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'Marian Quest' encapsulates our commitment to Quality, Understanding, Excellence, Success, and Training.. With a streamlined submission process and swift publication, our aim is to disseminate a wide spectrum of research articles brimming with innovative information. We proudly offer researchers, educators, and students an authentic platform to showcase high-caliber research across the realms of science and arts. 'Marian Quest' is a repository of research ideas that exudes excellence, making it a dependable resource for researchers, policymakers, and the wider public.

Our editorial board members and external reviewers, distinguished experts in their respective fields, are dedicated to maintaining an unbiased, efficient peer review process. Notably, we take pride in minimizing the time between submission and final publication, thus facilitating authors' journey towards sharing their work with the world. Our overarching mission is to dismantle barriers to scholarly publishing and simplify the experience for authors.

We extend our heartfelt gratitude to the members of the Marian Research Forum, reviewers, authors, our esteemed Principal, the Secretary, and the team of experts whose unwavering support, diligent efforts, and boundless encouragement have paved the way for this Journal's publication. We hold unwavering confidence that the journal will remain a vital conduit for the scientific discourse of St. Mary's College (Autonomous), Thoothukudi. Best wishes,

The Editors

Marin Quest, Marian Research Forum

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Marian Quest the Bi-annual Multidisciplinary Research Journal of St. Mary's College (Autonomous), Thoothukudi, publishes articles of high reputation and innovation. The articles intended for publication must be typed in A4 size format, 1.5 line space and Times New Roman Font 12. Tamil papers should be in Bamini Font. The latest writing manual for MLA Hand book should be followed in Literature articles. Footnotes, References, Citation Marks should also be included in the research paper.

For reviewing and correction purpose, kindly send one hard copy with the soft copy. Full paper generally consists of the title, pictures, charts, graphs etc., along with Footnotes.

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Title : It should be short & informative

Keywords : Five or six keywords indicating the contents of the manuscript.

Address of Authors : It includes author's name, institution name, telephone number (office only), and e-mail address. Author for correspondence should be indicated with an asterisk (*).

Main Heading : Each article should be divided into the following main headings: Abstract, Introduction, Materials and Methods, Results and Discussion, Conclusion, Acknowledgement and References.

All articles are, as a rule, referred to experts in the subject concerned. Those recommended by the referees alone will be published in the journal.



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BIO-SYNTHESIS AND CHARACTERIZATION OF TELLURIUM DIOXIDE NANOPARTICLES USING *TEPHROSIA PURPUREA* AND ITS BIO-POTENTIALS

N. Amala Jothi Nirosha¹, J. Antony Rajam^{2*}

PG Department of Chemistry, St. Mary's College (Autonomous), Thoothukudi
Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT

Nanoparticle synthesis using plant is an alternative to conventional physical and chemical methods. In this study, we used a simple green method for preparing tellurium nanoparticles using leaf extract of *Tephrosiapurpurea*. Tellurium nanoparticles were rapidly synthesized by the reduction of potassium tellurite anhydrous solution with plant extract as a reducing agent. The synthesized Tellurium nanoparticles were characterized with different instrumental methods such as UV, FT-IR, SEM, XRD and EDAX. The powdered Tellurium Nanoparticles were applied for antimicrobial, antioxidant and anticorrosion studies. The plant mediated nanoparticles synthesis is rapid, simple, cost effective and safe method with various applications.

Keywords: *Tephrosiapurpurea*, Tellurium Nanoparticles, Ultra violet visible, Fourier Transform Infrared Spectroscopy, Scanning Electron Microscopy, X-ray diffraction, Energy-dispersive Xray analysis

1. INTRODUCTION

Green chemistry is the utilization of set of principles that reduces or eliminates the use or generation of hazardous substances in the design, manufacture and application of chemical products. Green synthesis describes the techniques to eliminate them. Green chemistry is about waste minimization of source use of renewable sources using non-toxic reagents improved atom efficiency green synthesis are required to avoid production of unwanted or harmful bi-products through the buildup of reliable, sustainable and ecofriendly synthesis procedures. The use of ideal solvent system and natural resources (such as organic systems) is essential to achieve this goal. The biosynthesis of nanoparticles has been proposed as a cost effective and environmentally friendly alternative to physical and chemical methods.

