indicates that the correlation matrix is not an identity matrix and there exists correlation between the variables. Higher value of Kaiser-Meyer-Olkin (KMO) test of sampling adequacy at 0.724 indicates that factor analysis, for the selected variables was found to be appropriate to the data.

Factor analysis was applied to find out the dominant factors influencing the purchase of green products by the respondents. The inter-correlations between the twelve variables were analyzed using Principal Component Analysis (PCA) and the Varimax Rotation of factor analysis. The results of Rotated Component Matrix of twelve variables along with the communalities are exhibited in Table. The values of the variables included in the factors are given in bold.

Table 5. Rotated Component Matrix

Variable	Component				Communality
	1	2	3	4	
Packing	.815	-.173	.041	.029	.697
Quality	.799	-.040	-.119	.130	.639
Usage	.779	.102	.051	-.058	.623
Comfortable	-.036	.828	-.031	.110	.701
Features	-.061	.763	.107	-.056	.600
Eco-Friendly	.284	.579	.333	.273	.410
Performance	.038	.570	.290	.186	.446
Cost	-.039	.011	.815	.170	.694
Guarantee	.052	.294	.605	-.429	.671
Availability	.449	.326	.540	.395	.466
Brand	.029	.078	.065	.812	.670
After sales service	.058	.226	.473	.582	.510

Source: Primary data

Table exhibits the rotated factor loading for twelve variables and their respective communality. It is observed that all the twelve variables have been extracted and were considered to be the level of satisfaction towards the purchase of green products. The twelve variables were reduced to four factors.

The consumer in the study area evinced the factor such as Quality, product, price and sales promotion factor decides the level of satisfaction regarding green products. The four factors are presented along with Eigen value, percentage of variance and cumulative percentage of variance.

Table 6. Influential Factors to Purchase Green Products

Sl.No	Influential Factors	Eigen Value	Percentage of Variance	Cumulative Percentage of Variance
1	Quality	2.813	23.440	23.440
2	Product	2.179	18.115	41.596
3	Price	1.096	9.136	50.732
4	Sales Promotion	1.038	8.650	59.381

Source: Compiled Data

It has been observed from Table that the four factors such as Quality, product, price and sales promotion factor were extracted. These factors accounted for about 59.381 per cent of variance in the data.

Eigen Value for first factor, 'quality', was 2.813 and percentage of variance was 23.440. This factor provides the higher level of satisfaction to the respondents for the purchase of green products in the study area. Significant items under this factor were packing, quality and usage.

Eigen value of Second factor, 'Product' was 2.179 and percentage of variance was 18.115. The green consumers have shown great concern towards factors such as comfortable, features, eco-friendly and performance.

Eigen value of third factor, 'Price' was 1.096 and percentage of variance was 9.136. The buyers have shown high level of satisfaction towards green products. The concerns towards the price factor are cost, guarantee and availability.

Eigen value for the fourth factor, 'Sales Promotion' was 1.038 and percentage of variance was 8.650. The impact of society in the level of satisfaction towards the green product was found to be in the form of brand and after sales service.

Thus it is inferred from the factor analysis that quality, product, price and sales promotion are the major factors that decides the level of satisfaction towards the green products.

Findings

The following are the major findings of the study.

- Educated respondents with reasonably good income purchase green products.
- Majority of the respondents are aware of green attributes.
- The consumer in the study area evinced the factor such as environment, price, product, sales promotion and personal factor as influential factor for making purchase decision of green products.
- Majority of the respondents buy the green products such as organic fruits, vegetables and groceries, paper cup/bag/plates followed by CFL lights, handicrafts and home appliances too. The eco-friendly attitude was found the least towards purchase of foot wear and mobile phones in the study area.
- Quality, product, price and sales promotion are the major factors that decide the level of satisfaction towards the green products.

Suggestions

- The study reveals that aged respondents give least preference to buy green products. So it is essential to convince the aged people to buy green products by creating awareness and reducing the price of green products.
- Majority of the respondents are aware of green attributes. It is a good sign for green marketing in the study area. But lack of availability is a limiting factor for the supply of green products. To enhance green marketing, production and distribution of green products should be increased.
- The major factors influencing purchase of green products are environment and price. So more number of eco-friendly products should be produced and marketed at a reasonable price.
- The demand for green products such as mobile phone, foot wear, furniture and accessories are limited in the study area. Awareness and availability of these products are essential for developing green marketing.

- The level of satisfaction regarding the price and sales promotion are low. Therefore price of the green products should be reduced and promotional activities must be improved.

Conclusion

Sustainability of green marketing is not simply a matter of compliance. The customers should be informed that the green products are less harmful and the more environmentally friendly relative to other products in the same category. The present study reveals that majority of the customers are educated youngsters aware of the significance of environmental protection. But the problems are lack of availability and sales promotion. If these problems are rectified by the authorities concerned the green marketing in the study area will be exemplary.

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A Study On Fuzzy Regression Model & it's Applications

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Abstract

Fuzzy regression is a non parametric technique which is fairly beneficial in assessing the associations between the variables where the existing information are imprecise and very limited and variables are involved in a qualitative, uncertain, and fuzzy way. This approach has been broadly used in recent years throughout the world. The regression study is a statistical implement which is cast off for prediction & this proceeds the assumptions of the Gaussian, in which the input data is very small. This fuzzy regression provides enhanced output when measured with the conventional tools. The recent analysis includes, providing the information literature and recent methods developed by different authors. Also, this review highlights the work done by different authors in different field of linear programming problem with the fuzzy interval estimation and fuzzy least squares. The study has revealed that the greater part of studies are based on fuzzy regression models with a linear programming method using dissimilar fuzzy numbers.

Introduction

Regression analysis is an influential method for forecasting and modelling in the conventional deterioration study. Information should be brittle then shadow the Gaussian supposition in this analysis. If the statistics set is less, vagueness & uncertainty occur in this situation. For this, fuzzy regression model is appropriate and bounces improved fallouts. If the data set is crisp and fuzzy then the Fuzzy regression model has to be used. While conventional regression is suitable for only brittle data. The fuzzy regression model is practical to the cost device of prefabricated houses, assessing the useful association between dependent and independent variables in a fuzzy environment, functional to a variety of problems such as forecasting, idea of increasing decision making problems, a fuzzy technique to multi-objective linear programming problems, fuzzy linear programming difficulty with fuzzy coefficients. A preparation of fuzzy linear programming difficulty with fuzzy constraints and the techniques for its result on inequality relation among fuzzy numbers was proposed

II. Analysis Of Fuzzy model Using Regression Linear And Nonlinear Method Based On Fuzzy Concepts

This model was considered to reduce the addition of triangular fuzzy numbers and offers an enhanced prediction than the common regression analysis. Review of the Fuzzy regression model, given by various authors is explained as follows

Fangning Chen et. al. [2015], proposed that the limit h in a fuzzy linear regression model is very important as it affects the amount of the predictable fuzzy linear association of the known data straightly. However, it's miles regularly preselected by way of a decision-maker as a

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key to the version in practice. A new thought of device credibility become delivered by becoming a member of the system uncertainty with the machine association degree, and an prepared technique was projected to make effective use of the h cost for fuzzy linear regression examination the use of the least fluffiness rule with symmetric triangular fluffy coefficients. In this paper, the technique is enlarged in asymmetric cases, and the method to find the best possible h value to make best use of the system credibility. Some descriptive examples are set to demonstrate the complete process of this approach, and relative studies are also conducted via the test data sets.

Muhammad Ammar Shafiet.al. [2015], Introduced fuzzy regression model to determine the Tumour size of colorectal cancer in Malaysia. Analysing the regression has become well-liked among numerous fields of research and typical tools in analysing data. This association was constituted by means of four numerical models which includes more than one direct relapse, fluffy straight relapse, fluffy linear regression and extended fuzzy linear regression by using comparing fashions under fuzziness.

Colorectal cancer was functional in CRC patients in Malaysia. The CRC patients' value of life is to notice the CRC at the beginning stage is still very bad, the programmes are chiefly ad-hoc and not executed as a world wide programme. This paper aims to find out the best model to calculate the tumour size at hospitals using mean square error and root mean square error. Resulting data were used where patients suffering from colorectal cancer and getting treatment in hospitals were gathered by nurses and doctors. Based on the results, fuzzy linear regression is the best model to calculate the tumour size elaborated by patients after undergoing treatment in hospital.

Xu Jialu & Lu Qiu jun et.al [2014] demonstrated that the "OUTLIER DETECTION IN FUZZY LINEAR REGRESSION ABOUT PREDICTING GDP GROWTH". The correctness of regression model may have some twist when the observed statistics data exists away. This study is to lessen the isolated effect in analysing GDP growth on the consideration of the fuzzy linear regression approach. The result is effectively analyzed the performance of the model.

H. Zareamoghaddamet.al [2014] proposed that the numerical value of fuzzy linear regression based on the least squares approach is computed by the ST-decomposition method. This technique is not a mathematical technique, however, it is a dominant approach for non singular coefficient matrices. Numerical examples are at the conclusion of this document to demonstrate the act of the new method.

Hande Gunay Akdemir et.al [2013] proposed a paper which stated that every year, millions of square metres of forest land are damaged by fires leading to huge financial loss and ecological damage. In this paper, by using fuzzy linear regression analysis the cause of the difference of meteorological conditions on the whole burned area in hectares is learned. The whole burned area is known as the dependent variable. Independent variables are air temperature, relative humidity, wind speed and rainfall. The relationship between input and output data is estimated using data provided in the data mining literature. In our study, fuzzy regression is applied using fuzzy input data and fuzzy output data are displayed in linguistic terms.

S. Arulchinnappan et.al [2011], demonstrated a paper which provides a fuzzy linear regression approach for the calculation of inverse osmosis spread value conditions. The proposed structure can efficiently take on non-brittle, fuzzy and brittle data. This paper used for evaluation of inverse osmosis permeating valuable information and examines the

variables that donate to the fall of the layer. This outcome shows the capacity and proficiency of the proposed model to dole out film. The examination framework requires an exact and a proficient forecast.

III. Fuzzy Regression Method Using Least Square

The Fuzzy regression version used as least square techniques, enter fuzzy output, fuzzy input crisp output, crisp input crisp output and fuzzy input fuzzy output, and many others. Fuzzy least squares had been Designed through distinct authors assessment summarized beneath.

Ubale AB et.al [2016] , proposed to prepare a multiple fuzzy linear regression model using brittle input/output to examine the association between descriptive and response variables to estimate the model parameters. For thecurrent study, the fuzzy linear regression model is based on fuzzy linear function. Relative study of fuzzy multiple regression model and theusual multiple regression model is done at the source of coefficient of strengthwhich is used as a kindness to fit for both the models. Finally, a numerical example is given for demonstration of the results. It is recognizedthat the fuzzy multiple regression model is more fit than the usual multiple regression model which results in a superior coefficient of determination

Zhi-Wen Zhao1 et.al[2013] proposed a paper that extends the autoregressive model to the situation where the logical and answer factors are irregular fluffy factors. The fluffy least-squares estimates of the model values arethe resultant and their asymptotic things are recognized. A process is carried out to estimate the technique and it is known that the future method provides animprovedfunction.

JinHeet.al[2013] proposed a paper deals with process of fuzzy least squares evaluation of the linear regression model with input-output data based on fuzzy concept that has afaultarrangement. The paper proposedfuzzy least squares estimators for regression values depending on an appropriate metric, and displays that the estimates are fuzzy-type linear estimators. To find these estimates, aconcept of triangular matrices based on fuzzy concepts is defined whose compoundsare given as triangular fluffy numbers, and offers a few activities among all triangular fluffy networks. Basic computational instances of this application are given.

Chen yongqi et.al [2012] proposed a method. In this paper, aLS_SVFR is projected to estimate impreciseand uncertain data by relating the principles of fuzzy sets in weight vector. Determining the bias term and weight vector of this techniqueneeds only a group of sequential equations, as in opposition to the solution of a complex quadratic programming problem with an earlier fuzzy regression analysisof support vector. A Numerical samples given to exhibit the applicability and use of the developed model.

Fatemeh et.al [2011] proposed a paper in which the procedurecritically involves byexamining a fuzzy least-squares linear regression method to evaluate the demands of stochastic in the manner of vehicle routing problem (VRP) withattention to the customer's preference order. A FLLR technique is anticipated in cracking the VRP with the demands of stochastic: estimated- distance fuzzy least-squares (ADFL) estimator ADFL estimator is proposed or applied to original data taken from a case study. The SSR value of the real demand and ADFL estimator are found and then compared to values of SSR of the real demand and nominal demand. Empirical results presented that the developedmethod can be feasible in resolving problems under the conditions of having impreciseand vague performance ratings. The results moreshowed that ADFL application was anefficient

estimator and realistic to face the stochastic demand challenges in vehicle routing system management and solve relevant problems.

IV. Fuzzy Regression Model Using Left, Right Fuzzy Number

The Fuzzy regression model used as left, right fuzzy numbers. Used as fuzzy and crisp data developed model enhanced accuracy than the usual regression model. The different researches, review as summarizes below.

Somayeh Ezadi [2017] proposed a method. In this method, the improvement of a fluffy neural system depended on idea of likelihood work for assessed yield of fluffy relapse models with test genuine info and fluffyyresult has been considered. The proposed technique or method is a fuzzification of the yields and loads of the typical fluffy neural system dependent on likelihood work. The mistake of the proposed technique depends on all out square blunder is limited by advancement strategy so as to have the option to get the ideal loads of the neural system. The upside of the proposed strategies is its effortlessness and calculation just as its presentation. To think about the developed method performance with the other conventional methods, several arithmetical examples are presented.

Riswan Efendi [2017] developed a new technique that explains the numerous models have been applied in the energy zone, particularly in the electricity load usage vary from the statistical to the AI fashions. Though, most of these models do not consider the elements of randomness, uncertainty, and the opportunity of the time series records into the forecasting model. These factors provide effect to the predicted model's coefficients and also the forecasting accuracy. In this observe, the fuzzy random automobile-regression model is usually recommended to crack three conditions, they are factors of randomness, uncertainty, and the time series data probability into the forecasting model. The forecasting accuracy and finest confidence interval valuation are enhanced through regulating of the left-right ranges of triangular fuzzy numbers. From the year 1981 to 2000, the yearly electricity load intake of North-Taiwan is inspected in assessing the three different left-right spreads of fuzzy random auto-regression model performance and certain current models, correspondingly. The result specifies that the minor left-right range of triangular fuzzy number offers the enhanced forecast values if associated with based line models.

Rahim Saneifard [2011] proposed a method. In this, an assessed fuzzy number which has the fuzzy membership function was delivered by the Fuzzy linear regression models. The decision maker will have a greater risk from estimation if a point has a great membership value from the anticipated fuzzy number and it is not within the help of the perceived fuzzy membership function. In this study, a new distance is computed between the fuzzy numbers is proposed. On the base of this figured separation, a development of fluffy least square relapse strategy in the two cases in particular, customary information factors and ward variable of polynomial-type.

V. Fuzzy Regression Model Used Interval Estimator

The Fuzzy regression model used for fuzzy data and crisp data for estimating parameters and Minimizing residual by the different authors in the different field proposed methods were better accuracy than conventional regression analysis. Review summarized below..

Hye-Young Jun et. Al [2015], Proposed a new method. In this, a method has been investigated to get a predicted or assumed output with respect to a particular target value. The author suggested that the rank transformation method in fuzzy regression model was better performed than the fuzzy regression model of Chen and Hsueh and Diamond.

VI. Conclusion

This review has undertaken on fuzzy regression model using linear and nonlinear programming problem, fuzzy regression analysis using least square method, fuzzy regression analysis used left and right fuzzy numbers and fuzzy regression method used in interval estimation. Some authors were suggested that fuzzy regression model in different field for prediction purpose was better performance than conventional regression analysis. The researchers were developed various algorithms for predicting fuzziness and vague phenomenon with linear programming, fuzzy least square, interval estimation and right-left fuzzy numbers suitable for prediction.

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A Study To Identify The Factors Affecting Consumer Behaviour Towards Herbal Products And Mediating Impact Of Consumer Awareness And Perceptions

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Abstract: Current study aims to identify the factors affecting consumer behaviour towards herbal products and mediating impact of consumer awareness and consumer perceptions towards the herbal products. The study was based on the opinions of the 423 consumers towards the five major brands of herbal products namely; Patanjali, Himalaya, Khadi, Biotique and Organic India; collected through questionnaire using emails, and personal interactions. Data was analysed using regression method. It was found that the consumer behaviour towards the herbal products mainly gets affected by the media advertisement, service offers, social campaigns and indirect peer marketing and their level of perception towards these products. The model which has been developed based on the study highlighted the significant impact of four independent variables media advertisement, service offers, social campaigns and indirect peer marketing on the consumer buying behaviour towards the herbal products where customer perceptions plays an important role and significantly mediates the relationship between dependent and independent variables.

Keywords: Herbal products, consumer behaviour, customer perceptions, customer awareness, India, service offers, social campaigns and indirect peer marketing.

Introduction

Steluta and Augustine (2017) underline the importance of customer's attitude in defining their buying behaviour towards different brands. The utilization of certain brands governs the attitude and future buying decision of consumers regarding the particular brand. Once the consumers are satisfied with the features of the products of a particular brand, he does not incline towards other brands. He attempts to make re-purchase decisions regarding that particular brand in the long run. This enable the particular brand secure the stable customers and this also act as a valuable source of product publicity as well. Therefore, the manufacturers must provide all the facilities to the consumers to retain them and influence their preferences for long. Perceived price, perceived quality, perceived risk and perceived brand image strongly influence the approach and buying intent of consumers. besides, gender, marital status and education of consumers are equally influential in framing the buying behaviour. All the factors must form the integral part while designing and selling the electronic products (Kumar and Kaushal, 2017). Brand awareness among the consumers, alternatives of brand available, product features and element like family and social status, product promotion as well as brand loyalty are the important thespians framing the purchase decisions of the consumers. hence, paying proper heed to these important elements is essential for retaining the customers (Mittal, 2016). Brand consciousness has strong

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influence on consumer's purchase intentions for Islamic brands. Therefore, marketers are supposed to ensure that the Islamic brand products must be able to give utility to the ultimate consumers on the other hand they must design the products keeping in view their religious values (Kusumawardhini et al., 2016). Convenient location, store dealing with organic products, quality of the products and its benefits to health, discount schemes to regular customers, home delivery of the products are the major factors that influence the customer's intentions to buy the healthy products even at high prices. The producers and stores must understand the exact demand and buying psychology of the consumers while designing and selling their products (Indumathi and Dawood, 2016). Certain factors like product side effects, Halal certification, brand loyalty, country of the product's origin, demography, competitive price from the local brands and economic status of households have positive influence on the women's intentions to buy the products of specific brand. Women are very conscious regarding the products they are using to enhance their beauty and utility. Hence, the brand industry must include all these factors to ensure that the product would be the foremost choice of women consumers (Azmi et al., 2016).

Review of Literature

Nam et al. (2017) made an enquiry into the factors affecting the consumer's purchase intentions of green sportswear. The data was collected from 542 respondents who were the green and non-green customers between 18 to 74 age group in U.S. Expectations, perceptions, subjective norms, perceived behaviour control and attitude of the customers are the main factors impacting their decisions to buy green sportswear. It reveals that effects of expectations and perceived behaviour control have magnificent impact on consumer's green sportswear purchase. The study also emphasizes on the need to develop precise strategies by the sportswear apparel retailers to satisfy the expectations and values of the respective customers.

Gautam and Medhavi (2017) examined the challenges encountered by the consumers while shopping the durable products online. Internet has revolutionized by ways to shop by providing a wide range of products just at the click of a button. Internet enables the customers to get quick access to the numerous products, their prices, performances, wider range and user's reviews, which help them to make comparisons and purchase decisions. The study foregrounds that the absence of actual purchase experience like inability to touch and feel the product, sharing the personal as well as card details, difficulty in returning and complex return policies, waiting for the product deliver and being the target market for the future are the biggest problems, which consumers are exposed while shopping the products online. Therefore, it is required that the online companies must incorporate certain simple and significant measures to help the customers feel easy while making the purchase decisions.

Eswari and Subramaniam (2017) investigated the purchase behaviour of 145 respondents over 5 selected durable goods from selected areas of Pudukkottai District, Tamil Nadu. The study shows that demographic factors are not closely associated with the attributive awareness of the product. The study also reveals that satisfaction from the product is the foundation of their decision making. Further, there is no brand loyalty among the customers. Therefore, a more sophisticated and technical approach is required. The system is needed to be transparent, product refinement as well as adoption of new market strategies are required to improve the product quality and to reduce the possibility of brand flogging.

Walia and Singla (2015) analysed the major factors influencing the customer's decisions to purchase cellular phones. The data was collected from 300 respondents who are employed

in Government and Non-Government organizations in Patiala, Punjab. Cell phone's price, brand name, handling ability, external appearance, durability features have positive and significant influence on consumers purchase decisions. Consumers are ready to purchase the products at distinctive prices keeping in account their specialties and features. Cell phone manufacturing industry has to update the features of its products so as to satisfy the consumers and get the benefits too in terms of cost benefits and profits.

Kumar and Anand (2015) in their exploratory and explanatory work, elucidate the impact of innovation, green advertising and perceived behavioural control on green consumer behaviour. The sample of the study was 1300 respondents from Telangana State, India. The study depicts distinctive trends encapsulating that married people and especially women are more cognizant towards environment and education level of the employees is directly correlated with their preference for the eco-friendly goods. The study also highlights that the consumers who prefer green are eco-friendlier. Hence, marketers must target the focus green groups and construct strategies to aware others in order to lessen the social and environmental cost which would be beneficial for both environment and people as a whole. Meng and Wei (2015) corroborated that internet has changed the definition of purchase and commerce as consumers are quite well aware of the current trends in the market with the click of the mouse. The data was collected from 487 respondents who are the students from Hangzhou and Naging Universities, China. The study clarified that online opinion leaders' professional knowledge, fame, product's innovation interactivity act as an important source of 'word-of-mouth' publicity. Thus, proper check is essential by the concerned authorities that there is no misappropriation of the information as these opinion leaders' views have a strong impact in shaping the buying intentions and perceptions of the customers. The information has to be checked and tallied so as to depict the clear cut aspects related to the products.