Examples of green chemistry include manufacture of ammonia manufacture of methanol, manufacture of ethene. Some reactions include water as a solvent for

example in the manufacture of inorganic compounds such as hydrogen peroxide phosphoric acid.

Green synthesis of nanomaterials has many methods namely physical method, chemical method, green method. Physical method is time and energy consuming, and it is synthesized at high temperature and pressure. Chemical method is simple, inexpensive and low temperature is required. Green method is easy, efficient and eco-friendly [1].

1.1. ADVANTAGES AND DISADVANTAGES:

The advantages of green synthesis include that they are environmentally friendly, easily scaled up for large synthesis of nanoparticles. They don't need any temperature, pressure energy and toxic chemicals. It reduces cost of microorganism isolation and their culture media. The disadvantage is that plants cannot be manipulated as the choice of nanoparticles through optimized synthesis of genetic engineering. Another one is that plants produce low yield of secreted proteins which decrease the synthesis rate [2].

1.2. NANO SCIENCE:

The word **Nano science** refers to the study, manipulation and engineering of matter, particles and structures on the nanometer scale (one millionth of a millimeter, the scale of atoms and molecules). Important properties of materials. Such as the electrical, optical, thermal and mechanical properties, are determined by the way molecules and atoms assemble on the nanoscale into larger structures. Moreover, in nanometer size structures these properties often differ then on macro scale, because quantum mechanical effects become important. [3]

1.3. NANOTECHNOLOGY:

Nanotechnology is a branch of science which deals with matter having at least One dimension sized from 1-100 nm. Nanoparticles have attracted great interest Recently due to their unique physical and chemical properties, which are different from those of either the bulk materials or single atoms. The field of nanotechnology is one of the most active researches in modern material science. Nanotechnology is emerging as a rapid growing field with its applications in science and technology for the purpose of manufacturing new materials at the nano scale level. The nanoparticles possess unique physiochemical, optical and biological properties which can be manipulated suitably for desired applications. The nanoparticles are of great interest due to their externally small size and large surface to volume ratio, and they exhibited utterly novel

characteristics compared to the large particles of bulk material. Moreover, the nanoparticles are more various in shape and size in comparison with those produced by other organisms. Synthesis of nanoparticles can be performed using a number of routinely used chemical and physical methods. The use of plant systems has been considered a green route and a reliable method for the biosynthesis of nanoparticles owing to its environmentally friendly nature [4].

2. MATERIALS AND METHODS BIOSYNTHESIS OF TELLURIUM NANOPARTICLES

2.1. Collection of the plant

Tephrosiapurpurea plant was collected from our college garden in the month of December. The leaves were separated from the plant. The separated leaves were washed with distilled water and wiped to use.

2.2. Preparation of leaf extract

The cleaned leaves were chopped and ground to paste without adding water. About 20 g of leaf paste was taken in 250 mL conical flask and add 100 mL of distilled water. The mixture was kept in the ultrasonicator and heated for 30 minutes at 70°C.

2.3. Synthesis of tellurium oxide nanoparticles



Fig. 2.1 synthesis of tellurium oxide

3 gram of anhydrous potassium tellurite was dissolved in 50 mL of water. 20 mL of *Tephrosia purpurea* leaf extract is taken in 100 ml beaker. To this extract, the potassium tellurite solution was added. The mixture was ultra-sonicated for 50 minutes. The light green colour of the solution turned to black. The solution was kept in hot plate for an hour and muffle furnace at 70°C for about 12 hours.