Sharon and Sulaiman (2014) investigated the perceptions and purchase intents of Malaysian consumers towards the low investment products made in Malaysia and China. The study highlighted that place of product's origin, its price, quality, aesthetics, performance, durability and ethnocentrism have significant influence on the purchasing intentions of the consumers. Purchase intention is strongly influenced by the 'word-of-mouth' publicity of the product. The study reveals that international products have the tendency to replace the locally made products. Hence, local manufacturing industry has to improve their merchandise to compete in the global market by making strategical changes.

Durmaz (2014) examined the different aspects related to consumer's buying intentions. The data was collected from 1400 respondents who are chiefly the residents across age and gender from 2 cities of 7 regions in Turkey. The study reveals that majority of the consumers prefer shopping from product related stores. The environment of the stores, friends, employment, beliefs, culture, sub-culture, traditions, occupational social group are the prominent factors that influence the customer's buying behaviour. These factors are necessary to be taken into consideration while manufacturing, promoting and selling the products to the customers.

Singh et al. (2014) explored the customer's perceptions and purchase intents towards green products in FMGC sector. The growing awareness of saving environment has led to their attitudinal change. The study reveals that consumer's satisfaction and 'word-of-mouth' publicity plays an important role in consumer's buying decisions leading to increase in sales. Market shares and brand loyalty of the green products. Besides, it is also found that

product' attributes have a significant impact on the consumer's purchase intentions. The preference for the green products is influenced by their eco-friendly attitudes and their aim to preserve the planet. Hence, it is substantial to popularize the good traits of eco-friendly products so that the consumers must be able to make decisions regarding the re-purchase in the near future.

Haytko and Matulich (2014) ascertained the correlation between the green advertising and environmentally responsible consumer's behaviours. The study highlights that females are more environmentally responsible and have optimistic outlooks towards green aspects. The consumers are also willing to pay more for such kind of eco-friendly goods. They are quite well aware regarding the importance of preserving the environment as it is annihilating in the hands of malpractices. The study emphasizes on the re-examination of these aspects from time to time to handle the gauntlets that act as impediments to the nature and wellbeing of mankind.

Rajeshwari and Pirakatheeswari (2014) enquired into the consumer's psychology and foregrounds the major factors that influence their buying intentions. The demand of the consumers keeps changing due to some external and internal factors. The study analysed the sample of 50 respondents from Salem City. Consumer's buying behaviour is mostly influenced by opinions of others and family members. The price, colour, brand, offers, technology features, brand image, design and model of the products as well as celebrity attached to the particular brand product are the most influential factors. A marketer who understands the behaviour of the consumers and plan the marketing strategies become able to grab his target market and get competitive advantage.

Kandasamy (2014) investigated the influence of customer brand perceived quality on the buying intention towards durable products. The data was collected from 200 customers in Bangalore. Many factors like age, educational qualification, monthly income, marital status and family size affect the buying behaviour of the consumers for the particular product. It is evident from the study that perceived quality has direct bearing on the consumer's intentions to buy the durable products which enable the retailers to get the price premium for the products produced. This premium is further utilized by the manufacturers to strengthen their relationships with the customers by changing and updating the product design. It is also found that perceived quality benefits the product business in the long as a strong brand with stable perceived quality is capable to extend its market share and experiment with brand extensions in the new markets.

Coelho et al. (2013) made an analysis of the consumer's buying behaviour towards the smartphones. The data was collected from 339 respondents who were the users of smartphones. The study found that price awareness, quality perceptions, technology perceptions, social and functional risks as well as brand awareness have the direct influence on the consumer's decisions for these products. It is highly influenced by the technology perceptions. The study also stressed on the inclusion of certain important variables like after-sale services, assistance and return period, variety of products and brands, analysis of influence of store image are essential to be taken into account as it has great influence on the sale of the brand.

Macik et al. (2013) highlighted the multiple aspects relate to the customer's preferences for different retail formats and channels. The study was undertaken with 2200 polish consumers to identify their behaviour approach. The study reveals the physical retail channels have more tendency to update to compete with the virtual channels. The online stores are mostly

preferred with emotional attitudes towards them. Discount stores are more positively preferred by the customers. The study also depicts the fall in the shopping frequency with the age towards both the retail channels. Consumers also avoid internet retail formats due to the fear of frauds and logistics failures.

Sathya and Vijayanthi (2013) made an appraisal of consumer's behaviour towards consumer durable goods. Rise in disposable income, availability of the product alternatives, diverse product prices, availability of financing schemes, innovative advertising practices, sales and discount strategies are reckoned as key drivers of steering growth in Indian consumer durable industry. The sample of the study was 90 respondents who are mainly the consumers from Thiruvavur District. Many cultural, social, personal and psychological factors influence the buyer's decision making. Hence, the producers and marketers must focus on the goods preferred by the consumers as they are the king pin in shaping the market trends.

Ratna (2011) analysed the perceptions and purchase behaviour of customers towards durable products. The data was collected from 600 respondents consisting 300 urbans and 300 rural customers from Guntur District across lower, middle and higher income groups in Andhra Pradesh, India. The study depicts that consumer's cognition, emotions, culture, class, product price, quality, variety, packaging, advertisement of products, consumers' past experience and convenience are the core factors that influence the purchasing patterns of the consumers. Consumer's post purchase experience and satisfaction, which influence his further buying intentions for the products. The study stresses on implementing some suitable marketing strategies by the companies producing the consumer goods by keeping a track of their target population.

Mathi and Saraswathi (2011) in their research work, made an appraisal of factors having impact on the rural consumer's buying behaviour towards durable goods. The study was undertaken with the 150 respondents of Erode District in Tamil Nadu. The consumer's economic status has a strong impact on their frequent purchases. The quality of the product plays an important role in shaping the consumer's intentions. The study stresses on developing a multidimensional approach by the marketers to identify the potential customers and design the product as per their needs and keeping the consumer's updated with improvised promotional strategies.

Chang and Hsiao (2011) analyse the importance of vehicle-based infotainment system in influencing the consumer's automotive purchase decisions. The sample of the study comprised 319 consumers from Taiwan. It is clear from the study that car's infotainment system influences the customer's willingness to purchase the car. The usefulness, convenience and driving safety measures have positive correlation with their purchase decisions. The study also shows that price of the car has negative influence on their buying decisions as the satisfaction of the customers matter a lot. They are ready to pay the high price if they are gratified with the quality, design and build of the car. Hence, the study suggests the need of regular Research and Development too provide update and maximum safety, comfort and advantage to the customers.

Kamal (2010) in the work illuminated that the consumer's product as well as patronage motives govern the buying patterns of the customers. There are many steps involved in decision making process ranging from recognition of the need to buy, gathering the information regarding the product and the alternatives available in the market and making the decision on the basis of certain decisions. There are numerous substitutes of the product

are available in the market which provides a healthy competitive advantage to the products over each other. The study draws the attention towards the importance of post-purchase aspect, which serves as an important tool in shaping and reshaping the important their intents to buy the specific product or make changes regarding their choices. Hence, an in-depth analysis is required so as to keep the consumer satisfy. The post purchase services must be strengthened at all the levels as to enable the consumers to keep their good faith regarding the brand.

Koklic and Vida (2009) in their work analysed the house-buying behaviour of consumers. The study was undertaken with the households in Slovenia. It is found that many internal factors like individual's motivation, involvement, personality, self-confidence, knowledge and prior experience influence their buying intentions the most. Besides, idiosyncratic features like role of feelings, sub consciousness, needs, goals, personal situations and environmental factors are also taken into account by the consumers. Their needs and desires are necessary to be taken care by the manufacturers so that it could cater to their demands and satisfy them.

Priyadarsini and Vinoth (2009) in their study made an attempt to evaluate the expectation of GEN Y customers from B schools for Higher Studies. The study was undertaken with the sample of 114 millennials who are chiefly from the Coimbatore District. The study reveals that GEN Y is not satisfied from the B schools. Thus, some innovative ways are substantial to enhance quality of education by introducing transparency in the service delivery, counselling of the customers regarding their aspiring echelon of expectation, timely improvements in the delivery patterns to keep at par with the mushrooming and fluctuating pace of the exigencies of customers as education is a very important and productive instrument for the progress of sodality.

Objective of the Study

1. To measure the impact of Service Offers, Social Campaigns, Indirect peer marketing, Media Advertisement on customer buying behaviour towards the herbal products.
2. To measure the mediating impact of Customers' awareness, Customers' perceptions, on the relationship between Service Offers, Social Campaigns, Indirect peer marketing, Media Advertisement and customer buying behaviour.

Research methodology

In the current study, researcher has made use of both the primary and secondary data. Primary data has been used to study the evolution of consumer behaviour. Secondary data has been used to have a deep understanding about the factors affecting consumer behaviour towards the herbal products in Indian context. Researcher has collected the secondary data to understand the concept of consumer behaviour. Data has been derived from the various data bases such as, EbSco, ProQuest, emerald, springer, Google Scholar and various other offline data basic such as; departmental library. Researcher has also extracted the reports on Indian retail sector and global retail sector. Apart from this, data from various websites have been accessed such as; government websites, retail India, and many other online sources etc. Researcher has collected the primary data related to the opinions or the perception of customers towards herbal products, using various close ended questions. For this purpose, researcher has used well-designed questionnaire and served this questionnaire personally to each of the respondents. Researcher has collected the primary data during January 2019 to February 2019. The results of reliability test showed that the alpha value for the questionnaire was above 0.70, which is acceptable value of alpha and it can be said that the

questionnaire is reliable.

Respondents Profile

The following section exhibits demographic characteristics of the respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 25 years	85	20.1	20.1	20.1
	25-35 years	174	41.1	41.1	61.2
	35-45 years	86	20.3	20.3	81.6
	Above 45 years	78	18.4	18.4	100.0
	Total	423	100.0	100.0	

The above table 1 represents the age group of the respondents. As per the above frequency table, majority of the e-customers i.e. 41 percent fall under the age group of 25-35 years while one-fifth of the e-customers fall in the category of below 25 years or in the category of 35-45 years. Only 18 percent of the e-customers are of age above 45 years which implies that the youngsters primarily in the age group of 25-35 years are more inclined towards online shopping.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	191	45.2	45.2	45.2
	Female	232	54.8	54.8	100.0
	Total	423	100.0	100.0	

The above table 2 represents the gender of the respondents. Majority of the e-customers i.e. 54.8 percent were females while only 45.2 percent of e-customers were males. This implies that females are more inclined towards online shopping than males.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Maharashtra	118	27.9	27.9	27.9
	Tamil Nadu	102	24.1	24.1	52.0
	Delhi	131	31.0	31.0	83.0
	Madhya Pradesh	72	17.0	17.0	100.0
	Total	423	100.0	100.0	

The above table 3 represents the city to which the respondents belong. As per the above frequency table, majority of e-customers i.e. 31 percent belong to Delhi followed by 27.9 percent from Maharashtra, 24 percent from Tamil Nadu while only 17 percent of the e-customers were from Madhya Pradesh. This implies that majority of the e-customers involved in online shopping are from Delhi.

Table 4: State					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mumbai	118	27.9	27.9	27.9
	Chennai	102	24.1	24.1	52.0
	Delhi/NCR	131	31.0	31.0	83.0
	Bhopal	72	17.0	17.0	100.0
	Total	423	100.0	100.0	

The above table 4 represents the state to which the respondents belong. As per the above frequency table, majority of the e-customers were from Delhi/NCR followed by 27.9 percent from Mumbai, 24.1 percent from Chennai. Only 17 percent of e-customers were from Bhopal. This implies that majority of the e-customers involved in online shopping are from Delhi.

Table 5: Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Till Matric	13	3.1	3.1	3.1
	Undergraduate	39	9.2	9.2	12.3
	Graduate	152	35.9	35.9	48.2
	Post-graduate or higher	219	51.8	51.8	100.0
	Total	423	100.0	100.0	

The above table 5 represents the education status of the respondents. Majority of the e-customers i.e. 51.8 percent were post graduate or had acquired higher education while 35.9 percent were graduates. While only a meagre percentage i.e. 9.2 percent e-customers were undergraduates and 3.1 percent were only metric passed. The above table implies that e-customers having attained higher level of education i.e. graduation or above are more inclined towards online shopping.

Table 6: Employment Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	99	23.4	23.4	23.4
	Unemployed /Homemaker	76	18.0	18.0	41.4
	Employed	233	55.1	55.1	96.5
	Owner/ Self-sufficient	15	3.5	3.5	100.0
	Total	423	100.0	100.0	

The above table 6 represents the employment status of the respondents. Majority of the e-customers i.e. 55.1 percent were employed followed by 23.4 percent of the e-customers were students. Only 18 percent were homemakers or unemployed while 3.5 percent of the e-customers were self-sufficient. This implies that the people who are employed or the students primarily depend on online shopping.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 25,000	87	20.6	20.6	20.6
	25000-50000	156	36.9	36.9	57.4
	50000-100000	165	39.0	39.0	96.5
	More than 100000	15	3.5	3.5	100.0
	Total	423	100.0	100.0	

The above table 7 represents the income level of the respondents. As per the above frequency table, majority of the e-customers i.e. 39 percent fall in the income group of 50000-100000 followed by 36.9 percent fall in the income group ranging from 25000-50000 while 20.6 percent e-customers fall in the income group of below 25000. Only 3.5 percent of the e-customers belonged to the income group of more than 100000. Thus, the majority of the e-customers relying on online shopping fall in the income group ranging from 25000-100000.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 10000	56	13.2	13.2	13.2
	10000-15000	162	38.3	38.3	51.5
	15000-25000	150	35.5	35.5	87.0
	More than 25000	55	13.0	13.0	100.0
	Total	423	100.0	100.0	

The above table 8 represents the disposable savings or the shopping budget of the respondents. As per the frequency table, majority of the customers i.e. 38.3 percent of the e-customers have a shopping budget ranging from 10000-15000 while 35.5 percent of e-customers have their budget ranging from 15000-25000. Also, only 13 percent of the e-customers shopping budget ranges either below 10000 or more than 25000. This implies that majority of the e-customers with disposable income ranging from 10000-25000 rely more on online shopping.

Mediation Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.454 ^a	.206	.203	1.19427	.206	54.608	2	420	.000
2	.897 ^b	.804	.801	.59673	.597	316.568	4	416	.000

a. Predictors: (Constant), Customers' awareness, Customers' perceptions
 b. Predictors: (Constant), Customers' awareness, Customers' perceptions, Service Offers, Social Campaigns, Indirect peer marketing, Media Advertisement

The above table depicts the goodness of fit of the model. R-square is found to be .206 i.e. 20.6% of the variation in the model has been explained by the independent variables i.e. customers' awareness and customers' perceptions which implies that the model is a poor fit.

However, on accounting for additional independent variables it is found that the R-square is .801 i.e. 80.1% of the variation in the model had been explained by the independent variables which are customers' awareness, customers' perceptions, service offers, social campaigns, indirect peer marketing, media advertisement. Hence, such a model accounting all the independent factors including customers' awareness, customers' perceptions, service offers, social campaigns, indirect peer marketing, media advertisement model is a good fit.

Table 10: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	155.772	2	77.886	54.608	.000 ^b
	Residual	599.037	420	1.426		
	Total	754.809	422			
2	Regression	606.676	6	101.113	283.954	.000 ^c
	Residual	148.133	416	.356		
	Total	754.809	422			
a. Dependent Variable: Consumer buying behaviour						
b. Predictors: (Constant), Customers' awareness, Customers' perceptions						
c. Predictors: (Constant), Customers' awareness, Customers' perceptions, Service Offers, Social Campaigns, Indirect peer marketing, Media Advertisement						

The above table reveals the results of F-test: F-value of customers' awareness and customers' perceptions is found to be 54.608 at a p-value of .000, which is significant at 5 percent level of significance. Hence, null hypothesis is rejected which states that there exists no significant difference in consumer buying behaviour in context of customers' awareness and customers' perceptions. Thus, there exists significant difference in consumer buying behaviour in context of customers' awareness and customers' perceptions.

Further, it reveals that F-value of Customers' awareness, Customers' perceptions, Service Offers, Social Campaigns, Indirect peer marketing, Media Advertisement is found to be 283.954 at a p-value of .000, which is significant at 5 percent level of significance. Hence, null hypothesis is rejected which states that there exists no significant difference in consumer buying behaviour in context of Customers' awareness, Customers' perceptions, Service Offers, Social Campaigns, Indirect peer marketing, Media Advertisement. Thus, there exists significant difference in consumer buying behaviour in context of Customers' awareness, Customers' perceptions, Service Offers, Social Campaigns, Indirect peer marketing, Media Advertisement.

Table 11: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.709	.473		-3.610	.000
	Customers' perceptions	1.051	.108	.427	9.748	.000
	Customers' awareness	.209	.082	.111	2.535	.012
2	(Constant)	-6.005	.307		-19.534	.000
	Customers' perceptions	.519	.057	.211	9.181	.000
	Customers' awareness	.065	.041	.035	1.577	.116
	Media Advertisement	.467	.041	.377	11.276	.000
	Service Offers	.574	.054	.281	10.568	.000
	Social Campaigns	.289	.064	.126	4.492	.000
	Indirect peer marketing	.704	.066	.274	10.606	.000
a. Dependent Variable: Consumer buying behaviour						

The above table depicts the results of t-test for two models. In the first model, t-value of customers' perceptions is found to be 9.748 at a p-value of .000 and t-value of customers' awareness is found to be 2.535 at a p-value of .012. Both the variables are statistically significant at 5 percent level of significance; hence we reject our null hypothesis that both the variables are statistically insignificant. Additionally, t-value of consumer buying behaviour is found to be -3.610 at a p-value of .000 which is also statistically significant at 5 percent level of significance. Thus, all the three variables i.e. customers' perceptions, customers' awareness and consumer buying behaviour are statistically significant.

In the second model, t-value for all the variables was found independently i.e. 9.181 for customers' perceptions at a p-value of .000, 1.577 for customers' awareness at a p-value of .116, 11.276 for media advertisement at a p-value of .000, 10.568 for service offers at a p-value of .000, 4.492 for social campaigns at a p-value of .000 and 10.606 for indirect peer marketing at a p-value of .000. All the variables were found statistically significant at 5 percent level of significance except customers' awareness. Additionally, t-value of consumer buying behaviour was found to be -19.534 at a p-value of .000 which is also statistically significant at 5 percent level of significance. Hence, we can say all the variables customers' perceptions, media advertisement, service offers, social campaigns and indirect peer marketing are statistically significant except customers' awareness.

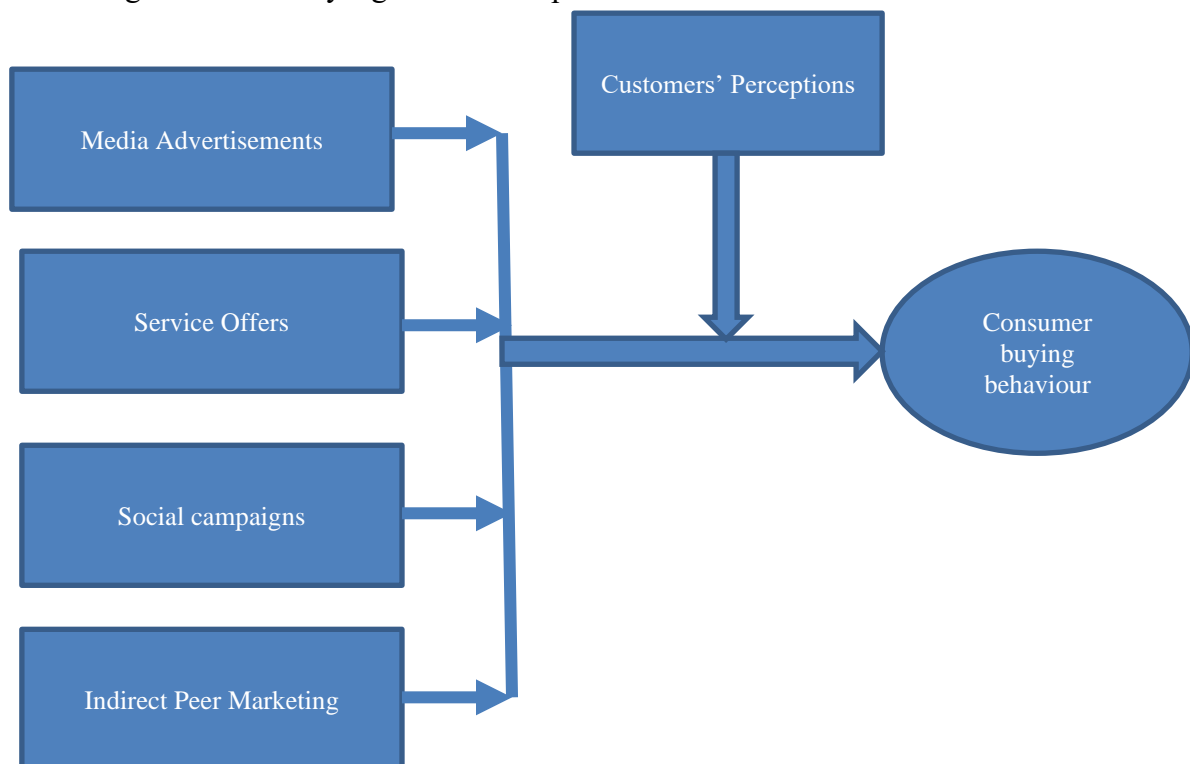


Figure 1: Consumer buying behaviour model for herbal products in India

Conclusion

It can be concluded that the consumer behaviour towards the herbal products mainly gets affected by the media advertisement, service offers, social campaigns and indirect peer marketing and their level of perception towards these products. The model which has been developed based on the study highlighted the significant impact of four independent variables media advertisement, service offers, social campaigns and indirect peer marketing

on the consumer buying behaviour towards the herbal products where customer perceptions plays an important role and significantly mediates the relationship between dependent and independent variables.

Limitations and Future Scope

The study is limited to five cities of India, hence the research suffers from geographical limitations, it can be extended to other cities or rural areas of the country also. The study is based on the perceptions of limited shoppers, and human judgement may be biased sometimes, in future studies the secondary data related to the amount spend on herbal products and the increase in the sales of the herbal products can be added to support the results of primary study. Herbal products are a wide area, in current study researcher has covered only major five brands of herbal products prevailing in India. In future studies the sample size can be increased to get generalized results.

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देश की अर्थव्यवस्था एवं सामाजिक पृष्ठभूमि में उद्यमी महिलाओं की सहभागिता

जयश्री शुक्ला*

सारांश

किसी भी देश की अर्थव्यवस्था में उस देश की महिलाओं की सहभागिता महत्वपूर्ण मानी जाती है और जब बात उद्यमी महिलाओं के विषय में हो तो यह और भी विशेष महत्व रखती है। अंतर्राष्ट्रीय श्रम संगठन जिसमें विश्वभर के लगभग 185 देश सम्मिलित हैं, ने अपनी रिपोर्ट में बताया था कि एशियाई देशों की सूची में भारत एवं पाकिस्तान ऐसे देश हैं, जहां पर सबसे कम उद्यमी महिलाएं हैं। नेशनल सैंपल सर्वे भी इसकी पुष्टि करता है कि देश में उद्यमी महिलाओं की संख्या में कमी आयी है। देश में वर्ष 1999-2000 की तुलना में वर्ष 2011-12 में उद्यमी महिलाओं के प्रतिशत में कमी देखी गयी है। इसका मुख्य कारण भारतीय समाज का उद्यमी महिलाओं के प्रति संकुचित सोच एवं नकारात्मक दृष्टिकोण है। आज भी घरेलू कार्यों एवं बच्चों की परवरीश, वृद्धों की देखभाल इन सभी की जिम्मेदारी महिलाओं के ऊपर ही है। जबकि उचित तो यह होगा कि यदि परिवार की महिला उद्यमी या नौकरी पेशा है तो, देश की अर्थव्यवस्था, सामाजिक कर्तव्यों, परिवार और कार्यक्षेत्र से सम्बन्धित कार्यों एवं पारिवारिक दायित्वों को बखूबी निभा रही है तो क्या समाज एवं परिवार के पुरुषों का यह कर्तव्य नहीं बनता कि वह महिलाओं के घरेलू कार्यों में उनका सहयोग करें। समाज को महिलाओं के प्रति संवेदनशील बनाने की जरूरत है। तभी उद्यमी महिलाएं दोनों क्षेत्रों (कार्य क्षेत्र एवं पारिवारिक कर्तव्य) में उच्च प्रदर्शन द्वारा देश की अर्थव्यवस्था में वृद्धि हेतु अपना पूर्ण योगदान दे पायेगी।⁽¹⁾

विशेष शब्द – अर्थ व्यवस्था, सामाजिक पृष्ठभूमि, उद्यमी महिलाएं, सामाजिक दृष्टिकोण।

परिचय

देश की तेजी से बढ़ती अर्थव्यवस्था से ऐसा प्रतीत होता है कि 2050 तक भारत की अर्थव्यवस्था विश्व की दूसरी सबसे बड़ी अर्थव्यवस्था के रूप में प्रस्तुत होगी। किसी भी देश के प्राकृतिक संसाधन उस देश की अर्थव्यवस्था को बढ़ाने व उसे सुदृढ़ बनाने में अपनी महत्वपूर्ण भूमिका का निर्वहन करते हैं। हमारे देश में भी प्राकृतिक संसाधनों की कोई कमी नहीं है। कमी है तो इसके सही उपयोग की, इन संसाधनों के सही इस्तेमाल में महिलाओं की सहभागिता की।

भारत की आर्थिक नीति के अंतर्गत दसवीं पंचवर्षीय योजना में तीन बातों को विशेष रूप से सम्मिलित किया गया—⁽²⁾

1— महिलाओं के प्रति सकारात्मक सोच एवं सकारात्मक रूप को प्रस्तुत करते हुए उनमें आर्थिक एवं सामाजिक नीतियों के निर्माण हेतु वातावरण का निर्माण किया जाये। जिसके लिए सामाजिक सशक्तिकरण आवश्यक है।

2— महिला सशक्तिकरण के साथ आर्थिक सशक्तिकरण एवं लैंगिक न्याय प्रदान करना परम आवश्यक है।

3— महिलाओं की आवश्यकता, सुरक्षा, कानूनी सलाह, बचाव इत्यादि पर कानूनी जामा पहनाये जाने की आवश्यकता है एवं उसे सही प्रकार से क्रियान्वित करने की भी आवश्यकता है।

भारत सरकार ने अपनी विभिन्न योजनाओं में महिलाओं से संबंधित विभिन्न कार्यक्रमों का क्रियान्वयन किया। उदाहरणार्थ— निःशुल्क बालिका शिक्षा, स्वरोजगार योजना, मनरेगा, विभिन्न कौशल का विकास इत्यादि। अब हमें देश की अर्थव्यवस्था में महिलाओं की सहभागिता को सुनिश्चित करने के लिए कृषि, पशुपालन और छोटे-मोटे उद्योग धंधों में उनकी सहभागिता को बढ़ाना होगा तथा उन्हें एक नई पहचान दिलानी होगी।

वर्तमान परिदृश्य में उद्यमी महिलाओं का देश की अर्थव्यवस्था में योगदान हेतु सम्भावनाएं—⁽³⁾

➤ देश की अर्थव्यवस्था में वृद्धि के लिए यह आवश्यक है कि उद्यमी महिलाओं की सहभागिता को संस्थागत रूप प्रदान किया जाये। साथ ही आर्थिक एवं सामाजिक नीति के निर्माण एवं क्रियान्वयन में सहभागिता को सुनिश्चित किया जाये। उत्पादन वृद्धि, रोजगार विस्तार इत्यादि कार्यक्रमों के लिए उन्हें आर्थिक सहायता प्रदान की जाये। उत्पादक तथा उद्यमी के रूप में उनके सामाजिक एवं आर्थिक विकास में दिए जा रहे योगदान को औपचारिक, अनौपचारिक एवं गैर औपचारिक क्षेत्र में मान्यता दी जाये।

➤ घर पर रहकर ही घरेलू उत्पाद व उद्योगों में आर्थिक उन्नति करने वाली महिलाओं को रोजगार एवं उनकी कार्यदशाओं से संबंधित परिस्थितियों को ध्यान में रखकर नीतियों का निर्माण किया जाये।

➤ ग्लोबल इंटरप्रेन्योरशिप एण्ड डेवलपमेंट इंस्टीट्यूट ने अपनी रिपोर्ट में भारत को विश्व के 5 सबसे नीचे रहने वाले देशों में रखा है, जहां महिला उद्यमी दिन-प्रतिदिन कम होती जा रही हैं।

➤ रिपोर्ट में बताया गया है कि लगभग 73 प्रतिशत ऐसी उद्यमी महिलाएं हैं, जिनको पूंजीपतियों द्वारा सहयोग प्राप्त नहीं हो पाता है। साथ ही सरकारी सहायता मिलने वाले सस्ते ऋण भी उनकी पहुंच से दूर है।

➤ रिपोर्ट में कहा गया कि उपरोक्त स्थिति बैंकिंग की भी है।

* ICSSR, शोधकर्त्री, शिक्षा विभाग, गुरु घासीदास विश्वविद्यालय, बिलासपुर, छत्तीसगढ़।

- आर्थिक सहायता के साथ-साथ महिला उद्यमियों को रूची अनुसार व्यवसाय प्रशिक्षण एवं उसका संगठन एवं प्रबंधन करने हेतु प्रशिक्षण प्रदान करने की भी सुविधा दी जानी चाहिए। इस क्षेत्र में स्मार्ट अप इंडिया, स्टैंड अप इंडिया जैसी योजना महिलाओं की स्थिति में क्रांतिकारी परिवर्तन ला रही है या कहा जाये परिवर्तन लाने को तत्पर हैं तो यह गलत नहीं होगा।
- सरकारी मदद के साथ-साथ क्षेत्रीय सहयोग से भी इस क्षेत्र में प्रगति जल्द से जल्द होने की संभावना प्रबल है।
- मिकिंसे ग्लोबल इंस्टीट्यूट ने अपने अध्ययन में बताया कि भारतीय उद्यमी महिलाओं की देश की अर्थव्यवस्था में सहभागिता के कारण 2025 तक सकल घरेलू उत्पादन में लगभग 60 प्रतिशत की बढ़ोत्तरी हो सकने की संभावना है।
- महिलाओं को देश की मुख्यधारा से जोड़ने के लिए ही सरकार द्वारा आंगनबाड़ी योजना का प्रारंभ किया गया। योजना को प्रारंभ करने के पीछे यह सोच थी कि जब महिलाएं काम में लगी होंगी तो, उनके बच्चों की उचित देखभाल होनी चाहिए। जिससे वह बच्चों की तरफ से निश्चित रहकर अपना कार्य सही प्रकार से कर पाये।

सुधार हेतु प्रयास—⁽⁴⁾

- निजी क्षेत्रों में उनकी उन्नति हेतु महिला उद्यमियों को आर्थिक सहायता प्रदान की जाये।
- सरकार द्वारा संचालित विभिन्न योजनाओं का समय पर क्रियान्वयन एवं जानकारी प्रदान की जाये।
- सरकारी योजनाओं की जानकारी तथा समय पर मिलने वाले सरस्ते ऋणों को जरूरतमंद उद्यमियों तक पहुंचाया जाना चाहिए।
- उद्यमी महिलाओं को सरकारी योजना जैसे स्टार्ट अप इंडिया और स्टैंड अप इंडिया से संबंधित योजनाओं की पूर्ण जानकारी प्रदान की जाये।
- आर्थिक सहायता के साथ-साथ उद्यमी महिलाओं को व्यवसायिक प्रशिक्षण प्रदान किया जाना चाहिए। साथ ही उनके प्रबंधन की भी पूर्ण जानकारी दी जानी चाहिए।
- सरकार द्वारा उद्यमी महिलाओं के लिए प्रयासरत् क्षेत्रीय सहयोग को प्रोत्साहन दिया जाना चाहिए।
- महिला एवं बच्चों के स्वास्थ्य से सम्बन्धित केंद्रों की स्थापना से सरकार महिलाओं व उनके बच्चों के स्वास्थ्य पर भी ध्यान केंद्रित करती है।

वर्तमान परिदृश्य में उद्यमी महिलाओं की सामाजिक स्थिति या सामाजिक योगदान हेतु सम्भावनाएं—

भारतीय समाज पितृसत्तात्मक एवं पुरुष प्रधान समाज माना जाता है। वर्तमान में देखा जाता है कि परिवार की आर्थिक सुदृढ़ता में महिलाओं की भूमिका में परिवर्तन हुए हैं। परंतु फिर भी एशियाई देशों के समाज में आज भी स्त्रियों की गिनती पुरुषों के बाद ही होती है। इसका मुख्य कारण पुरुष द्वारा प्रत्यक्ष रूप से आय एवं परिवार का भरण-पोषण करना है। सरकार द्वारा विभिन्न योजनाओं का क्रियान्वयन कर महिलाओं को सामाजिक दृढ़ता प्रदान करना चाहिये, जैसे— महिलाओं की आवश्यकता, सुरक्षा, बचाव, कानूनी सहायता, न्याय, सूचना मात्र, स्वास्थ्य, खाद्य इत्यादि। इसके अतिरिक्त शिक्षा व्यवसाय तथा उनके उत्पादन को बाजार में उचित स्थान एवं मूल्य दिलाने के साथ-साथ उनकी आजीविका को भी ध्यान में रखा जाता है।⁽⁵⁾

परंतु जब हम ग्रामीण उद्यमी महिलाओं की सामाजिक स्थिति पर दृष्टि डालते हैं तो हमें निराशा ही हाथ लगती है। आज भी यहां का समाज परंपरागत रूढ़ियों को मानता है तथा परिवर्तन के साथ परिवर्तित होने को तैयार नहीं है। आधुनिकता को तो स्वीकार करना चाहता है, परंतु केवल अपनी आवश्यकतानुसार।

आवश्यकता है महिलाओं के संपूर्ण सशक्तिकरण की पृष्ठभूमि को एक जमीनी हकीकत प्रदान करने की। इसके लिए महिलाओं को प्रभावित करने वाले सामाजिक, आर्थिक एवं राजनीतिक विचारधारा में परिवर्तन की आवश्यकता है। आज महिलाओं द्वारा बहु-आयामी भूमिकाओं का निर्वहन किया जा रहा है। जो देश व समाज दोनों के लिए महत्वपूर्ण हैं। महिलाओं में आत्मविश्वास भरने के लिए, उन्हें सामाजिक सुरक्षा एवं कानूनी संरक्षण देने की आवश्यकता है। जिससे वह निर्भीक होकर अपने कार्यक्षेत्र में प्रगति कर सके। ऐसा माना जाता है कि महिला अपनी आर्थिक प्रगति के साथ देश की अर्थव्यवस्था में भी अपना महत्वपूर्ण योगदान प्रदान करती है। परंतु सामाजिक विचारधारा उन्हें ऐसा करने से रोकता है।

हमें आधुनिकता को अपनाते हुए सामाजिक सोच में परिवर्तन लाना है, ताकि महिलाओं का पूर्ण सशक्तिकरण संभव हो सके।⁽⁶⁾

निष्कर्ष

किसी भी देश की अर्थव्यवस्था में उद्यमी महिलाओं का योगदान कभी भी पुरुषों की तुलना में कम नहीं कहा जा सकता। चाहे परिवार संभालना हो, कार्य क्षेत्र के दायित्वों का निर्वाह करना या किसी भी क्षेत्र में अपनी उपस्थिति दर्ज करानी हो, इनके सहयोग, योगदान एवं महत्व की समाज द्वारा तहे दिल से स्वीकार करना चाहिए। प्राच्य परंपरागत पितृसत्तात्मक रूढ़ियों की को तोड़ते हुए, उन्हें देश की मुख्यधारा से जोड़ना आवश्यक है। सरकार द्वारा विभिन्न प्रयासों, योजनाओं, नीतियों, कार्यक्रमों एवं केंद्रों की स्थापना इस क्षेत्र में सराहनीय है। उद्यमी ग्रामीण एवं शहरी महिलाओं के साथ विशेष क्षेत्रों की कार्यरत् महिलाओं की स्थिति भी आर्थिक रूप से सुधार कर उन्हें व्यवसाय एवं प्रबंधकीय प्रशिक्षण

सहायता प्रदान की जा रही है। इस दिशा में सामाजिक सहयोग भी अपेक्षित है। आज देश की सवा सौ करोड़ जनसंख्या में लगभग 60 करोड़ महिलाएं हैं। यदि आज इन महिलाओं को आर्थिक रूप से आत्मनिर्भर बनाते हुए, समाज में उचित स्थान दिया जाये तो देश की अर्थव्यवस्था को व्यवस्थित एवं सुसमृद्ध बनाया जा सकता है।⁽⁷⁾

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Customer Loyalty Among The Life Insurance Policy Holder In Madurai City

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Abstract

In this paper aims to find out customer loyalty among the life insurance policyholder. In this research, the researcher has chosen 400 life insurance policy in Madurai city through snowball sampling method. The customer loyalty has been analysed by chi-square test with the policyholder demographical factors such as between type of insurance company, experience with insurance products, number of insurance policies.

Keywords: Life insurance, Customer loyalty

Introduction

Insurance companies are facing a growing challenge in retaining their customers. This is due to the fact that insurance products are, in most cases, becoming commoditized. Customers often cannot differentiate between insurers, which forces many providers to compete on price. Strategic decisions based on price competition eventually impact profitability and increase focus on cost management. Retaining customers and building customer loyalty is good for any business. Loyal customers stay longer, renew at higher prices, and act as brand ambassadors by recommending that business to friends and family. Insurers need a large number of policyholders for their survival and prosperity. A policyholder may hold several contracts with the same company, covering different risks. This means insurance agreements are written for every type of risk covered. A customer and insurer relationship is a very special type of relationship as it involves a long-term commitment. The globalization of competition, a saturation of markets, and development of information technology have enhanced insurers' awareness and created a situation where long-term success can be achieved by building customer loyalty. It is observed that companies need to keep their current customers rather than devoting additional resources to chase potential new customers. In view of this, the study attempts to examine the role of trust in building customer loyalty in the insurance sector of Madurai.

Review Of Literatures

Rai and Srivastava (2012) point out the significance of customer loyalty in the modern business field and also found out the antecedents and outcomes of customer loyalty. The study shows that service quality, customer satisfaction, trust, commitment, switching cost, corporate image, service delivery, emotion and communication are the important antecedents of customer loyalty. Similarly, based on the literature support behavioural, attitudinal and cognitive loyalties are found to be the outcome of customer loyalty.

Saaty (2012) found that customer loyalty and customer retention were very much relevant to the success of a business. He conducted the study among the current employees working with insurance companies in Saudi Arabia, covering three different categories like a

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salesman, marketing executives and other executives. He tries to make an investigation regarding the type of insurance policies purchased by the people in Saudi and the result of the study shows that most of the people purchased compulsory lines of insurance like motor insurance and health insurance. The study also makes an effort to identify the values offered by companies to enhance loyalty and retention. Among the values, most companies provide special offers, discounts and incentives to existing customers, but the least provided value is the awareness and education programme. It is a very relevant thing as an insurance company is concerned. So, according to him, the companies should give more focus on this area. And he finds out through the survey that insurance companies in Saudi Arabia are lacking in providing customer service measures. Thus he suggested giving more concentration on customer service practices in order to enhance loyalty and retention level.

Damtew and Pagidimarri (2013) made an attempt to measure the role of trust in building customer loyalty in the insurance sector in Ethiopia. The single cross-sectional descriptive research method was used. The method of sampling used was stratified random sampling and surveyed 285 customers as samples using a structured questionnaire. The study finding shows that there is a direct and positive relationship between trust and customer loyalty, where trust is measured in two angles like customer trust on employees and customer trust in an insurance company. The tools used for analysis are Pearson correlation and regression.

Mihaela (2013) has made an attempt to assess the overall customer satisfaction and trust determines the bi-dimensional customer loyalty in the banking sector. Through the research work, he suggested that bank managers should understand the importance of relationship marketing concepts like satisfaction and trust in order to build loyalty among customers. The respondents in this study are the financial officers from various companies in Romania. They applied the convenience and snowball sampling method for data collection and 78 samples are collected and used for analysis. The hypothetical relationship in the conceptual model was tested by SEM using AMOS 20 software which shows acceptable fit indices.

Rai and Srivastava (2013) in their article focused on the widely applicable antecedents of customer loyalty in the Indian life insurance industry. They bring out seven variables, viz service quality, customer satisfaction, trust, commitment, corporate image, switching cost and communication, which are responsible for the formation of customer loyalty. The finding of the study shows that among the seven variables, service quality and commitment are the main predictors of customer loyalty in the life insurance industry. The study also did a comparison between public and private sector companies towards the customer loyalty status and it is found that customers of the public sector are more loyal than private-sector customers because of its security and stability towards the society.

Shahrokh Oveisi et al. (2013) in their article assert that customer loyalty positively influenced online repurchase intention. The study also proves the significant effect of online relationship quality towards customer loyalty. Among the antecedents of relationship quality, perceived vendor reputation has more influence than perceived expertise in order fulfilment. So, they suggest that vendor in e-commerce necessitate broadening methods to enhance reputation through the use of communication tools to increase the level of website reputation. They also found out that website usability has no influence on building relationship quality. They conducted the study among the students at Allameh Tabatabai University who had an online shopping experience. The samples (201) were selected by applying a stratified proportionate sampling method. In this study, they used Confirmatory

factor analysis and Structural equation modelling analysis for measuring the relationship between the constructs.

Chang Chuang et al. (2015) in their article tried to analyze the relationship between quality and customer loyalty in the Taiwan automobile industry. A sample of 282 respondents was selected for the study using judgement sampling method. Both product quality and service quality are taken to find its effect on customer loyalty. Structural Equation Modeling was used for the analysis. The results of the study show that neither product quality nor service quality have a direct effect on customer loyalty, but have an indirect effect by enhancing customer satisfaction. Thus, they suggest for better work in order to promote product and service quality, as the key to achieving greater satisfaction, which builds stronger customer loyalty.

Result Of The Analysis

Table : 1 Demographic profiles of the Life Insurance Policy Holder

Demographic Variables		Frequency	Per cent
Gender	Male	288	72.0
	Female	112	28.0
Age	Up to 30 years	60	15.0
	31 years to 40 years	110	27.5
	41 to 50 years	95	23.8
	Above 50 years	135	33.8
Educational Qualification	Up to School	67	16.8
	Under graduation	196	49.0
	Post-Graduation	90	22.5
	Others	47	11.8
Marital status	Married	345	86.3
	Unmarried	55	13.8
Type of Family	Joint	253	63.3
	Nuclear	147	36.8
Size of the Family	Up to 3 Members	140	35.0
	4-5 Members	210	52.5
	Above 6 Members	50	12.5
Income (Per month in Rs)	Up to 20000	132	33.0
	20001 to 30000	124	31.0
	30001 to 40000	86	21.5
	Above 40000	58	14.5
Occupation	Salaried	153	38.3
	Businessman	129	32.3
	Professional	57	14.3
	Others	61	15.3

Source: Primary Data

Total of 400 respondents who have insurance policies was selected for the current study. 288 respondents were male and the remaining 112 respondents were females. 135 respondents belong to above 50 years old, 110 respondents belong to 31 to 40 years old. 95 respondents belong to 41 to 50 years old and the remaining 60 respondents belong to less than 30 years

old. This reveals that mostly old-age respondents have more insurance policies compared to mid-age group respondents.

Most of the respondents have under graduation level qualification (196 respondents), 90 respondents have post-graduation level qualification. 67 respondents have school-level educational qualification, and only 47 respondents belong to uneducated and no formal educational qualifications. It seems most of the respondents are formally educated. 345 respondents were married, and only 55 respondents were unmarried. Marital status influences insurance policy selections.

The 253 respondents live in the joint family and 147 respondents living in the nuclear family. Since the geographical area of the research is Tamilnadu where most of the people living in a joint family. 210 respondents have 4-5 members in their family. 140 respondents have up to 3 members in their family, and only 50 respondents have more than 5 members in their family. The above result supports this.