3. RESULTS AND DISCUSSION:

3.1 SOLUBILITY TEST

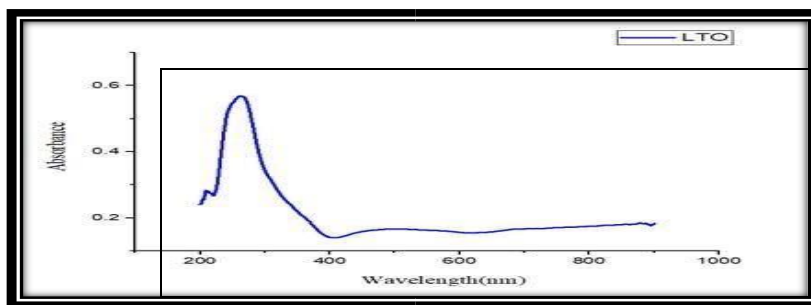
A few milligrams of substance are taken in a test tube and 1 mL of solvent was added. it was Shaken well and check for solubility.

Table 3.1. Solubility of TeNps

Solvents used	Solubility
Dil. HCl	Insoluble
Con HCl	Soluble
Con H ₂ SO ₄	Insoluble
NaOH	Insoluble
Ethanol	Soluble
Benzene	Soluble
Acetone	Insoluble
Hot water	Partially soluble

3.2 UV Analysis

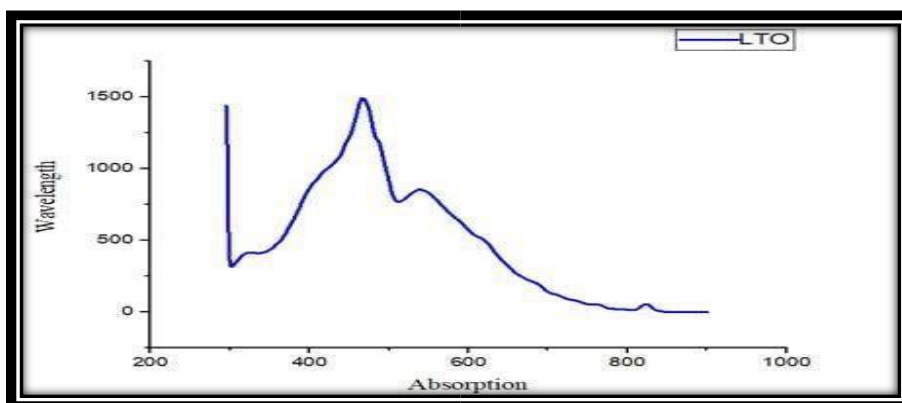
The UV visible spectrum of bio - synthesized TeO₂(LTO) nanoparticles using *Teppuriapurpurea* leaf extract was shown fig. 5.1. An adsorption band in region 200 – 900 nm is observed. The absorption bands were observed at 208 and 265 for LTO. The blue shift is to the small size of nanoparticles. The indicates the formation of smaller particles.