The 132 respondent's monthly income is up to Rs. 20000 and 124 respondents' monthly income is between Rs. 20001 to 30000. 86 respondents are getting between Rs. 30001 to 40000 per month and others are getting more than Rs. 40000 per month as a monthly salary. Most of the respondents are living in lower-middle-class families. 153 respondents are working in private companies for a monthly salary, and 129 respondents were doing their business. 57 respondents were working as professionals, and 61 respondents are students, housewives, pensionaries and non-working categories.

Association Between Customer Loyalty Types And Insurance Buying Behaviours

The chi-square test of association was used to find the association between customer loyalty types and insurance buying behaviours. The customer loyalty types were derived from the cluster analysis and classified into two groups named loyalists and extreme loyalists. The insurance-buying behaviour variables classified into six variables such as type of insurance company, experience with insurance products, number of insurance policies held by the respondent, number of insurance policies in the family, the reason for selecting the insurance company and periodicity of premium payment.

Table: 2 Association between the customer loyalty and behaviours of life insurance policyholder

Pearson Chi-Square Tests		Statistics	Result
Type of the insurance service provider	Chi-square	0.915	No Association
	Df	1	
	Sig.	0.339	
Experience with insurance products	Chi-square	1.818	No Association
	Df	3	
	Sig.	0.611	
Number of insurance policies held by the respondent	Chi-square	5.484	No Association
	Df	2	
	Sig.	0.064	
Number of insurance policies in the family	Chi-square	2.859	No Association
	Df	2	
	Sig.	0.239	
Reason for selecting the insurance company	Chi-square	1.293	No Association
	Df	4	

	Sig.	0.863	
Periodicity of premium payment	Chi-square	2.915	No Association
	Df	4	
	Sig.	0.572	

Source: Primary Data

Table 2 demonstrates the no significant association exist between the customer loyalty types and insurance buying behaviours. Since the p-value is greater than 0.05 for all insurance buying behaviours factors. Loyalists and extreme loyalists don't have a significant association between type of insurance company, experience with insurance products, number of insurance policies held by the respondent, number of insurance policies in the family, the reason for selecting the insurance company and periodicity of premium payment.

Conclusion

The customers are retained by customer satisfaction. In this research, the life insurance policyholders not loyal to the policy holding companies. It was proved through the chi-square test. In this test policyholder, demographical variables are not associated with customer loyalty. Hence the researcher suggested to the insurance company, to provide the ultimate customer satisfaction in all area to the existing customers.

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TDBS Based Communication System to Avoid Jammers

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Abstract

Synchronization is a challenging and important issue for the wireless communication networks. Along with increasing facilities there are also the hazards growing with it. It is essential to have a system that identifies such unwanted nodules that cause harms. A TDBS model ensures a secured error free communication. It lets off the traditional way of sharing code books that is not effective. Effective exchange of data is provided deploying this mechanism. An emergency transmission of messages is allowed during critical a condition in environment. It is all due to manipulation of random keys in the model. It works perfectly despite the changing exterior and interior objectives in network. The systems threatened by jammers are allowed to communicate using TDBS mechanism. This paper tackles this issue by unveiling the ambiguities regarding the use of UDP/TCP model based on Time Division Beacon Scheduling (TDBS) to build the hassle free communication using different topologies. The proposed method is implemented in NS-2.

Keywords: Wireless communication, TDBS, UDP/TCP, hassle free networks, avoid jammers.

I Introduction

With increase in demand and number of users the communication system is susceptible to numerous threats and damages that may alter replicate or obstruct the communication and data. Wireless communication is considered one of the important ways to exchange information and data that may be the audios, image, speech, videos and text. The communication is done using the wireless channels that has to be operated using any of the available mechanisms. As it has immense involvement in wide number of appliances it is essential to make the communication protected and secured with the aim of avoiding the information from being exposed to the unwanted and unauthenticated users. The typical sending and receiving occurs in nodes of the network. The nodes together connected form a network that enables the conversation or interchange of data between the nodes in entire communication system.

Although the nodes have the mechanism to detect the annoying bodies, at some point it breaks down and is incapable of defending the hazard. During this circumstance the network may undergo external harm which includes jamming of the network.

As a result, there is necessity of extreme precautions to be taken. The practice of hidden secret private key is used to avoid threats. But it is inadequate in applications where extreme privacy has to be maintained like military and defence system. Time Delayed Broadcasting System (TDBS) specifies a method of guarding the system. The illegal users are avoided to make use of communication and data that is sent by the source.

TDBS offers verification and authentication by detecting purpose and susceptibilities of the network to enhance the security. It is done using a model called "Threat.Model". The model

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studies all the problems and the reasons for them. The problems identified are solved by defining the solution to the disputes and actions. It also eliminates the consequences of that threat.

The TDBS. threat model analysis and evaluates the purpose of the invader. The analysis incorporates evaluation of the system implementation, functions and execution that cause the attacks. It is well defined tactic to guarantee that application is safe from threats and hazards. The model of TDBS focuses on jamming resilience that favours the broadcast and relay in any network. The use of PN. Codes replaces secret keys shared in common as an alternative and resistant to jamming.

The jamming is avoided using a PN sequence technique that almost depends on spread spectrums. They include Frequency. Hopping. Spreads. spectrum.(FHSS) and Direct Sequence.Spread.Spectrum (DSSS). Spread spectrum scatters the original signal in the frequency band. The expansion of signal that is to be distributed to the target increases the bandwidth to larger extent. A FHSS includes shifting of carrier from one frequency range or band to another. The switching is done arbitrarily liable on randomly produced. This code has to be acknowledged in cooperation with receiver and sender. In FHSS, the entire frequency band is divided and broken into number of small frequency bands. The carrier randomly selects one among those frequency bands and allows the transmission or communication to take place. The movement of carrier from one frequency band to the other is termed as 'Hop'.

Depending upon "PN -.Code" that is arbitrarily generated the carrier hops among the different band of frequencies. Since the hopping is unpredictable the signal cannot be easily restored or jammed by external noise and premeditated attacks. Consequently providing a greater security to the system that employs this kind of scheme in spreading the signal on the frequency oriented schemes.

In the case of DSSS, the information is usually in the digital format. Many of the times it is either 0 or 1. This type of data that switches between only those two values in digital system are referred as Bits. The data bits of the original digital signal are modified along with PN Code. Usually the bits of PN code have a smaller duration compared to that of the original modulating data bits.

As the bit duration of the carrier that is PN Code is very less, it has the higher bandwidth. This leads the spreading of signal that appers noise like structure when spread entirely. Here the information is enclosed and secured bit by bit. The PN.Code randomly generates the bits and the information bits to be transferred are modulated depending on those random bits. Since entire bandwidth is used in this scheme more than one user can make use of the entire frequency range ensuring efficient data transfer.

II Related Work

In Caccamo and Zhang (2002), the authors have proposed Implicit-Earliest Deadline First (Implicit-EDF), which assumes that all nodes in each cluster hear each other and that a table containing the characteristics of all the periodic traffic of the cluster has to be transmitted to the nodes in advance. This assumption is uncommon in most of WSN applications.

In Heinzelman et al. (2000), the authors proposed LEACH, a clustering-based protocol using a randomized rotation and selection of cluster-heads to optimize energy consumption. After the random selection of cluster-heads, the other nodes decide to which cluster they belong, and inform the corresponding cluster-head of their decision. After the reception of all join

requests, cluster-heads compute a TDMA (Time Division Multiple Access) schedule according to the number of nodes in their cluster.

In Mirza et al. (2005) the authors have proposed a centralized mechanism for scheduling beacon frames to reduce energy consumption of energy-critical nodes for data aggregation-based applications. However, in that approach there are no guarantees on keeping synchronization due to possible beacon frame collisions. In Ha et al. (2005) the feasibility of ZigBee multiple cluster (cluster-tree) beacon-enabled networks has been analyzed under the assumption of clusters working at full duty cycle (beacon order equals superframe order). The authors conclude, with some empirical guidelines, that cluster-tree networks are feasible, but they do not provide any solution to the beacon scheduling problem in order to avoid beacon collision. In fact, they only analyse the probability of failed transmissions of both beacon transmissions and association procedures.

The most commonly used topologies of wireless communication is shown below,

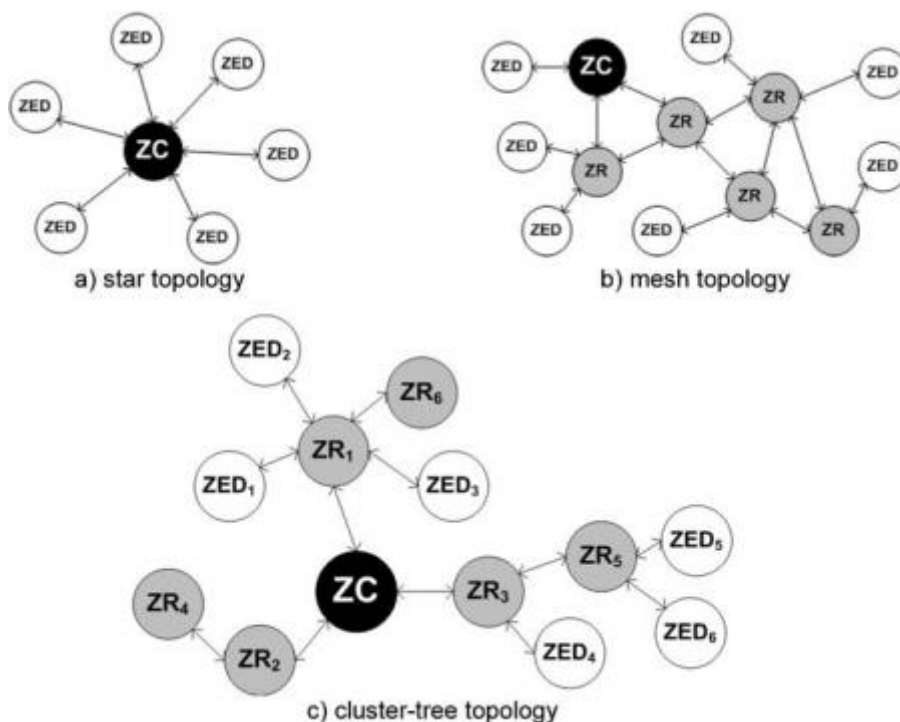


Figure 1: Network topologies mentioned in IEEE 802.15.4 TDBS mechanism

Time Delay Broadcasting

Time delayed broadcasting system is a method that allows the user to communicate in the network during the presence of jammers. Usually when a system undergoes communication it has a tendency to be violated by the internal and exterior bodies. This in turn leads to the blocking or avoidance of devices from communicating with each other. The system consists of the model that identifies the internal threats that cause blocking commonly known as 'jammers'. TDBS supports both the unicast and broadcast series of transmission. The broadcast scheme in this system is comprised by chaining several unicast systems. The Broadcast is given higher priority compared to the other. It involves numerous nodes connected to form a network.

All the nodes actively participate that raises the operation of the structure. In this type, the communication or transfer of information take place from one node to several node in and outside the network. It covers a wide area compared to any other models including multicast networks.

The measures are taken to detect compromised nodes to avoid the leakage of data in TDBS. Therefore providing secured means of communication. Since random key known as PN Sequence is used the amount of material leaked is limited to a larger extent. It continues to communicate through the network even during presence of such traits.

Normally, TDBS works under two modes namely: AB Mode and SU mode. The SU mode stands for Sequential unicast mode. As the name itself defines that, the data is being transmitted sequentially from one node to another. The word unicast indicates that communication is only between a pair of nodes. This mode is preferred when the communication is of one side so that collision is prevented. The target and the source are directly connected to one another. Below figure illustrates functioning in SU.mode with respect to time slot.

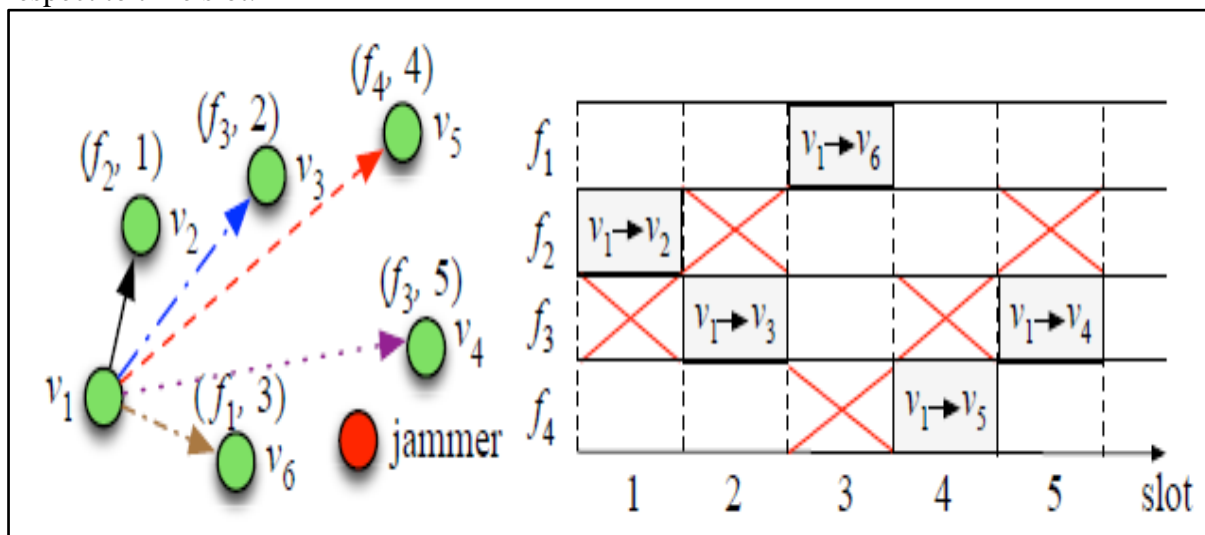


Figure 2: Operation in SU Mode for Unicast transmission.

In the above figure the transmission is initiated from node v_1 . Each transmission takes place at particular time slot. At first slot, v_1 sends message to v_2 at frequency f_2 there by jamming the frequency f_3 . v_1 sends data to v_3 at frequency f_3 by blocking the frequency f_2 . Similarly, the node v_1 sends the message one after other to at all the nodes from v_2 to v_6 by five different time slots.

It can be noticed that transfer of message is successfully accomplished even in the presence of jammers by using this method. It is achieved due to the delay in time that avoids overlapping of nodes by using unique frequency bands.

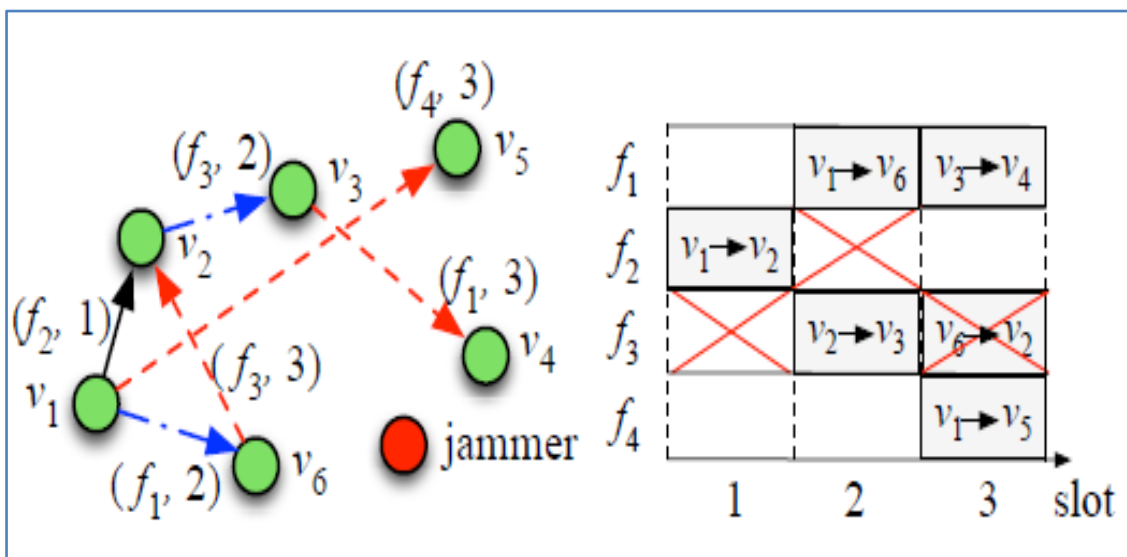


Figure 3: Operation of nodes in AB Mode along with respect to time slots.

The above figure, can be observed that it consists of three target nodes V4, V5 and V6 respectively. Since the broadcast is assisted by several nodes, the target node is not straight connected to source. The data from node V1 reaches the node V5 via nodes c and V3 with frequency f_3 and f_4 . That is V2 acts as assistant to V3 and V3 to V5.

At the first time slot, it can be noticed that V1 transmits data at frequency f_2 by blocking the frequency f_3 . In second, simultaneously V1 sends message to V6 and V2 to V3 with message at frequency f_1 and f_3 respectively by blocking the frequency f_2 . But during the last time slot it can be viewed that the node V6 continues to send message successfully to target V2 even if the frequency is blocked.

TDBS allows successful sending of message at the existence of jammer. This ensures the better solution to provide a temporary connection even when the jammers are present in the communicating network.

Node Insertion

The dynamic property of TDBS facilitates adding of external nodes. Once the node is added, the related information has to be updated which is automatically performed in this scheme. It is as shown in the below figure.

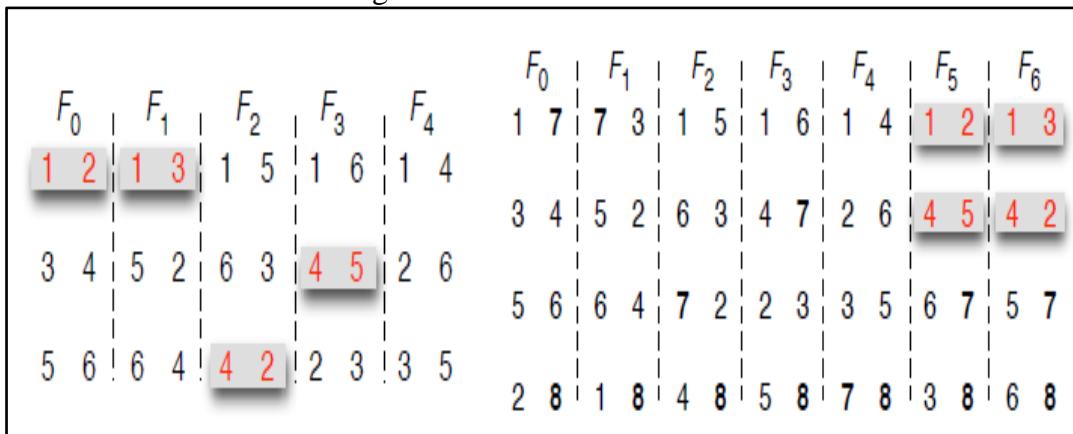


Figure 4 : Pairing of nodes and its mobility when nodes are added.

Node Abolition/ Deletion

The network comprises of nodes that are useless or cause the hazards disturbing efficient communication and data transmission. Some of the nodes behave awkwardly that intrudes normal functioning of the system. These nodes are detected and have to be abolished from the network. Due to removal of these nodes the pattern of routing, pairing of nodes and other related information that belonged to deleted node has to be reorganised and reconstructed.

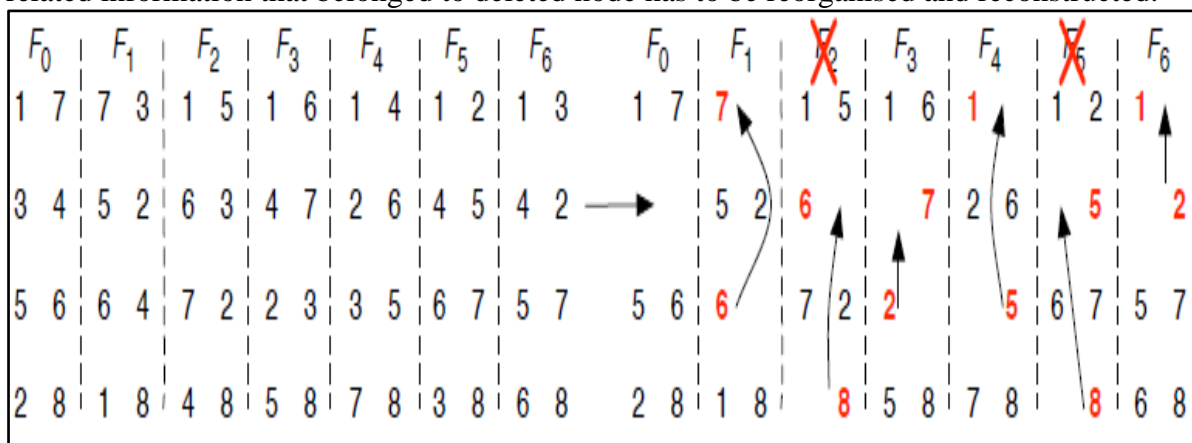


Figure 5: Deletion of nodes and channels

The node 3 and 4 are assumed to be deleted. Everywhere the nodes 3 and 4 present are eliminated. As a result the 2nd pair in first channel F₀ is abolished completely. In the same way, the nodes in 1st and 3rd rows are combined together after eliminating the 3rd and 4th node. The procedure continues for remaining six channels. While the two nodes are deleted in a network each channel reduces by one pair of node.

III. Proposed Methodology

The algorithm for the TDBS are explained in this sub-section. Methodology defines the steps that are developed by the designer. The resulting stages are followed to ensure the successful operation of model.

Let us consider an IEEE 802.15.4/ZigBee network as presented in Fig. 1c with a set of N coordinators (including the ZC) $\{ZR_i = (SD_i, BI_i)\}$, for $1 \leq i \leq N$ that generate periodic beacon frames with a given superframe order SO_i and beacon order BO_i . SD_i and BI_i denote the superframe duration and the beacon interval of the i th coordinator ZR_i , respectively. The problem is how to organize the beacon frames of the different coordinators to avoid collisions with other beacon and data frames, using the time division approach.

At a first glance, this problem can be considered as a non-preemptive scheduling of a set of periodic tasks, where the execution time of a task is equal to the superframe Real-Time Syst duration, and the period is equal to the beacon interval. However, the additional restriction in the superframe scheduling problem is that consecutive instances of SD must be separated by exactly one beacon interval (BI).

The steps of the proposed algorithm is shown below,

1) Establishing the n/w that consists of nodes.

Formation of networks includes :

- i) Nodes configuration
- ii) Marking source and target

2) Make connection among the nodules.

3) Provide linking path from source to target.

- 4) Start distribution of data in the network.
- 5) Observe the routing of moving packets. Notice the drop in data rate.
- 6) Introduce the jammers that block movement of message.
- 7) Set up a delay that changes the routing. During this period Jammers are recognised.
- 8) Selection of methods to relieve jamming nodes using spectrum.
- 9) Apply dynamicity to network like Insertion/ removal of external nodules.
- 10) Outline the parameters like delay, throughput., delivery ratio in 2D and comparison for different conditions.

The three models which are employed during the implementation is as follows,

- a) Networking Model
- b) Structure Model
- c) Contentment Model

Flowchart for the proposed algorithm is as shown in the below figure,

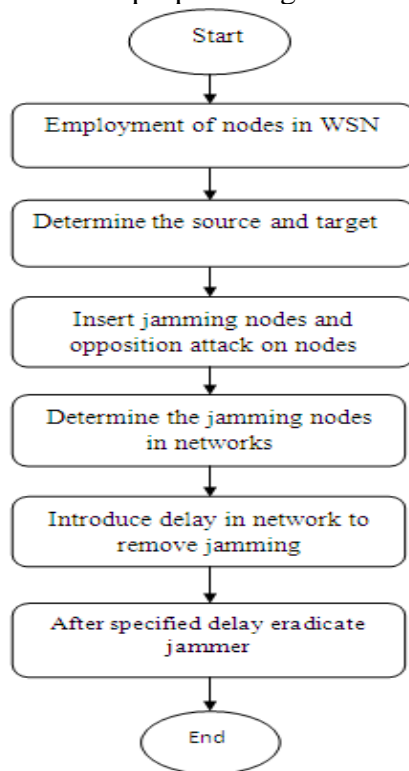


Figure 6: Flow chart of the proposed system

Steps used to create the topology and carry out the experiment are as follows,

- i. Node creation
- ii. Link the nodes
- iii. Create and provide agents like UDP, TCP or any other
- iv. Indicate active and null agent
- v. Attach null node to source node
- vi. State bitrate and establish traffic
- vii. Assign bitrate to agents
- viii. Terminate flow of traffic.

The topology structure of the proposed system is as follows,

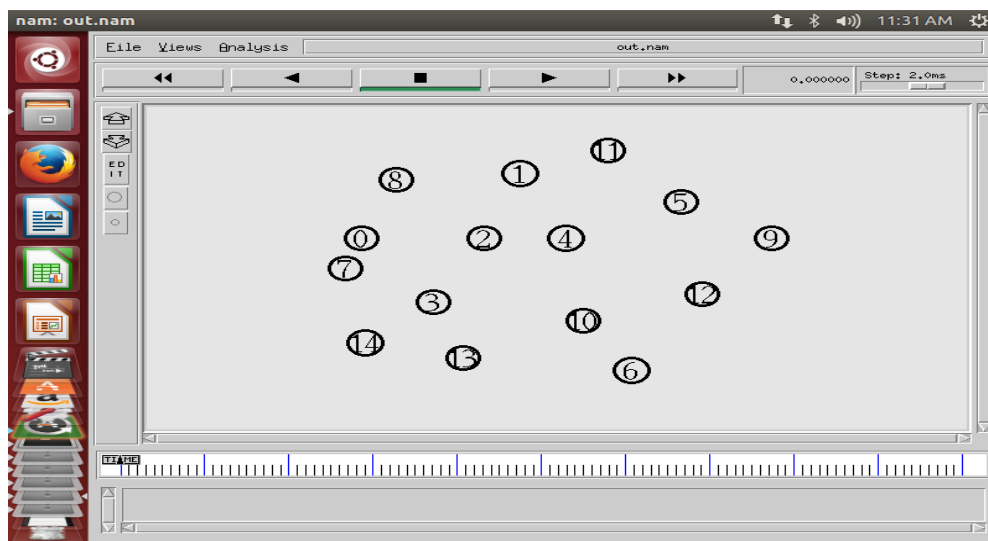


Figure 7: Topology of the proposed system.

IV. Simulation Results

The various steps are formulated in this section, the very step is to create the nodes in the NS-2 is as shown in the below figure,

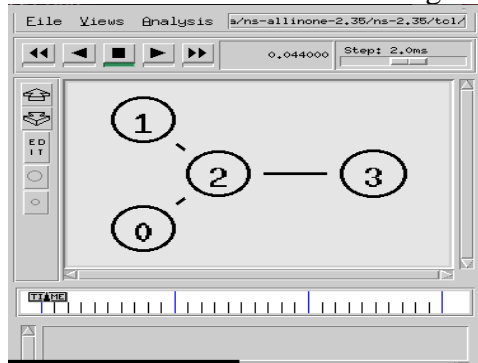


Figure 8: Node Creation in Tool

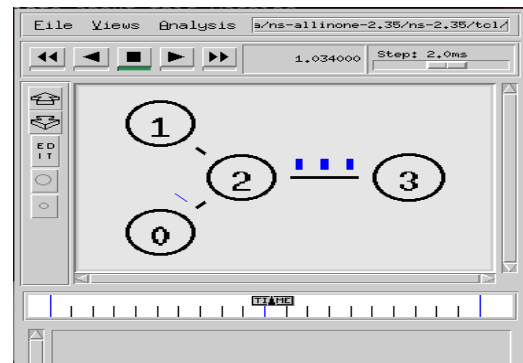


Figure 9: Communication between nodes

Dropping of data is viewed in figure 10. This reduces network efficiency. It has to be reduced to uplift quality of model. The model involves visualisation of sending packets from source towards sink. It also involves example of dropping the message while moving towards target practically.

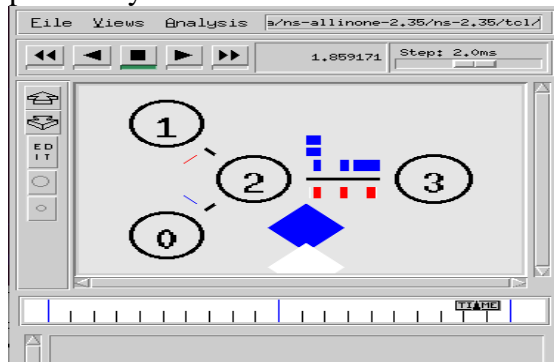


Figure 10 : Dropping of data from nodes interface.

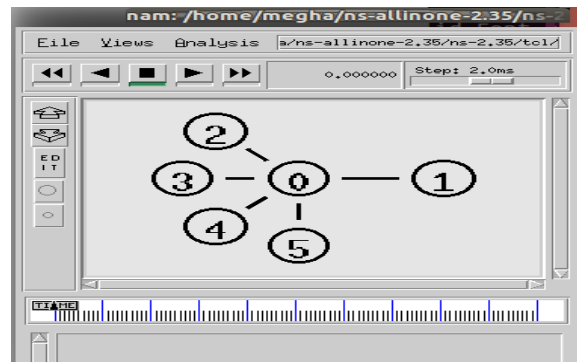


Figure 11: Multiple source single node interface.

TDBS model with source as black colored. The destination is marked blue in color.

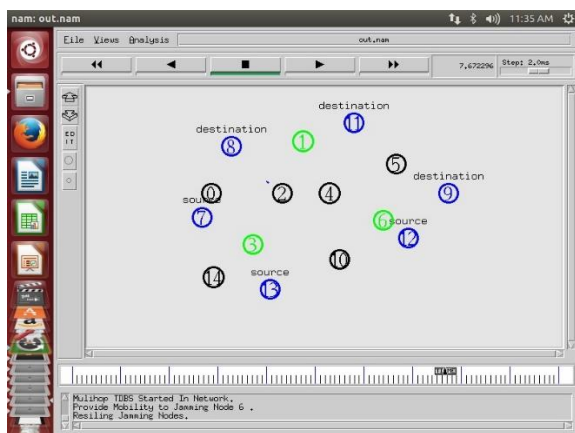


Figure 12: Mobility in nodes

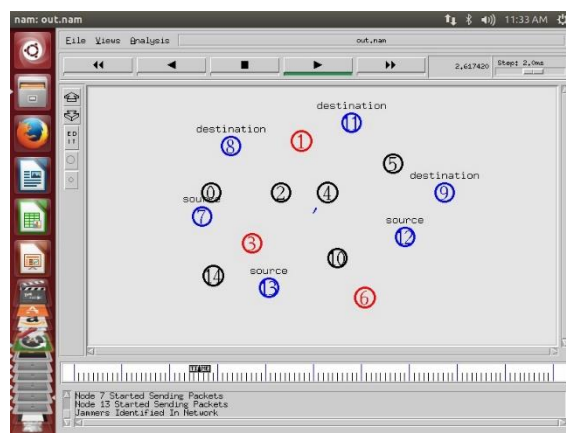


Figure 13: Recognition of jammer

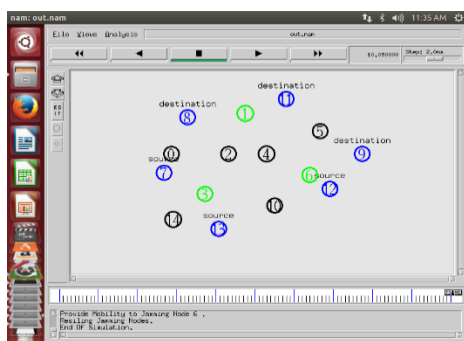


Figure 14: Removal of jamming nodes

Observation of moving nodules and recognising blocking nodes. Red nodes are jammers indication. Green nodes indicates node free from blockages. They are jammers converted to block free nodules.

The efficiency of the system, delay generated and the throughput of the networks are shown below,

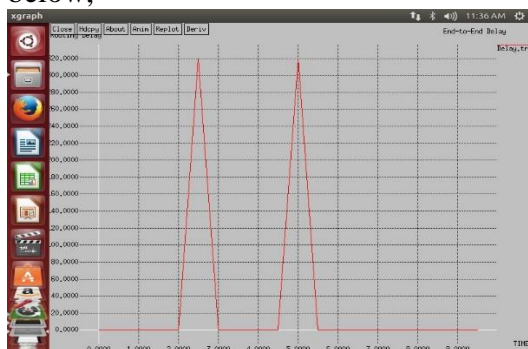


Figure 15 : End to end delay of nodes

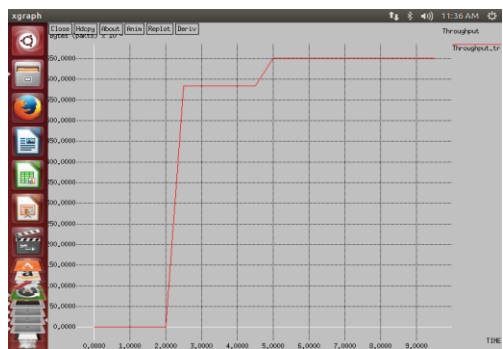


Figure 16 : Through put of the network

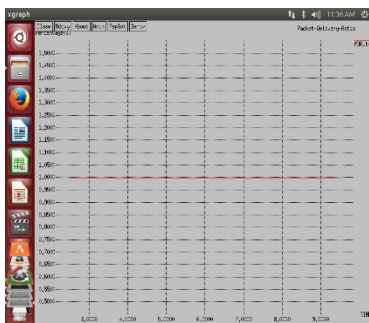


Figure 17: PDR of the TDBS network.

Conclusion

Security assurance that is fundamental objective in any field of communication is fulfilled using TDBS model. The method of random key usage suppresses unfaithful sharing mechanism. The system is well suited for network where is frequent movement of users due to its capability of automatic data updating. All the users have chance to communicate equally without breakage and interruption. System accomplishes smoothly even if user enter and leave the network. It is not affected by exterior environment. TDBS is perfect during national threats. During national disasters it provides a temporary technology to exchange highly fortified information. TDBS constructed in this work operates best for frequency oriented applications. Using NS emulator plotting and visualisation of network is structured to evaluate system constraints.

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Trace element concentrations from the sub-surface sediments of Devipattinam Mangroves, Tamil Nadu, southeast coast of India

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Abstract

The present study has been focused to find out the trace element concentration from the sub-surface sediments of Devipattinam, Tamil Nadu, southeast coast of India. A core sample with a length of 105 cm was collected from the Devipattinam mangrove region to understand the interrelationship between different parameters such as textural characteristics, calcium carbonate, organic matter and trace elements. The core sediments were dominated with silty sand and sandy silt substrate. The percentage of calcium carbonate varies according to the depth of the sediment core and the organic matter percentage is relatively high in the top and bottom portion of the core than the middle part. Trace elements geochemistry points out that most of the trace elements are associated with the fine sediments. Enrichment factor, contamination factor and geo accumulation index have been calculated to know the pollution level of the metal. The enrichment of trace elements in the bottom part of the core samples supports the geogenic source and the elements Cr, Cd, Pb, Cu, and Zn are well correlated due to anthropogenic sources. Depth wise occurrence of sediment texture and trace element concentration are also studied and correlated.

Keywords: Trace elements, Pollution, Mangroves, Devipattinam, Tamil Nadu

1. Introduction

Sediments are the ultimate burial grounds for metals in the hydrological cycle because metals are absorbed onto particles during their interaction with surrounding waters. Coastal and estuarine regions are also important sinks for many toxic elements as they accumulate in bottom sediments (Szefer et al. 1995). Thus, geochemical characteristics of the sediments can be used to infer the provenance and fate of elements in an aquatic environment (Forstner and Salomons, 1980; Fedo et al. 1996; Nath et al. 2000; Huntsman et al. 2005; Selvaraj and Chen, 2006). Heavy metals are present in streams as a result of chemical leaching of bedrocks, water drainage and runoff from the banks and discharge of urban and industrial wastewaters (Soares et al. 1999). Due to their strong affinity for sedimentary particle surfaces, scavenging by suspended particulate matter and subsequent sedimentation exacerbates the environmental impact of these pollutants and sustains the environmental deterioration of estuaries and neighbouring coastal zone (Gerritse et al. 1998). Records of environmental change are often preserved in sediments from sub-tidal and intertidal mudflats and salt marshes. Studies of these sediments allow an assessment to be made of the scale of

pollutant inputs into aquatic ecosystems from past industrial and urban development (Valette-Silver, 1993).

Mangroves could accommodate a high concentration of trace metals in sediments, especially in fine-grained oozes, which present high mineral-specific surfaces. These ecosystems which are in the intertidal zone of most tropical and subtropical regions are characterized by major contrasts in redox conditions and high rates of organic carbon accumulations (Huc, 1980). The sediments may also act as a sink or as a source of trace metals in coastal environments because of their variable physical and chemical properties (Harbison, 1986). Moreover, many mangrove ecosystems are close to urban development area (Tam and Wong, 1993) and are impacted by urban and industrial run-off, which contains trace metals in the dissolved or particulate form. In general, the evaluation of trace element distribution in mangrove sediments is useful to assess the pollution status in the mangrove environment. Therefore, the present study has been focused to document the elemental concentration in the surface and sub-surface sediments of Devipattinam Mangrove, Tamil Nadu, India.

2. Study Area

Location map of study area (satellite imagery) is given in figure.1. Survey of India toposheets [No: 58 K/ 14, 15 on 1:50,000 scale (1969) and No: 58 O/ 7, 8 on 1:50,000 scale (1969)] were used for field and auxiliary data collection. The Devipattinam mangrove area is situated (Lat. 9° 29'N Long. 78° 54'E) in the coastal area of Ramanathapuram district near to Vaigai River estuary of Tamil Nadu. The study area falls in the Vaigai River basin, one of the important River basins in Tamil Nadu. The Vaigai River originates from the Varusanadu hills, the Periyar Plateau of the Western Ghats, and it flows towards the northeast through the Kambam Valley, which lies between the Palani Hills to the north and the Varusanadu Hills to the south. The river drains into the Palk Strait in Ramanathapuram District, which has a length of 258 km and a catchment area of 7,031 sq km. The main tributaries of the river Vaigai are, the river Suruliyaru, the river Mullaiyaaru, the river Varaganadi, the river Manjalaru and river Kridhumaal. All these rivers except Kridhumaal join the river Vaigai near to Vaigai Dam, which is situated in Theni district, whereas Kridhumaal joins Vaigai in Madurai. The catchments of Vaigai River are comprised of crystalline rocks of Precambrian age and Holocene to Recent sedimentary formations situated on the coastal margins.

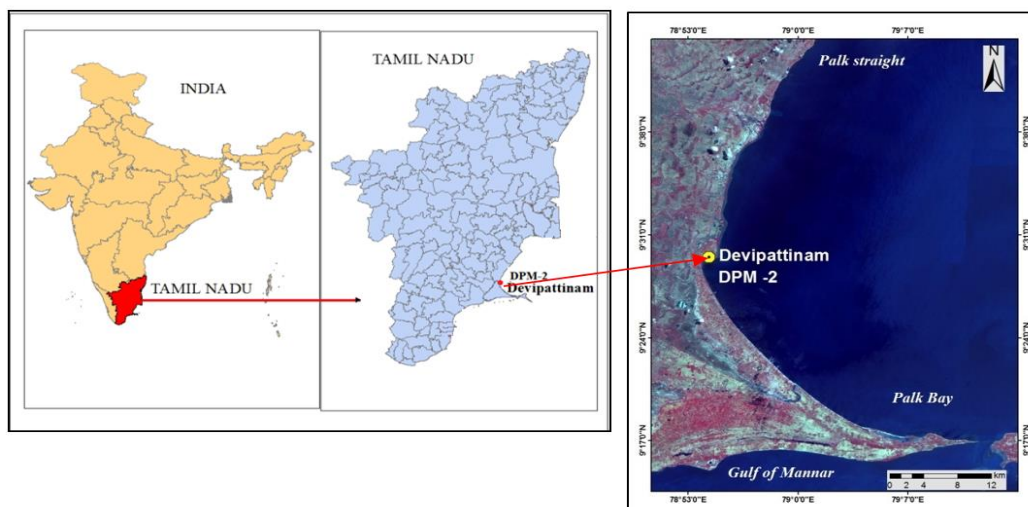


Fig.1 Shows location Map of the study area

The region forms the southern part of the South Indian Granulite Terrain (SGT), which is a high-grade terrain, metamorphosed under granulite facies. Most of South India's shield is made up of granulites, charnockites and their retrogressed products. The sediment source of the study area is belongs to three distinct geological formations namely i) Archaean, ii) Tertiary, iii) Recent to sub-Recent (Balasubramanian et al. 1985; Balasubramanian and Sastri, 1987).

3. Materials and Methods

A sediment core sample was collected during April 2013 by inserting a core tube (PVC tube) with a diameter of 2.5 inches in the Mangrove area of Devipattinam, Tamil Nadu (Fig. 1). The corer was operated manually as far down as possible to retrieve the sediments. A length of 105 cm sediment core was retrieved and stored in the deep freezer (-20°C) for preservation. The core sample was sub-sampled at an interval of 3 cm and thus 35 subsamples were obtained and packed into airtight labeled polythene zip lock covers. Each bottom sediment sample is completely dried in a hot air oven to eliminate the moisture content. The dried sediment samples were homogenized and pulverized using an agate motor. All the 35 sub-samples were subjected to analyze sand-silt-clay ratio, organic matter and calcium carbonate content in the sediments. The sand-silt-clay ratios were analyzed by the pipette method following the procedure adopted by Krumbein and Pettijohn (1938). The values of sand-silt-clay were plotted in trilinear plot diagram (after Trefethen, 1950). Organic matter content and calcium carbonate content in the sediments were determined by titration methods by adopting the procedure given by Gaudette *et al.* (1974) and Loring and Rantala (1992), respectively. For trace element analysis, top 54cm (18 sub-samples) were taken to study very recent sediments for pollution studies. For total digestion, the geochemical analytical procedure suggested by Shapiro and Brannock (1956) was followed. This method was preferred because the sediments consist essentially of detritus silicate minerals, resistant sulphides and a small quantity of refractory material.

4. Results and Discussion

4.1 sediment parameters

Sand-silt-clay ratios are plotted in a trilinear diagram (fig.2) which reveals four types of sediment substrate were found in the study area. In the 105 cm core sample, silty sand type contributes 66cm (63%), sandy silt occupies 33cm (31%) and remaining clayey sand and sandy clayey silt make-up each 3cm (6%). Figure 3 indicates down core variation of sand-silt-clay, organic matter and CaCO₃. The core sediments show top and bottom portions are dominated with a sandy substrate (silty sand) and the middle part are enriched with silty substrate (sandy silt). The presence of sand may be due to longshore drifted sediments that entered into the nearby mangrove habitat and the core site through channels as no direct fluvial input is not perceived here. Partly, fine fractions were removed from the study area by winnowing action of the low magnitude waves/tidal waves.