3.1 UV-Visible spectrum of TeO

3.3 UV – Visible Fluorescence Spectroscopy

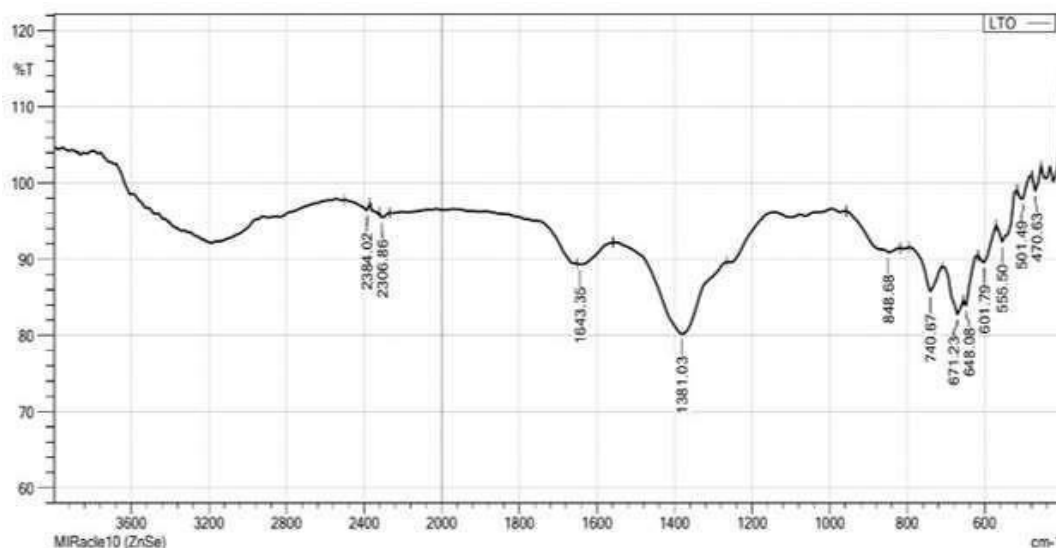
The fluorescence graph for synthesis tellurium nanoparticles recorded between the range excited at 200 – 900 nm. Solid sample emission band at with high intensity, form the emission spectra studies the sample LTO has high intensity.



3.2 UV – Visible Fluorescence Spectroscopy of TeO₂

3.4 FT-IR studies

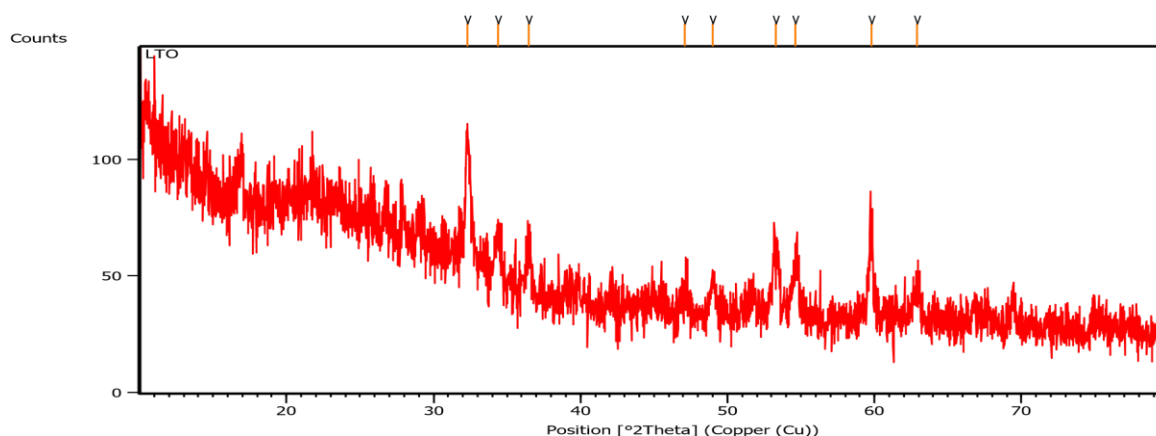
The stretching frequency involved in LTO Nanoparticles were detected by FT-IR Analysis. The IR spectra of the sample were recorded in the range 400-3800 cm^{-1} . The stretching of the peaks at 455.20 cm^{-1} , 424.34 cm^{-1} could be designed Te-O-Te Strechting. 509.21 cm^{-1} , 547.78 cm^{-1} , 586.36 cm^{-1} could be designed LTO bending.



3.3. FT-IR data of TeO₂ nanoparticles

3.5 XRD Calculation

XRD diffraction with 2θ range of $20 - 70^\circ$ of TeO_2 nanoparticles is using Cu ka 1 ($1.540598 \text{ \AA}$) radiation. The 2θ formed are 32.30° , 34.37° , 47.10° . Based on the Goniometer and diffractometer system Orthorhombic Tellurium based on JCPDS Card No.2106368 regarding hkl (110), (021), (200), (112). the result in that the TeO_2 exhibits a crystalline nature. The crystal phase of this type of Tellurium Orthorhombic with a lattice parameter of a-axis $5.79800 \text{ \AA}$, b-axis $12.2400 \text{ \AA}$ and c-axis $5.21400 \text{ \AA}$ respectively. In the high temperature influence the crystallinity and structural phase of the material.