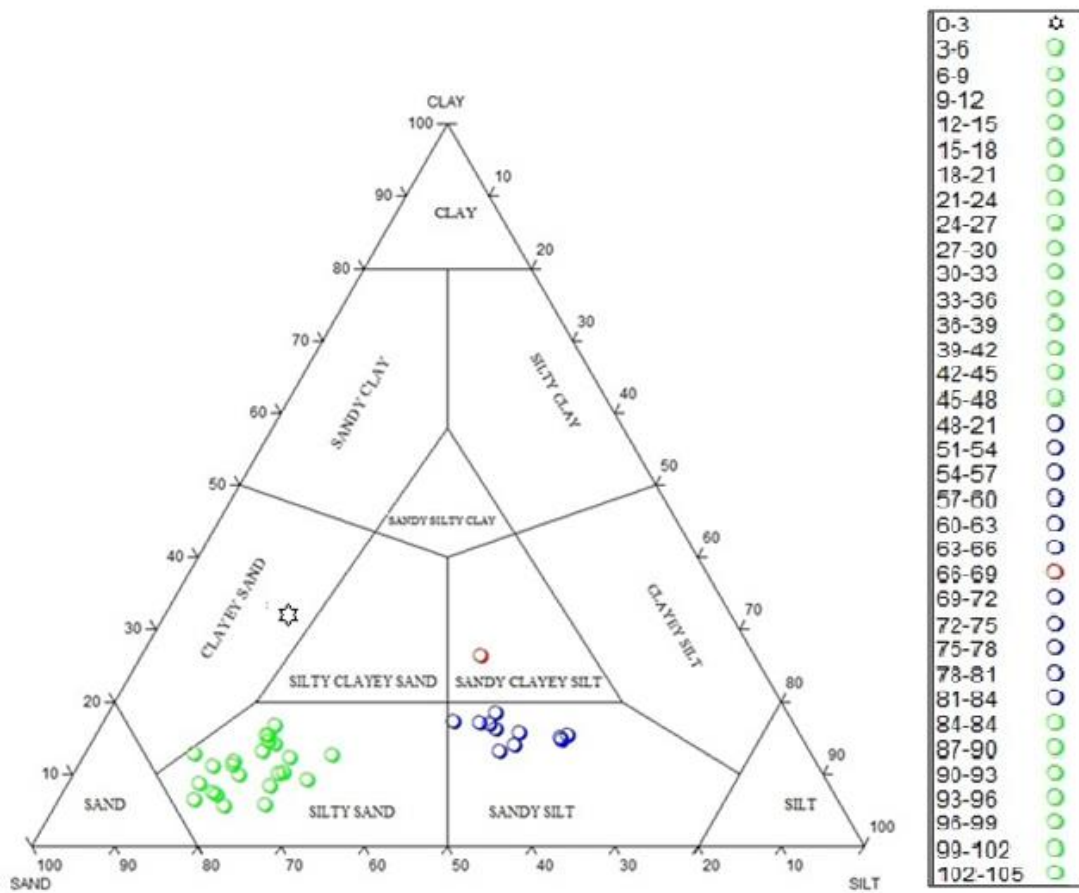


Fig. 2 Trilinear plots of sand, silt and clay ratio for the collected core sample (after Trefethen, 1950).

The availability of the fine fractions at few sub-bottom depths of the middle part of the core indicates that change in the energy conditions and adequate supply of the fine fractions in the study area (Fig.3). The sediment source of the core shows mixed types which are derived from both marine and terrestrial input. The value of organic matter varies from 0.06 to 2.81 % at the depth of 48-51 cm and 99-102cm, respectively.

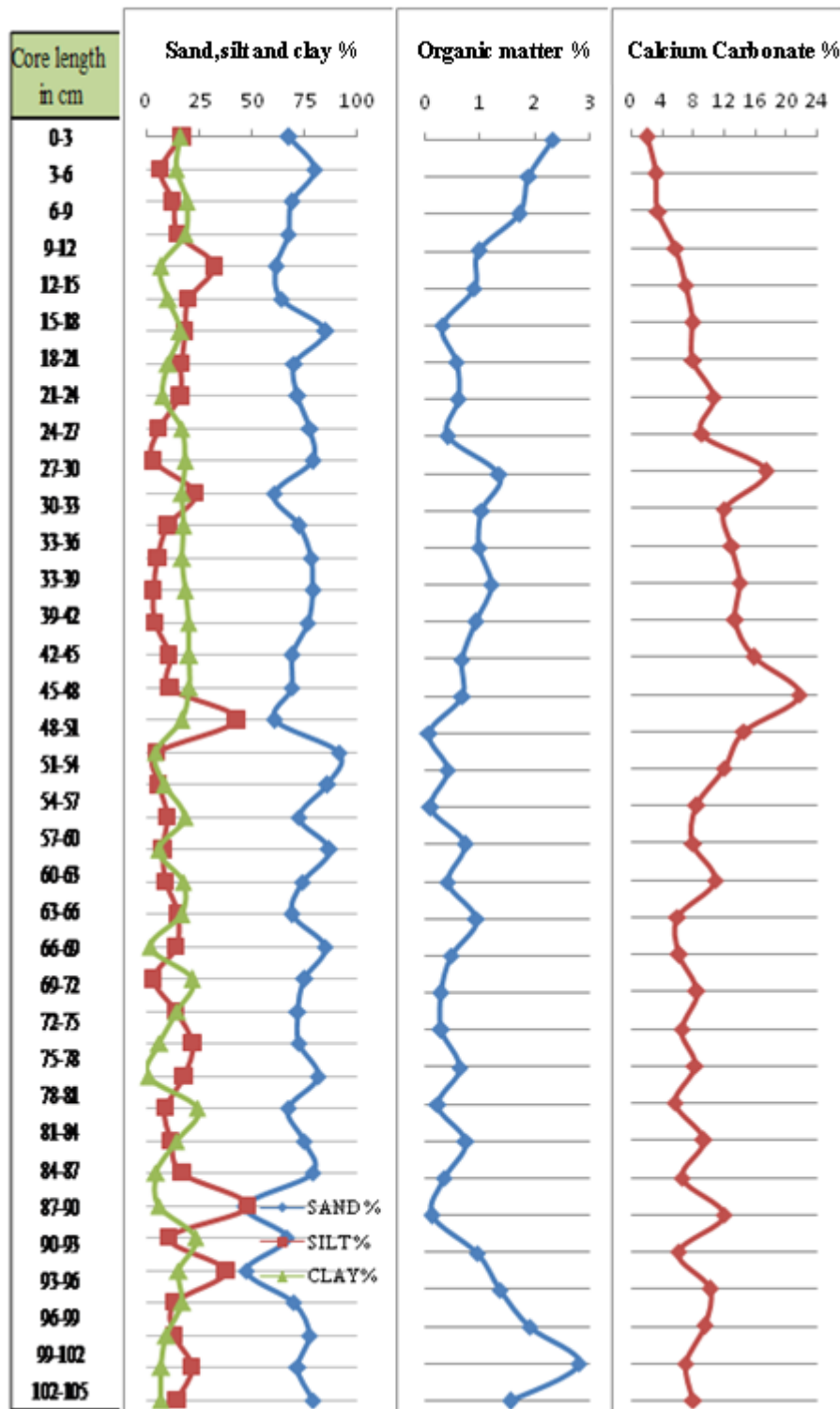


Fig.3 Graph shows estimated values of sediment parameters in the study area.

Figure 3 shows the topmost layers consist of a comparatively high percentage of organic matter which reflects source from mangrove community in the study area and also high inputs of terrigenous materials from adjacent landmasses including the occurrence of intense

weathering/redox condition. The average CaCO_3 in the core sediments is 9.53 % that varies from 2 to 21.8 % at the depth of 0-3cm (clayey sand) and 45-48cm (silty sand), respectively. The CaCO_3 percentage is variable according to depths of the core sample and it is inferred that the abrupt increase of CaCO_3 percentage at a particular depth is due to the enrichment of shell fragments (broken shells) in a sand-rich substrate. A combination of CaCO_3 % (shell fragments) and the sandy substrate is common in the particular depth and this is well correlated with the marine input through the high tidal action and high energy events which might have witnessed in that particular period.

4.2 Trace element distribution

The sediment sample treatment (for trace element analysis) with a mixture of HF, H_2SO_4 and perchloric acid reagent results in complete dissolution. The final solution was analyzed for total Mn, Cr, Cu, Ni, Co, Pb, and Zn in a Varian AA 700 Atomic Absorption Spectrophotometer equipped with a deuterium background corrector. The results were statistically analyzed using Microsoft Excel. Figure 4 indicates trace elements concentration is compared with Bulk Continental Crustal (BCC) values proposed by Taylor (1964) to understand the anthropogenic or other related impacts on the mangrove ecosystem. In the study area, the concentration of trace element values is found in the decreasing order of $\text{Cr} > \text{Ni} > \text{Pb} > \text{Co} > \text{Zn} > \text{Cu} > \text{Cd}$. Table.1 shows presence of Chromium is ranging from 61.8 to 646 ppm at a depth of 0 and 18 cm respectively (Fig. 4). The Cr concentration is observed beyond the limit of upper continental crust i.e. more than 228 ppm and it is due to the presence of ultramafic rocks from the hinterland. Nickel concentration ranges from 97.3 to 216 ppm at a depth of 0 and 102 cm respectively and is well correlated with the silty sand substrate. The Nickel concentration depends on the origin of the soil and pathogenic preference (Adriano, 1986). The presence of lead in the sediments ranges from 1.2 and 14.5 ppm. In the absence, any industry close to the study sites, the reason for the higher Pb content is due to the substantial increase of automobiles and motor fishing boats usage (Jonathan and Ram Mohan, 2003; Jayaprakash et al. 2008).

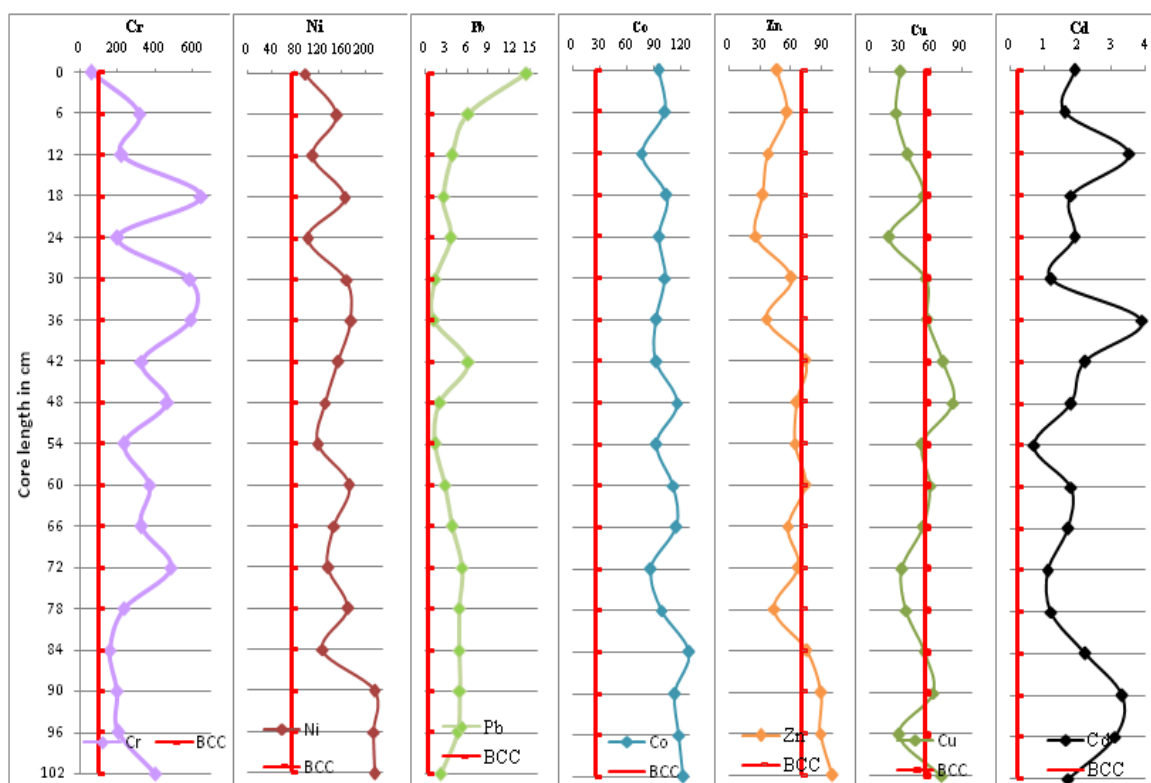


Fig. 4 Down-core distributions of Trace elements compared with Bulk continental crustal values after Taylor, 1964(values are in ppm).

Cobalt concentration ranges from 76.2 to 129 ppm at a depth of 12 cm and 84cm, respectively with an average concentration of 103 ppm. Cobalt is an important micronutrient for marine phytoplankton (Morel et al. 1994; Saito et al. 2001; Sunda and Huntsman, 1995) and the enrichment of Co which may be due to the presence of dense plant diversity in the study area. Zinc concentration exhibits a range from 26 and 99.9 ppm at a depth of 24 and 102cm, respectively. Apart from the weathering of igneous rocks, municipal refuse, automobiles, and agricultural use of pesticides and fungicides containing ZnSO₄ are the additional sources of environmental pollution (Dara, 1993). Vertical profiles of Copper indicate the humic-copper complexes relatively high acid leachable values in the top layers of the core sample and its concentration varies from 19 to 82 ppm at a depth of 24 and 48cm respectively. Cadmium concentration ranges between 0.7 and 3.9 ppm at a depth of 54 and 36cm respectively with an average concentration of 2.06 ppm. According to Calvert and Pedersen (1993), Cd enrichment is independent of the accumulation rates of terrigenous detrital input.

Table 1 Distribution of trace elements in the study area (values are in ppm).

Core length (cm)	Cr	Ni	Co	Zn	Cu	Pb	Cd
0	61.8	97.3	94.8	46.8	30.1	14.5	1.9
6	318.2	151.6	102.2	56.2	26.2	6.2	1.6
12	223	111.4	76.2	37.6	36.9	3.9	3.5
18	646	165.2	104.1	33	52	2.6	1.8
24	201.5	102.5	95.8	26	19	3.7	1.9
30	586	169	102.4	60.3	55	1.4	1.2
36	591	175.7	92.4	36	57	1.2	3.9
42	330	154.6	92.3	73.6	72	6.2	2.2
48	466.5	131.5	115.7	66	82	2.1	1.8
54	236	119.4	92.4	63.5	51.5	1.4	0.7
60	369	172.4	111.6	74.1	59.5	2.8	1.8
66	326	146.7	114.9	56.8	52.6	3.9	1.7
72	485	136.6	86.7	67.4	31.3	5.3	1.1
78	234	170.5	98.1	43.2	35.8	4.9	1.2
84	159	128.2	129.2	74.3	53.2	4.9	2.2
90	198	215.9	113.5	89	62.3	5	3.3
96	204	214.5	117.3	88.4	28.6	4.7	3.1
102	399	216.2	122.4	99.9	70.3	2.3	1.7

4.3 Enrichment factor (EF)

Enrichment factor can be used to evaluate the metal concentration in the sediments in a more comprehensive way and was suggested and interpreted by Birch (2003). According to Salomons and Forstner (1984), the enrichment factor (EF) is the ratio between metal/Al in the sample and metal/Al in the average shale or continental crust; it can be calculated by standardizing the metal content to that of standard materials. EF can be calculated by the following equation:

$$EF = \frac{(Calculated\ metal/Al)_{sample}}{(Calculated\ metal/Al)_{earth's\ crust}} \quad (1)$$

In general, the elemental enrichment is classified as, ≤ 1 —background concentration, 1 to 2—minimal enrichment, 2 to 5—moderate enrichment, 5 to 20—significant enrichment, 20 to 40—very rich enrichment, and >40 extremely high enrichment. The enrichment factor of the study area is given in table 2, it shows Cr has a moderate enrichment level due to the anthropogenic sources, Ni shows minimal enrichment, Co and Pb are found to be moderately enriched. The observed values for Cd show extremely high enrichment, whereas Zn shows no enrichment and the values for Cu reflect background concentration.

Table 2 Average values of Enrichment factor, Contamination factor and Geoaccumulation index for the study area.

	Core length (cm)	Cr	Ni	Co	Zn	Cu	Pb	Cd
EF	0-54	3.51	1.75	3.7	0.67	0.82	3.22	99.1
CF	0-54	3.66	1.83	3.87	0.71	0.87	0.34	10.3
Igeo	0-54	1.02	0.26	1.36	-1.14	-0.9	-2.56	2.62

The study area clearly indicates values of enrichment factor for the trace elements are decreases in the following order for trace elements, Cd> Co> Cr> Pb> Ni> Cu> Zn, collected from the core sample in Devipattinam mangrove.

4.4 Contamination Factor (CF)

The trace element contamination assessment is also carried out with the aid of the contamination factor (CF; Hakanson, 1980). The contamination factor is calculated from the following formula:

$$Contamination\ factor\ (CF) = \frac{Metal\ content\ in\ the\ sediment}{Background\ level\ of\ metal} \quad (2)$$

Where CF< 1 refers to low contamination, 1 to 3 indicates moderate contamination, 3 to 6 implies considerable contamination and ≥ 6 refers to very high contamination. Contamination factor for each metal has been calculated from the core sample and given in table 2; of which Cr and Co show considerable contamination, Ni shows moderate contamination. Low contamination was found in Zn, Cu and Pb, whereas, Cd shows very high contamination, in the study area.

4.5 Geoaccumulation Index (Igeo)

According to (Muller, 1969) General classification of sediment quality based on igeo values given in table 3. Geoaccumulation index is used to assess heavy metal accumulation in sediments (Muller, 1969) and it consists of seven grades (0-6) ranging from unpolluted to highly polluted (Table 4). To characterize the level of pollution in each sampling point Igeo values were calculated using the following mathematical formula,

$$Igeo = log_2 \frac{Cn}{1.5 \times Bn} \quad (3)$$

Where Cn is the measured concentration of the element in the core sample and Bn is the geochemical background value (average shale value proposed by Taylor, 1964) in the earth crust.

According to Muller scale, the mean values of Igeo for the study area is given in table 2, it indicates sediments are enriched for metals in the following order:

Cd > Co > Cr > Ni > Pb > Zn > Cu.

Table 3 General Classification of sediment quality based on Igeo values.

Igeo value	Class	Sediment quality
≤0	0	Unpolluted
0-1	1	From unpolluted to moderately polluted
1-2	2	Moderately polluted
2-3	3	From moderately to strongly polluted
3-4	4	Strongly polluted
4-5	5	From strongly to extremely polluted
>6	6	Extremely polluted

The calculated results of Igeo values pointed out that the quality of sediments about Cd shows moderately to strongly polluted category. Co and Cr are classified as a moderately polluted category. Sediment quality for Ni comes under the unpolluted to a moderately polluted category, whereas Pb, Zn and Cu are classified as an unpolluted category.

5. Conclusion

The present research work has been studied to investigate the background trace elemental concentration for the sub-surface sediments collected from Devipattinam mangrove area in Ramanathapuram district of Tamil Nadu, India. The studied core sediment reveals four types of sediment substrates, of which silty sand and sandy silt were present dominantly that are followed by clayey sand and sandy clayey silt substrates indicate the mixed type of depositional environment. The concentration of trace elements in the core sediments indicates the presence of Cr is high in the study area, which is followed by Ni, Pb, Co, Zn, Cu and Cd. The observed enrichment factor result for Cd show extremely high enrichment and Zn shows no enrichment. The results of the contamination factor and geoaccumulation index pointed out that, elements such as Zn, Cu and Pb are falls under low contamination and unpolluted category, respectively. From the overall result includes, enrichment Factor, geoaccumulation index and contamination factor reveals the study area is highly polluted by cadmium and is well correlated due to anthropogenic sources.

Acknowledgement

The authors are very much thankful to Professor and Head Department of Geology, University of Madras, helped in sample collection. Authors are also thankful to Central Institute of Brackish water Aqua culture Chennai for providing a cold room and UGC-CPEPA scheme ((F.No8-2/2008(NS/PE) dt.14-12-2011New Delhi) providing financial support. Authors also thank the Head of the Department of Applied Geology, University of Madras for providing AAS facility to carry out this work.

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E-Retailing: Challenges And Opportunities In India

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Abstract

E-retailing refers to a practice of selling retail goods through internet. Basically it is a revolution in e-commerce and e-business and modernize way of selling goods and services by online. Due to technological advancement retailing wearing a new concept and emerged as in new form of e-retailing. The current era is full with new challenges, today's trends get old tomorrow and a new challenge covers the market. Therefore, businessman always still in awaken situation in respect to market changes and threats. e-retailing is a practice of selling retail goods on the internet which is useful to customer who have lack of time but need to a variety of goods at reasonable price.

E-retailing or online is growing at faster pace in India. It has witnessed steady growth of 50-60 % over the years. E-retailing accounts for 10 % of e-commerce activities in India. Even though there are growth prospects for online retail in India we have challenges which need to be addressed. The article focuses on the opportunities and challenges for online retailers in Indian business environment.

The Indian Online Retail is a rich segment waiting to be exploited. Internet is a potent medium that can serve as a unique platform for the growth of retail brands in India. The medium holds many virtues favorable for the retail industry including a higher customer penetration, increased visibility, and convenient operations. The current web-based models for e-tailing are part of an embryonic phase preceding an era of rapid transformation, challenge, and opportunity in Indian retail market. The Indian retail market is witnessing a revolution. The growth of internet has enabled the new retail format of the virtual retailer to emerge and forced the existing retailers to consider e-tailing model of retailing as well. Internet retailing or e-tailing has firmly established itself as a viable alternative to store based shopping. This paper attempts to provide a clear picture about the e-tailing in India and its opportunities and challenges.

Key words: E-Retailing, internet, challenges, opportunities, strategy.

Introduction

Retail scenario has been wearing new approach rapidly due to the revolution in field of information technology. IT enabled world has been changing market scenario by introducing new hi-tech technology rapidly by internet, maximizing uses of smart phones, tablet and new electronic equipment covered with new application and software. The fact is not denying that in IT enabled world a huge number of customers are consuming internet facilities and it become as a necessary need of life.

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Today is the era of globalization and customer is aware in respect to variety of products and bound within a particular pace to access products available anywhere in the world. Now he can go beyond the boundaries of any market area where he lives to access the things of his interest.

At kearney's 2013, global retail e-commerce index stated that India has unharnessed online retail potential. India has become a attractive destination for e-commerce due to a huge size of peoples are using internet and mobile internet facilities so growth prospect of online retail are high as well as growth opportunities there are threat which need to be considered.

Objectives of the Study

The major objectives of the study include:

- 1) To understand the online retail market in India and its impact on Indian retail.
- 2) To analyse the opportunities for online retailing in India
- 3) To study the major challenges for online retailers in India

Scope and Methodology of the study

The study looks into the online retail market and how it had impacted the Indian retail industry. The scope of the research study is limited to online retail market, the opportunities and challenges for the evolving online retail market in India.

Source of Data: The study is primarily based on the secondary data collected from journals, industry reports, company websites, news articles and reports.

Essential of e-retailing- There are certain essential components for an e-Retailing business to be successful. Before setting up an electronic storefront, one must consider these components well in advance. The important essentials of e-retailing are as-

E-Catalog

Search Engine

Shopping Cart

Distribution of Digital goods

On line customer sales person

An order status checking facilities

Create consumer community.

E-retail and Major online retail players in India- E-retail or online retail refers to retailing activities done through internet. We have many online or e-retailers in India who provide a variety of products to customers. In general retail business is referred as Business to Consumer (B2C).

We can categories Online retail players into two types, one is

- category focused players.
- other multi category focused players.
- ✓ Category focused players provide particular merchandise with deep assortment. ie. - Myntra, Jabbong (Apparels and Lifestyle products), Bigbasket, Local banya (Grocery segment) and Fabfurnish, Pepper fry (Furniture), Carat lane, Juvalia and you (jewellery), First cry, my baby cart (baby products).
- ✓ Multi category players provide variety of merchandise with limited assortment. Ex: - Flipkart, Amazon, Future bazar and Snapdeal etc. For better understanding we look at some of the categories and the major online retailers in these categories. Retailers advertise different type if products by different websites. products like books, stationery, electronics, furniture, apparels, personal care, grocery, flowers, sports goods and services also.

- ✓ The major players in book category include Amazon, Flipkart, Naaptol and Land mark.
- ✓ Stationery items are sold by online players like Flipkart, Amazon, Stationery shop, Snapdeal and Homeshop 18 etc.
- ✓ In Electronics segment we have specialised players like Croma (Tata group) and E-zone (Future group) along with other players like Flipkart, amazon, Infibeam, Snapdeal, Future bazar, Naaptol who sell electronics items like mobile phones, computers, tablets, television and other durables.
- ✓ In Furniture category major players are like Fabfurnish, Pepper fry, Urban ladder, Home town, Zansaar and Homeshop18 etc.
- ✓ In Apparel and personal care segment we have Myntra, Jabong, Zovi, fashion and you, Flipkart, Amazon and Yebhi.com etc.
- ✓ In grocery category the major players include Bigbasket, Greencart, ekstop, Local banya, Nature's basket etc.
- ✓ specialised players like Ferns n Petals, Tilia and Floraindia for flowers and birthday cakes etc.
- ✓ In sports goods the major category players include Decathlon, Playground online, Khelmart and Sports 365 etc.
- ✓ Service retailers include lenskart which provide eye tests along with eye lens, glasses and well forte for some limited medical service. Some retailers like Apollo pharmacy, Healthkart and Buydrug make online customer and do online sales of different variety of medicines.
- ✓ In category of wholesale market (B2B) we have players like best price (Wal-Mart) is playing a remarkable role in online space.
- ✓ In C2C (Customer to Customer) we have E-bay, Olx which serve as an online shopping space and for auctioning of different products.

What is E-Retailing- The sale of goods and services through the internet. Electronic retailing includes business to business and business to consumer sales. The term is an inevitable addition to other similar terms such as e-business, e-mail and e-commerce. E-retailing usually refers to the business to consumer transactions. E-retailing is gaining ground. Online retailing is divided into three main category-

1-click and brick – the businesses that use both the online as well as the offline channel lies in this category.

2- click- the businesses that operate only through the online channel fall into this category.

3- brick and mortar- this is the conventional mode of retailing. The businesses that use the latest retailing channels and still rely upon the conventional mode belong to this category.

e-retailing offers the consumer a basket full with variety of products through websites with useful links to similar sites that give opportunities to consumer to choose and compare with homogenous products and can select goods as per desirability.

The convenience of online purchasing is unmatched indeed. It save the time and do less stress of waiting in long que , billing and carrying along with dealing with irritating sales man and shopkeeper.

However, e-retailing causes problem with fit, when consumer make order online, he do not have the option to try the products, return method may also very tough, it can be difficult to return. The shipping and handling costs may turn the customer away. e-retailing technology savvy customers and this puts a limit its potential reach.

No doubt that e-retailing is emerging as an interesting phenomenon in the retail industry that is on a rise despite the disadvantages associated with it.

Opportunities in India - The current business environment in India has the potential to enhance the growth of the online retail in India. Some of the key factors that can contribute to the growth of online retail in India include

a) **Increase in the number of Internet users and online buyers-** According to Google, India now have around 200 million internet users which is expected to reach 500 million by 2018. Every year there is an estimated increase of 5 million internet users every month.. This will enhance the accessibility of internet for common people. Forrester's Asia pacific retail forecast predicts that online buyer population will reach 39 million by 2014 and 128 million by 2018 which can stimulate the growth of online retailing in India.

b) **Smart phone revolution and Mobile Internet-** India is one of the markets which is witnessing growth in smart phone customers. In 2013, there were 51 million smart phone users in India which will enhance to 627 million at the end of 2019.. The availability of cheap smart phone can enhance the growth rate in future. Access to 4G and 3G mobile data networks and availability of cheap smart phones can enhance the customer transaction using mobiles. Most of the online retailers are developing their mobile applications to enhance the shopping experience. Amazon came up with their own 3D smart phone- "Fire phone" to enhance the mobile shopping experience of their customers. If we compare the mobile internet users we can observe increasing trend with respect to mobile internet users., Of the total user base, 87% or 493 million Indians, are defined as regular users having accessed internet in last 30 days . These users will be accessing internet using mobile phones which can enhance e-retailing opportunities in India.

c) **Increase in transaction by Debit cards, Credit cards, Net and mobile banking-** Retail electronic payments was around Rs. 2258780 billion in 2016-17 which grew with Rs. 2527539 billion in 2017-18. Credit card payments has grown seven times during this period and reached Rs. 2407 billion in 2015-16 which increased by Rs. 4590 during 2017-18 . In the case of Debit card transaction there was an increase in 15 times which is 25 around Rs. 1589 billion in 2015-16 which reached by Rs. 4601 billion in 2017-18. . If we analyse the trend electronic transaction has increased during 2016-17. There was an increase in registered internet banking users in India during 2015-18. Mobile banking is emerging in India which witnessed a growth with 251 million users in 2018 compared 163 million users in 2017. From these trends we can conclude that Indian customers are gradually changing with respect to the way they do financial transactions. Credit, Debit cards and Net banking can facilitate quick and convenient transaction for customers which can augment the growth of e-retailing in India. With the emergence of secure transaction methods like two factor authentication, One Time Passwords(OTP) and payment gateways, consumer's preference to shop and do financial transactions online has increased. This can enhance online retailing because of enhanced security and easiness in doing the transaction. Some of the retailers are providing the facility of cash on delivery options (COD) to customers those who are sceptical about the secure transactions in online platforms. This forms more than 60% of the total ecommerce transaction in India. Banks and ecommerce sites are taking proactive steps in enhancing on-line transactions by addressing security and other issues with respect to online transactions.

d) **Rising disposable Income and Rapid Urbanisation.-** Annual disposable income in India is expected to increase at CAGR of 10% and expected to be USD 84 billion in 2021

from USD 24 billion in 2017 on account of a healthy growth in organized retail sector. According to 2011 Census, the Urbanisation showed an exponential growth rate of 2.76% . We have around 337 million people who live in urban areas in 2011. The census data shows that the no of statutory towns increased at the rate of 6.37% during 2001-2011. There is steady increase of urban agglomerations at the rate of 23.7% during this period. These trends can enhance the prospects of online retailers.

e) IT hub- in india , Internet penetration rate as only 2% (40 million) in 2006. It increased to 35% in 2018 including both rural- urban users its around 500 million. India is one of the highest in world and we have one of the highest numbers of Internet users in absolute terms.it is expected that internet penetration ill increase around 829 million Indians by 2021 as per CISCO report. India is considered as one of the prominent IT hubs in the world but, all these have somehow not translated into positives in the retail space. Retail industry in India stands at USD 795 billion in 2017 and is expected to grow to USD 1.2 trillion by 2021 and organized retail is fast catching up. Many of the big retailers have forayed into the on-line mode without much success. On-line retail forms a meager 0.47% of the total retail market. This shows the plethora of opportunity for on-line retailing in India. The Indian e-commerce market at INRI 9200 core is heavily tilted towards travel sites. More than 75-80% of this market is constituted by travel portals like Makemytrip.com, Yatra.com etc. About 12% of the rest is contributed by on-line classifieds like matrimonial and job portals. The above mentioned data is motivating enough for both buyers and sellers, who are willing to use internet as a source of their commerce, as always we are focused on the customer centric market where the customer is god, and every dance on the stage of market is performed according the tune of customer.

Here we will focus on some other of the factors which attracts the customers preferring the online purchasing.

1. **Convenience Factor:** Online retailers are moving towards enhancing the convenience factor and thus attracting the shoppers to use this channel. Moreover the growth of the mobile communication has led to the growth of the online retailing as people are more accessible to internet 24 x 7. Like in the case of purchasing from the physical market we have to wait for the shop to open and certainly we try to get our merchandise before the shop closes, but in case of online retailing there is no time limits involve all you need is a internet connection and money in your pocket to pay the price and everything is at your door step.

2. **Payment Mode:** As compare to the earlier days where we have to make the payment in advance and wait for our order for weeks, now we make the order first and make the payment when the goods are delivered to us, WatchKart.com, lenseKart.com, FlipKart.com, etc. are some of the examples. 3. **Delivery:** For general type of products line DDV, CD, Goggles, books etc., are being delivered to the customer in 2 to 3 working days and the goods which are required to be produced like special print sarees, customized bags etc., are delivered within 5-6 working days. Moreover single unit of any product chosen by the customer can also be delivered transborder, which may not be possible to import in case of physical purchase.

3. **Product Comparison:** without having to move from one shop to other for comparing the benefits of the product, the shopper gets the benefit of comparing the features and cost analysis at one place. Most of the sites are providing this facility wherein shopper can choose the product which exactly suits him.

4. Cost and Time Saving: a shopper saves a good amount of time and money by shopping online. In the metros and even in the smaller towns which are growing fast, the life of an average person has become very fast. He has very little time after his normal routine office schedule to go to the market and purchase even the daily need items.

Challenges in India ---- - Even though India online retailing has growth prospects, there are multiple challenges for e-retailers in India market. It includes

a) Logistics- Effective logistics play a key role in determining the operational success of e-retailers. If we look at the India our country is large and fragmented with poor infrastructure facilities. So timely delivery and other priority services are the biggest challenges for online retailers in our country. Moreover cost of logistics in India is high due to lack of adequate infrastructure. This has forced some of the retail players like Flipkart and Amazon to build their own logistics arms. Flipkart has e-kart logistics which takes care for their delivery process. Some of the online retailers are tied up with logistics companies for fulfilling customer orders. One of the biggest problems faced by logistic companies is the limited airline feet size of logistic companies. We look at the Indian scenario we have limited fleet of freight carriers which can hinder the priority services like same day delivery for customers. Air fleet size comparison Courier service providers of US and India Another important drawback is the limited technology investments and developments in Indian logistics sector. If we look at developed countries there is huge investment in technologies like GPS, RFID technology to enhance the tracking of shipment and delivery of customer orders.

b) Poor Internet speed- One of the biggest problems India facing is the slow speed internet connection which can affect the prospects of online retail in long run. The average internet speed is less than 1 mbps which makes it one of the low ranked nations in global scenario with respect to internet speed. This can affect the accessibility to shopping sites and online transactions which will in turn reduce the customer buying through online portals.

c) Customer Trust and Loyalty- Some of Indian online retailers lack trust among the customers. Even though we have trusted players like Flipkart, Myntra and Jabong, other retailers were not up to the mark compared with other players. The entry of foreign online retailers like Amazon has forced Indian players to enhance customer loyalty. Flipkart has started an initiative called Flipkart first which provides same day delivery, priority customer services, free shipments and exclusive offers.

d) Overcoming touch and feel mental barrier of Indian customers- Indian customers prefer to touch and feel products before they purchase. The biggest challenges faced by online retailers to overcome this barrier. Online retailers are trying to overcome this barrier by adding more specifications and information about products. They also share customer feedbacks to enhance the confidence of customers.

e) COD and Returns management- Cash on delivery has emerged as the preferred mode of payment by online customers. This has created certain critical issues for online retailers. Some of the logistics providers levy extra charges from the customers which can affect the retail business in long run. Delay in remittances of the Cash collected by logistics providers from customers can reduce the working capital for online retailers. Another important issue faced by online retailers is the customer returns and how to handle it. Some of the logistics players don't have the capacity to handle the returns. More over this can create an additional cost for the retailers which is an important issue faced by online retailers. This has forced some of the retailers to start their own logistic arm to address these issues in a better manner

which can enhance customer trust and convenience. Moreover this can provide the cost advantage for online retailers in long run.

f) Complex tax regime- One of the major constraints faced by e-retailers is the complex tax regime in India.

g) FDI policy in B2C ecommerce- India's FDI policy restricts 100 % FDI in Multi brand retail which is applicable to e-commerce activities also. In online B2B e-commerce 100% FDI is allowed but this is not applicable to B2C ecommerce activities. Government allowed 51 % FDI in B2C e-commerce for retailers with brick and mortar operations. Currently most retailers are following a market place model in which online retailer provides a platform for potential buyer and sellers. This can result in limited margins, restricted control over product, service and speed of delivery. The restriction with respect to FDI is affecting the growth and expansion plans of online retailers

h). Slow change in the buying behavior - Indians are still reluctant to buy on-line and prefer brick and mortar models. Indians still like to have a feel of product and spend time in buying.

i). Inability of on-line retail players to sway customers from offline mode to on-line retail channel: -Lack of proper marketing and advertisement, inability to create a brand image, lack of proper usage of all possible on-line means like search engines, paid marketing, on-line ads, social networking, blogs etc to reach the customers. Inability of online retailers to drive the values a customer can derive by shopping on on-line channels.

j). On-line portals are not up to the mark:- There have been few lacuna's in the exiting on-line websites like poor front ends, website search options are not good, lack of sufficient information about products and terms and conditions, slow websites etc

k). Lack of seriousness:- A lot of on-line portals have come up in India backed by major retail distributors but, for many it seems to have been just a one time setup. Post this there hasn't been enough drive to propagate the brand and services of the portals among potential clients. Our discussion with few portal owners gave us a feel that many big retailers have opened a website because their peers are doing so.

l). Issues concerning security and transaction frauds.- In addition many of the web portals don't support all on-line modes of payments. There are high occurrence of failed payments and this is often a deterrent for clients to revisit the portal.

m). Competitors are just a click away- When consumers search, they have multiple options available, and many use search to navigate the Web rather than type in or bookmark specific sites.

n). Visitors can disappear in 15 seconds or less.- Online consumers are goal-oriented shoppers. If they don't immediately find what they're looking for when they reach your site or landing page, they're gone in under 15 seconds.

o). Shopping is a multistep process -. Online consumers love to browse. Many spend a fair bit of time visiting several sites just to gather information. They may also compare the offerings of several competitors before hitting the "buy now" button.

p) Time between initial visit and purchase has increased- Increasingly financially challenged consumers may wait longer before buying.

q) Customers wait for merchants' best offer- Having been seduced during the holiday season with free shipping and handling and other price-driven offers, consumers have been trained to wait for a special deal.

E-retailing Strategies

Getting the customer information in the proper way

Target the right customers for the time being
Create and innovate an effective communication
Strong logistic and supply change management
Right positioning in the right way

Conclusion

Indian retail sector is witnessing dynamic changes over the years. With a steady growth rate of 50- 60% online retail can make significant contribution to retail industry and economy of our country. In modern scenario, e-Retailing or online shopping has become part and parcel of the people in India. The new wave of consumerism coupled with urbanization with paradigm shifts in the demographic and psychographic dynamics have driven consumers frequently to use retail website to search for product information and make a purchase of products.

There are several things have been discussed to consider when e-retailing start, This present paper makes an attempt to: deals with the challenges occurring in the e-retailing, opportunities in Indian scenario, the strategies that are being followed in present scenario in e-retailing. e-retailing in India can be a success at the same time we measure so many valuable things like

Suggestions and recommendation

- 1- e-retailers should have change their business models and understand their consumers more with keep the fact in mind that consumers are the real Kings.
- 2- To make conducive environment because it is inevitable to create a sustainable environment mechanism for futuristic growth of e-Retailing in India.
- 3- To capitalise on these growth trends we need to improve our physical infrastructure, policy framework and operational environment in our country
- 4-. To determine the value of e-commerce in the India retail sector.
- 5-. To investigate current trends and technological advancement and usage. like they are growth in online sales, growth.
- 6-. To explore a possible strategy and approach to online e-retailing.
7. To determine and clearly articulate the advantages and disadvantages of having an online e-retailing.

Now a day's E-retailing is playing vital role in domestic and international, with this technology customers can register and communicate with business to order product and services and can pay from a credit card or debit card to the respective companies.

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The Role of MUDRA in the Growth and Development of the MSME and Its Performance in Uttarakhand

MERAJ*

Abstract

The Micro, Small and Medium Enterprises also known as the MSME Business have been backbone to the Indian Economy. Its contribution to the GDP of the country cannot be laid aside as it is a sector associated directly to the common men which require a dynamic and innovative approach. Taking the significance of the MSME sector into account, the Governments, time to time try to take all necessary steps to promote this sector and have even initiated various schemes to make feasible and ample funding and finance available for a smooth operation. MUDRA (Micro Unit Development And Refinance Agency) is part of this drive only which ascertain "funding the unfunded" or to accelerate and encourage the pre-established MSME units financially to meet their financial requirements at a very reasonable rate of interest. The present study is a sincere effort to emphasize and elaborate the role of MUDRA in the growth and development of the MSME in Uttarakhand.

Keywords: MSME, MUDRA, Growth and Development Financial Requirements

Introduction

MSME (Micro Small and Medium Enterprises) is considered the rear wheels of the economy which gears the GDP at a notable pace. The progress and growth of an economy depend enough upon the small and medium businesses as they facilitate the employment generation and a sound contribution to the GDP. According to NSSO Survey (2013), there are more than 5 crore small business enterprises in India. Most of these are individual owned enterprises. They get very little credit, and that too mostly from non formal lenders, or their personal sources. Providing feasible finance to such small business units may transform them as huge contributor to the economy as well as GDP enhancer and also better a better source of creating employment opportunities in the country. Almost 90% of the MSMEs consist of small business units including street vendors, small restaurants and hotels etc. which require small finance to meet their various requirements time to time. Most of the times, the MSMEs used to meet their financial requirements from their personal sources and local money lenders. Sometimes, they would bear a high rate of interest which was very costly to the borrowers. Micro financing has been an effective tool to cope with this problem and for the acceleration of the MSMEs in India. In this context, governments have taken various measures to facilitate micro finance through several drives and MUDRA stands for *Micro Unit Development and Refinance Agency*, emerged as a significant remedial schemes to encounter the shortage of funding of the MSMEs. Prime Minister Shri Narendra Modi launched MUDRA in the year of 2015 on 8th April with an amount of INR 20,000 crore along with a guarantee amount of INR 3,000 crore to provide credit facilities up to INR 10,00,000 to the non-corporate, non-farm small or micro business units. MUDRA was launched with a mission of creating an healthy and suitable environment for the development as well as growth of small and micro level business enterprises with sustainability ,

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collaborating with partner institutions in attaining its goals and providing a secured financial structure in the country. The main objective of MUDRA is to encourage small entrepreneurship and micro business units and to facilitate their smooth and feasible operations and to fund the unfunded. The very purpose of MUDRA is attaining the target of overall development the MSME with their inclusion and sustainability by supporting and promoting partner institutions and creating an ecosystem of growth for micro enterprises sector.

Literature Review

Shahid and Irshad (2016) conclude that MUDRA can be helpful in formalising the informal financing by funding the unfunded and may shrink the gap that lies in microfinance.

Avani. T (2016) concluded that Mudra can be helpful for small business units of both rural and urban areas to meet their financial needs of upto 10 lakhs.

Godha and Nama (2017) conclude that Mudra Yojana has increased credit opportunities as a tool of financial inclusion.

Chaudhary (2017) suggests that Mudra Yojana will give encouraging results and may play a significant role in Make in India.

Kumar (2017) states that MUDRA Yojana is the most recent scheme to promote the micro and small business sector and will play a leading role in the growth of the these enterprises.

Objectives Of The Study

- To examine the MUDRA and analyse its role
- To study its products and offerings
- To analyse the performance of MUDRA in Uttarakhand

Research Methodology

The present work is based on the secondary data and information collected through various Books, Journals, Research Papers, Media Reports, News Papers, Magazines and websites.

Limitations Of The Study

- The present study is based on secondary data only.
- Time restraints during collection of the data.
- The limitation of data (if any) will influence the study.

MSMEs- An Appraisal

The MSME (Micro Small and Medium Enterprises) sector is the backbone of Indian economy. The MSMEs fall under MSMED Act 2006. This sector is the most spirited sector promising high rate of growth for the economy. There are more than 5 crore MSME units in India. This sector is mostly unorganised but second largest employment generating sector after agriculture. It is a dynamic sector which ranges from street vendors, small hotel to medical and electronic industry. The MSME Sector has maintained a constant growth rate in last couple of years. The contribution of this sector to the GDP is significant and cannot be laid aside. This sector contributes almost 45% of total produced output and 40% of India's export to the world including manufacturing of more than 8,000 products. India being an under developed economy is very much dependent upon this sector for acceleration of its GDP and overall growth. The following is the classification of MSMEs as per the capital investment.

Table-1 Classification of the MSMEs

Classification	Services	Manufacturing
Micro Units	Up to 10,00,000	Up to 25, 00,000
Small Units	More than 10,00,000 but less than 2 crore	More than 25, 00,000 but less than 5 crore
Medium Units	More than 2 crore but less than 5 crore	More than 5 crore but less than 10 crore

Source: <https://msme.gov.in/know-about-msme>

Mudra- An Appraisal

The declaration of MUDRA-The Micro Units Development and Refinance Agency was made during the Central Government's Budget Speech by the Union Finance Minister Shri Arun Jaitley in Parliament followed by the registration as a company under the Company Act 2013 in March 2015 and as NBF (Non Banking Finance Institution) with the RBI on 07th April, 2015 and was officially launched on the very next day by the PM of India, Mr. Narendra Modi during a programme at Vigyan Bhawan, New Delhi aiming the development of micro and small entrepreneurs by providing them with feasible credit facilities. its initial amount was INR twenty-thousand crore and a guarantee amount of INR Three-thousand crore targeting funding of unfunded. MUDRA formed through a charter with an accountability to develop and fine-tune Micro Finance Institutions primarily lenders to the Micro and Small Business Units which deal production, merchandise and service operations. The prime objective of establishment of MUDRA Bank focuses on encouraging micro and small units and entrepreneurs to enhance their potentials as well as developing competencies among them by making available well organised and accessible credit structure as well as reducing financial obligations and liabilities.