3.4 XRD spectrum of Tellurium dioxide nanoparticles synthesized using *Tephrosiapurpurea* leaf extract

The lattice value, $a = \lambda / 2 \sqrt{k}$

$$a = 5.6743 \text{ \AA}$$

The calculated lattice value (a) for the synthesized nanoparticle was found to be 5.6743

Å.

3.6 SCANNING ELECTRON MICROSCOPY (SEM)

The morphology and size distribution of the biosynthesized LTO Nanoparticles can be studied by the field emission scanning microscopy (FE-SEM). the average particle size ranges from 5 μm – 500 nm the figure a, b, c, d, shows the difference magnification.

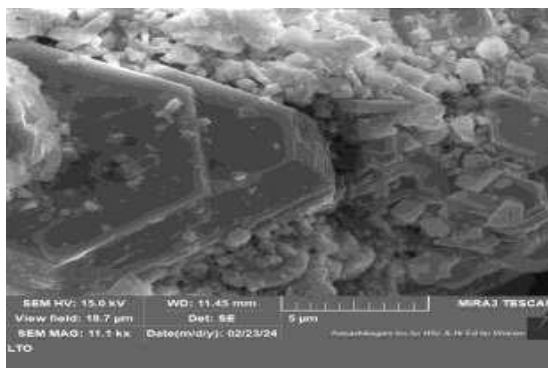


Fig (a)

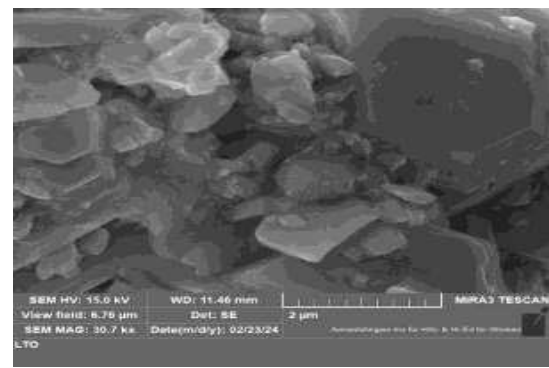


Fig (b)

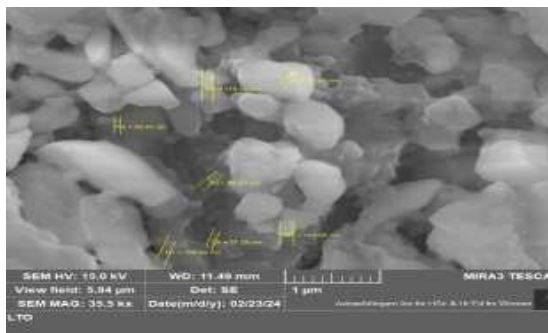


Fig (c)