Objectives Of Mudra Bank

- Regulate the lender and the borrower of the microfinance and bring stability to the microfinance system through regulation and inclusive participation.
- Extend finance and credit support to Microfinance Institutions (MFI) and agencies that lend money to small business, retailers, self-help groups and individuals.
- Registered all MFIs and introduce a system of performance rating and accreditation for the first time. This will help last mile borrowers of finance to evaluate and approach the MFI that meets their requirement best and whose past record is most satisfactory. This will also introduce an element of competitiveness among the MFIs. The ultimate beneficiary will be the borrower.
- Provide structured guidelines for the borrowers to follow to avoid failure of business or take corrective steps in time. MUDRA will help in laying down guidelines or acceptable procedure to be followed by the lenders to recover money in cases of default.
- Develop the standardised covenants that will form the backbone of the last-mile business in future.
- Offer a Credit Guarantee scheme for providing guarantees to loan being offered to micro businesses.
- Introduce appropriate technologies to assist in the process of efficient lending, borrowing and monitoring of distributed capital.
- Build a suitable framework under the Pradhan Mantri Mudra Yojana for developing an efficient last-mile credit delivery system to small and micro busines.

Mudra-Products And Offereings

Under PMMY, MUDRA has launched three different products as per the stage of business and funding needs which are categorised in the following Table-2.

Table-2

Category	Business Type Covered	Loan Limit	Rate of Interest
Shishu	Newly started Business	0-50,000	10%-12%
Kishore	Already set Business Units at Medium stage	50,001-5,00,000	14%-17%
Tarun	Well established Business which needs funds to expand	Upto 10,00,000	16% or more

Role Of Mudra Towards MSMEs

MUDRA is playing a significant role towards development of MSMEs and generating opportunities for the acceleration of business as per the requirements. MUDRA's role can be summarized as follows:

- Framing the guidelines for micro business units.
- Providing the credits or advances up to 10,00,000 to meet business needs.
- Regulating the Micro Finance Institutions and refinancing the MSMEs.
- To carry out credit guarantee drives to strengthen MSMEs.
- Formulating the lending norms for Micro Finance Institutions to avoid over indebtedness.
- Carrying out the promotional campaigns for Micro Finance.

Performance Of Mudra Bank In Uttarakhand

Table-3

Shishu (The Loans up to 50,000 INR)			
Year	Total Sanctioned	Total Sanctioned Amt in Cr.	Total Disbursed Amount in Cr
(2015-2016)	326802	695.27	688.99
(2016-2017)	246341	632.54	622.27
(2017-2018)	188604	572.65	559.58
2018-2019 (Provisional)	157968	446.35	430.38

Table-3.1

Kishor (Rs. 50,001 to Rs. 5,00,000)			
Year	Total Sanctioned	Total Sanctioned Amt in Cr.	Total Disbursed Amount in Cr
(2015-2016)	27554	651.97	632.07
(2016-2017)	33075	766.04	735.81
(2017-2018)	55269	1149.70	1101.81
2018-2019 (Provisional)	43407	950.13	891.74

Table-3.2

Tarun (Rs. 5,00,000 to Rs. 10,00,000)			
Year	Total Sanctioned	Total Sanctioned Amt in Cr.	Total Disbursed Amount in Cr
(2015-2016)	5651	441.15	424.02
(2016-2017)	7163	575.54	555.79
(2017-2018)	10910	850.87	818.69
2018-2019 (Provisional)	10087	815.77	776.48

Table-3.3

Total			
Year	Total Sanctioned	Total Sanctioned Amt in Cr.	Total Disbursed Amount in Cr
(2015-2016)	360007	1788.39	1745.08
(2016-2017)	286579	1974.12	1913.88
(2017-2018)	254783	2573.22	2480.09
2018-2019 (Provisional)	211462	2212.25	2098.59

Conclusion

The Small And Micro Businesses are the root of the economic growth and development and are also known as backbone to the GDP of India. Several schemes have been launched to strengthen and support this sector but efficiently execution all these schemes have well been matter of concern for the governments and being MUDRA part of the same drive has sound potentials but a good and sound execution matters a lot. MUDRA has been set up with prime objective of benefiting the small and micro manufacturing units as well as self employments in not only rural and under developed areas but also the urban areas with facilitating a credit limit up to 10 lacs under three categories viz. Shishu, Kishore and Tarun. The MUDRA will be favourable to the small and micro entrepreneurs in India and may also lessen the problem of unemployment in the country especially in the states like Uttarakhand. and thus can play a significant role in strengthening the GDP of the country and will pioneer the progress and growth of the nation.

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A Study Of Investors' Perception Regarding Financial Advisors

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Abstract

The objective of the study was to analyze the investors' perception regarding financial advisors on the investment decisions in the State of Haryana (India). The data was collected through structured questionnaire to 400 peoples working in different sectors of Haryana. It was found from the analysis that there is exists a relationship between investment decisions of investors' and their perception regarding financial advisors. A frequency analysis is used by the researcher in order to assess the count of the respondents in regards to the issue attempted to be researched within this section. The frequency analysis has been further viewed using a bar plot and ANOVA testing for better visualization and understanding. It was depicted that the investors do seek the advices of their financial advisor hugely. Moreover it was reflected that the involvement in financial investment decision making process is much influenced by the perceptions of financial advisors and also they are well maintained the investor's portfolio and offered much insight on the same to their investors.

Introduction

Financial brokers or advisors play a very important role in the transactions regarding certain instruments like shares, mutual fund, commodity market, futures, and options. Therefore it is important to know the perception of respondents about their financial advisor in undergoing a financial portfolio decision making process. In the current economic scenario, money is considered as the root cause of all happiness. People start investing for a secure life and bright future. But the most important dilemma is that investors are confused with various avenues and their risk return profile. Investment is the sacrifice of current money or other resources for future benefits. In the financial sense 'investment is the commitment of a person's funds to derive income in the form of interest , divined, premiums, pension , benefits or appreciation in the value of their capital , purchasing of shares, debentures, post office savings certificate , insurance policies are all investment in the financial sense".The role of financial advice on investor trading behavior by analyzing the influence of advisor personality. The study utilized the Big Five personality framework from Costa and McCrae (1992) to measure personality traits of advisors and examined the data collected from 314 stock investor–advisor dyads. Personality traits of advisors were measured by the NEO-Five Factor Inventory (Costa and McCrae, 1989). Confirmatory factor analysis was conducted to assess the fitness of the Big Five model. We followed two-stage least square method for estimating endogenous covariate by employing instrumental variable analysis. Probit model was used to evaluate the moderating influence of advisor personality traits on the association between the usage of financial advice and trading behavior. The authors found that financial advice positively impacts investors' stock trading frequency. The authors also provide empirical evidence that

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financial advice is more likely to increase trading frequency when advisor personality tends to be openness, conscientiousness and agreeableness. On the other hand, information acquired from financial advisors causes fewer adjustments in investors' portfolios when the personality of advisors is likely to be extraverted and neurotic. (Tauni 2019)

Objectives Of The Study

- To identify the role of financial advisors in investment decisions making process of investor's in the state of Haryana.
- To analyze investors' perception regarding financial advisors.

Research Methodology

Research Design: ANOVA test for better visualization and understanding.

Sampling Unit: Sampling unit implies respondents from the people / investors.

Sample Size: Sampling size is taken to be 400 for convenience. Data was collected through a structured questionnaire

Sampling technique: Sampling technique is the technique used to select the sample size. Convenience sampling technique was used. In this, investors were taken according to the convenience of the researcher.

Sampling design: since the information was to be taken from investors, a questionnaire was prepared for studying the role of financial advisors on investors' investment decisions making process and also identify investor's perception regarding financial advisors in the state of Haryana.

Data collection source: the study is based on both primary and secondary data. Primary data was collected by communicating with respondents through a structured questionnaire. And secondary information was collected from different published materials vis .Books, Journals, magazines & websites etc.

1.1 Quantitative analysis

2.2.1 Role of financial advisor

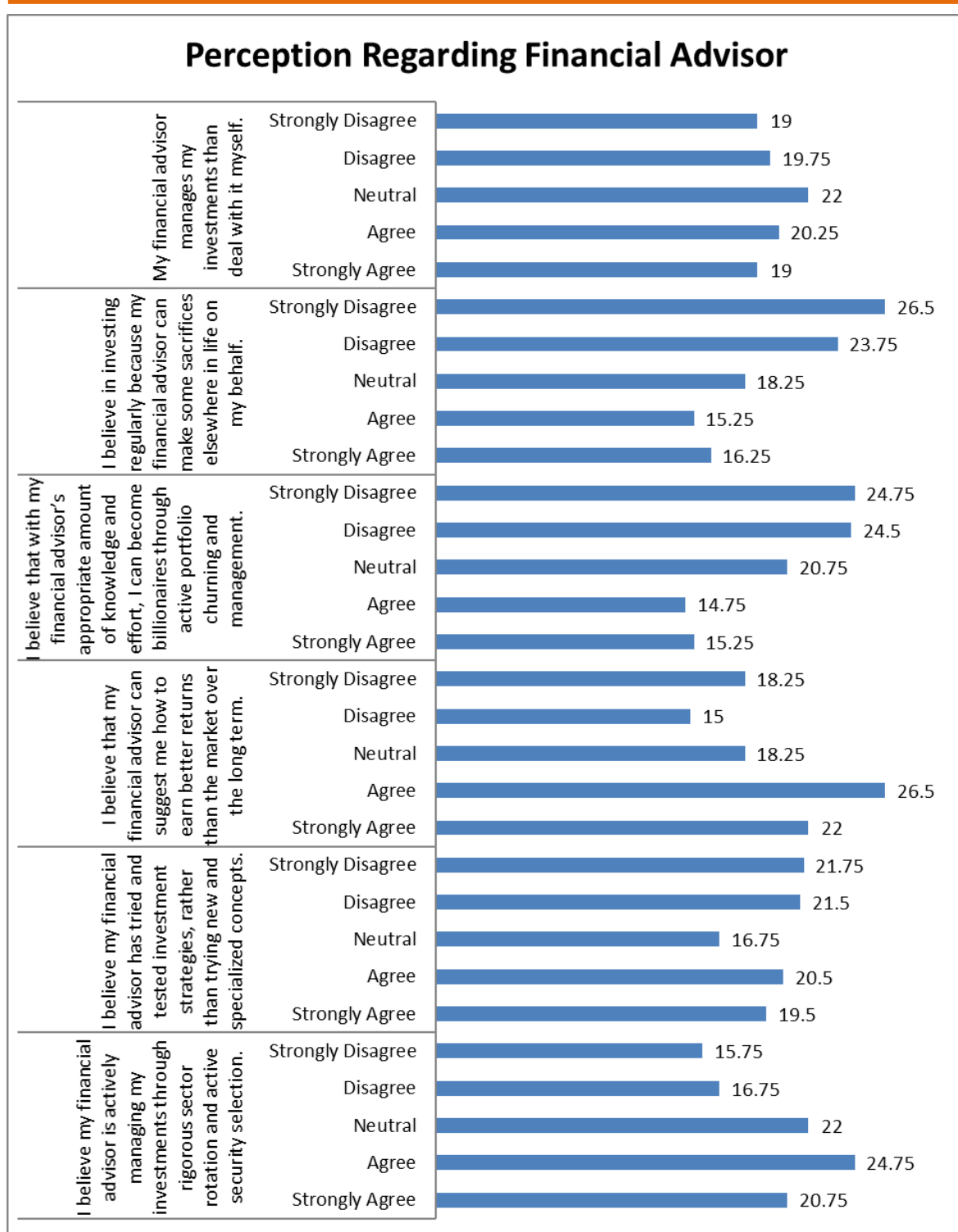


Figure 1: Role of Financial Advisor

The respondents were investigated on their perception of advisor's role played for undergoing a financial investment decision process. This question was used to examine the advisor's role in managing the investments, earning better returns and in getting appropriate knowledge. The graph above clearly depicts that majorly 26.5% people agree that their

financial advisor can suggest how to earn better returns than the market over the long term. But at the same time, 25 % respondents also strongly disagree that their financial advisor's have appropriate amount of knowledge and effort to turn them billionaires through active portfolio churning and management. This means that the respondents can get better returns than market with their advisor's knowledge and active management but that alone cannot make them billionaire. Further 25 % people agree that their financial advisor is actively managing their investments through rigorous sector rotation and active security selection. Additionally in regards to innovative investments, 22% people disagree that financial advisor tried and tested investment strategies, rather than trying new and specialized concepts. Also 24 % people disagree that they enjoy learning new things about investing due to their financial advisor. Moreover around 22 % people are neutral about the performance of their financial advisor's management of their investments. Overall it can be seen that there are mixed reviews on to the role played by the financial advisors in financial investment portfolio making process.

2.2.2 Other details on financial advisors

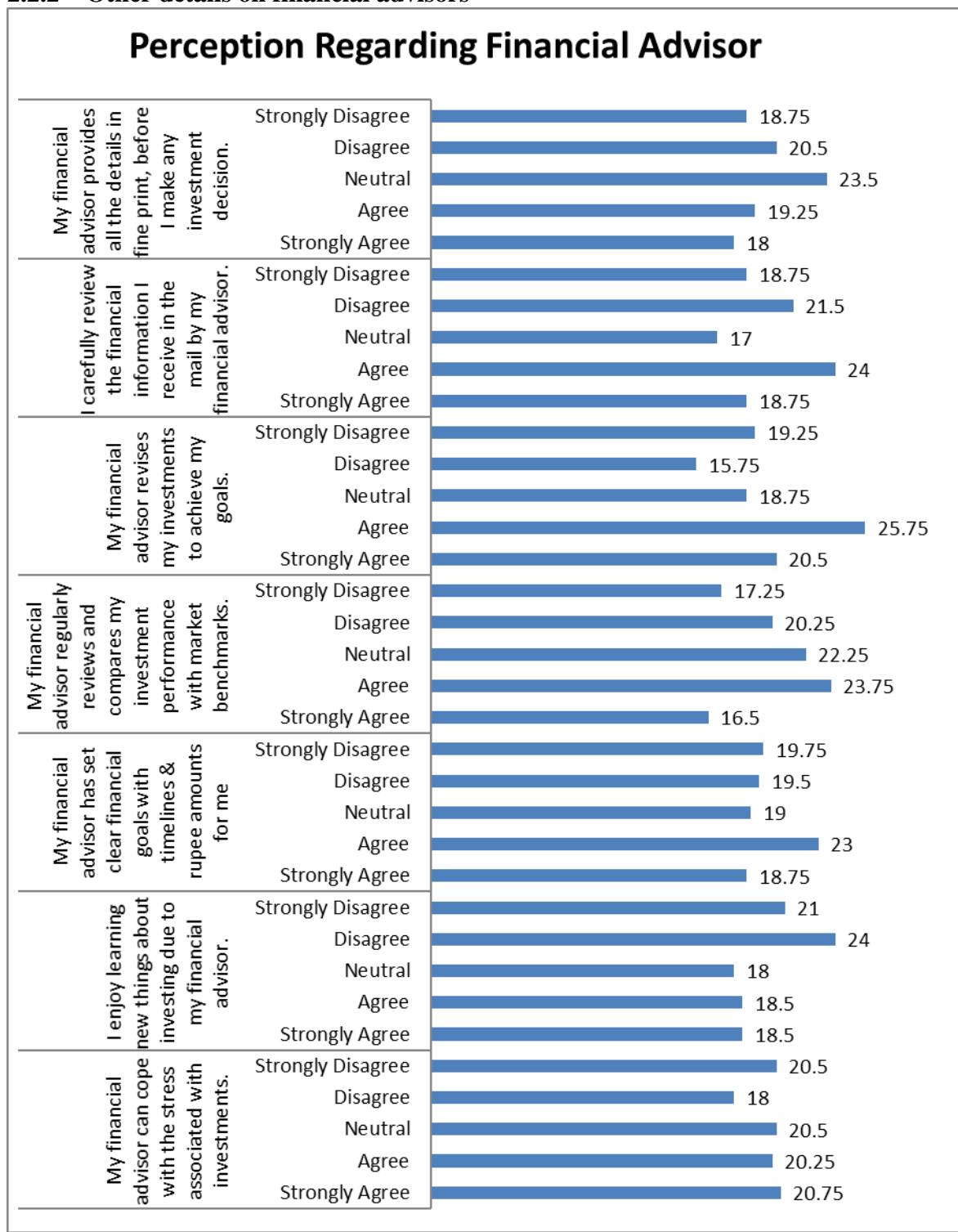


Figure 2: Perception on other details of financial advisors

Following this, the respondents were inquired about their perception regarding the financial advisor. The respondents were inquired about the stress associated with the investments, returns and security. It was revealed that majorly 21 % people strongly agree that their

advisor can cope with the stress associated with investments.23 % people agree that their financial advisor has set clear financial goals with timelines & rupee amounts for me.24 % people agree that their advisor regularly reviews and compares investment performance with market benchmarks. Also 26% people agree that their financial advisor revises their investments to achieve their goals.Further.24 % people agree that they carefully review the financial information they receive in their e- mail by their financial advisor however 23 % are neutral that financial advisor provides all the details in fine print, before they make any investment decision.

Overall these responses of investors about their advisor reflect that they seek much advice of their financial advisors while undergoing any investment decision. It is much asserted that the investors as well as their financial advisors are risk averse and avoid to experiment with new ideas. Also investors are not of the opinion that just their advisor's active management and intelligence can make them billionaire. Being billionaire just by the guidance of advisor is not a general phenomenon that happens with some but there are so many other factors associated with them. Ultimately it depends upon decisions taken on right time by individual whether on advisor's advice or himself, risk taking tendency and capacity of individual and also the innovative ideas in their minds. Most of the times the real productive innovation has made people billionaires not just the financial investments(Sukanya & Thimmarayappa, 2015).

2.2.3 Differences between groups of investors with regards to their duration in an investment across groups of investors' perception on their financial advisor.

The table below depicts an ANOVA analysis that depicts the presence of differences within the groups and across the groups within the dataset for two or more variables. In the present context the researcher used ANOVA for attaining insight on to the role played by financial advisors within a financial investment making process for investors.

The proposed hypothesis is as follows:

H0: There is no difference between groups of investors with regards to their duration in an investment across groups of investors' perception on their financial advisor.

H1: There is a difference between groups of investors with regards to their duration in an investment across groups of investors' perception on their financial advisor.

Table 1: ANOVA

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
I believe my financial advisor is actively managing my investments through rigorous sector rotation and active security selection.	Between Groups	18.775	4	4.694	3.287	.016
	Within Groups	99.972	70	1.428		
	Total	118.747	74			
I believe my financial advisor has tried and tested investment strategies, rather than trying new and specialized concepts.	Between Groups	8.565	4	2.141	.921	.457
	Within Groups	162.822	70	2.326		
	Total	171.387	74			
I believe that my financial advisor can suggest me how to earn better returns than the market over the long term.	Between Groups	9.025	4	2.256	1.028	.399
	Within Groups	153.562	70	2.194		
	Total	162.587	74			
	Between Groups	9.368	4	2.342	1.164	.334

I believe that with my financial advisor's appropriate amount of knowledge and effort, I can become billionaires through active portfolio churning and management.	Within Groups	140.819	70	2.012		
	Total	150.187	74			
	Between Groups	1.651	4	.413	.231	.920
I believe in investing regularly because my financial advisor can make some sacrifices elsewhere in life on my behalf.	Within Groups	124.829	70	1.783		
	Total	126.480	74			
	Between Groups	2.040	4	.510	.250	.909
My financial advisor manages my investments than deal with it myself.	Within Groups	142.840	70	2.041		
	Total	144.880	74			
	Between Groups	1.944	4	.486	.250	.909
My financial advisor can cope with the stress associated with investments.	Within Groups	135.976	70	1.943		
	Total	137.920	74			
	Between Groups	17.491	4	4.373	2.333	.064
I enjoy learning new things about investing due to my financial advisor.	Within Groups	131.176	70	1.874		
	Total	148.667	74			
	Between Groups	18.728	4	4.682	2.777	.033
My financial advisor has set clear financial goals with timelines & rupee amounts for me.	Within Groups	118.018	70	1.686		
	Total	136.747	74			
	Between Groups	3.186	4	.797	.417	.796
My financial advisor regularly reviews and compares my investment performance with market benchmarks.	Within Groups	133.694	70	1.910		
	Total	136.880	74			
	Between Groups	8.179	4	2.045	1.020	.403
My financial advisor revises my investments to achieve my goals.	Within Groups	140.301	70	2.004		
	Total	148.480	74			
	Between Groups	5.741	4	1.435	.794	.533
I carefully review the financial information I receive in the mail by my financial advisor.	Within Groups	126.606	70	1.809		
	Total	132.347	74			
	Between Groups	.000	4	.000	.	.
My financial advisor provides all the details in fine print, before I make any investment decision.	Within Groups	.000	70	.000		
	Total	.000	74			

The table above presents that the p –value is less than 0.5 for two variables: ‘I believe my financial advisor is actively managing my investments through rigorous sector rotation and active security selection’ and ‘My financial advisor has set clear financial goals with timelines & rupee amounts for me’. This indicates that the null hypothesis stating that ‘*There*

is no difference between groups of investors with regards to their duration in an investment across groups of investors' perception on their financial advisor.' is rejected since there are significance reflected within few variables.

It is analyzed that the investor's time involved in investment portfolio is much influenced with the role of financial advisor. There is a difference between the groups as well as across the groups. Therefore this explains that there is a much influencing impact of financial advisor's perception on the investor's decision to be involved with the related investment portfolio.

2.3 Summary

The present chapter of the study depicts the investor's perception regarding their financial advisors with in the financial investment decision process. The researcher conducted a frequency analysis among 400 respondents from Haryana region to assess their perception. The bar plot was used to view the same for better interpretation among readers. It was depicted that the investors do seek the advices of their financial advisor hugely. Moreover it was reflected that the involvement in financial investment decision making process is much influenced by the perceptions of financial advisors. This chapter clearly acknowledged that the financial advisors well maintained the investor's portfolio and offered much insight on the same to their investors. Thus the expertise of financial advisors is seen to be essential within this context and should be much paid attention.

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