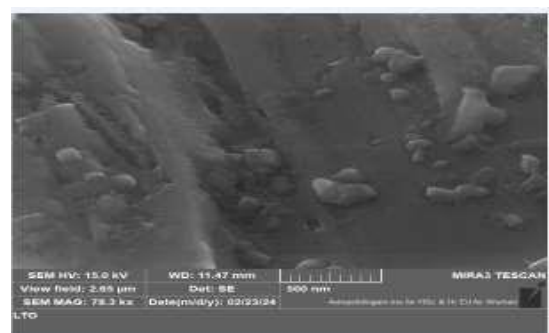
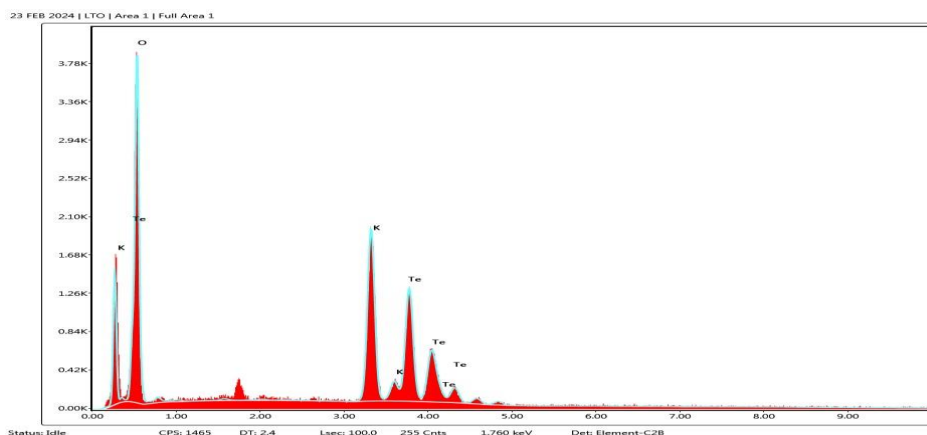


Fig (d)

Fig. 3.1 SEM images of TeNPs in different magnification a) 5 μm b) 2 μm , c) 1 μm d) 500 nm.

3.7 ENERGY DISPERSIVE X- RAY ANALYSIS (EDAX)

The composition of Te and K synthesized sample is given by energy dispersive X -ray Spectroscopy (EDAX) . The results clearly indicate the presence of the elements Te and K as the respective peaks are clearly visible.



3.5. EDAX spectrum of LTO

4.APPLICATIONS 4.1.ANTIOXIDANT ACTIVITY

4.1.1. Phosphomolybdenum assay

For the conduction of the phosphomolybdenum assay, the method of Prieto *et al.*, was followed. Briefly, Tellurium nanoparticles were prepared at the concentrations of 200 to 600 µg/ml in ethanol. Then these Tellurium nanoparticles solution of different concentrations

(200 - 600 µg/ml) treated with 1 ml of reagent solution (0.6 M sulfuric acid, 28 mM sodium phosphate and 4 mM ammonium molybdate). The tubes were incubated at 95°C in a water bath for 90 min. The samples were cooled to room temperature and their absorbance was recorded at 695 nm against a reagent blank. Ascorbic acid was used as standard. Antioxidant capacity was estimated by using following equation:

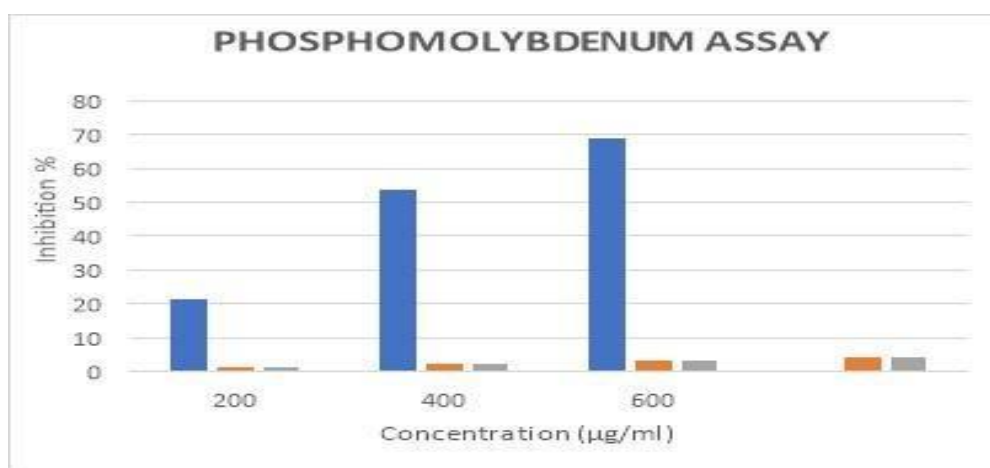
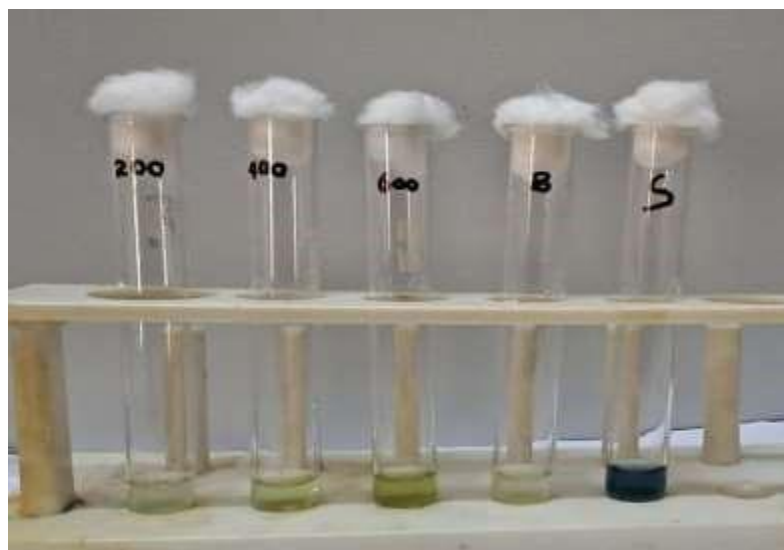
$$\text{Antioxidant activity}\% = \frac{[(\text{Absorbance control} - \text{Absorbance sample})]}{\text{Absorbance control}} \times 100$$

Table: 4.1. Phosphomolybdenum assay of Tellurium nanoparticles

Medium	Concentration (µg/ml)	OD @ 695nm
Ascorbic acid (standard)	600	0.574
Tellurium nanoparticles	200	0.249
	400	0.146
	600	0.098
Control / Blank	-	0.316

Table: 4.2. Percentage of inhibition

Concentration ($\mu\text{g/ml}$)	Percentage of inhibition
200	21.20%
400	53.79%
600	68.98%

**Fig. 4.1 Plot of Inhibition % vs Concentration for Phosphomolybdenum assay****Fig. 4.1. Phosphomolybdenum assay of Tellurium nanoparticles****4.1.2. Hydrogen Peroxide Scavenging Assay:**

The ability of the extract to scavenge hydrogen peroxide (H₂O₂) was determined according to the method of Ruch *et al.*, Briefly, Tellurium nanoparticles samples were prepared at the concentrations of 200 to 600 µg/ml in ethanol. Then these Tellurium nanoparticles solution of different concentrations (200 - 600 µg/ml) was transferred into the test tubes and their volume was made up to 0.4 ml with 50 mM phosphate buffer (pH 7.4) followed by the addition of 0.6 ml of H₂O₂ solution (2 mM). The absorbance was measured at 230 nm in the UV spectrophotometer against a blank after 10 minutes of incubation at 37°C. Ascorbic acid was used as standard. The ability of the extracts to scavenge the H₂O₂ was calculated using the following equation: [56]

$$\text{Antioxidant activity}\% = \frac{[(\text{Absorbance control} - \text{Absorbance sample})]}{\text{Absorbance control}} \times 10$$

Table: 4.3. Hydrogen peroxide scavenging assay of Tellurium nanoparticles

Medium	Concentration (µg/ml)	OD @ 230nm
Ascorbic acid (standard)	600	0.355
Tellurium nanoparticles	200	0.226
	400	0.204
	600	0.155
Control / Blank	-	0.329

Table: 4.4. Percentage of inhibition

Concentration (µg/ml)	Percentage of inhibition
200	31.31 %
400	37.99 %
600	52.89 %

Fig. 4.2 Plot of Inhibition % vs Concentration for hydrogen peroxide assay

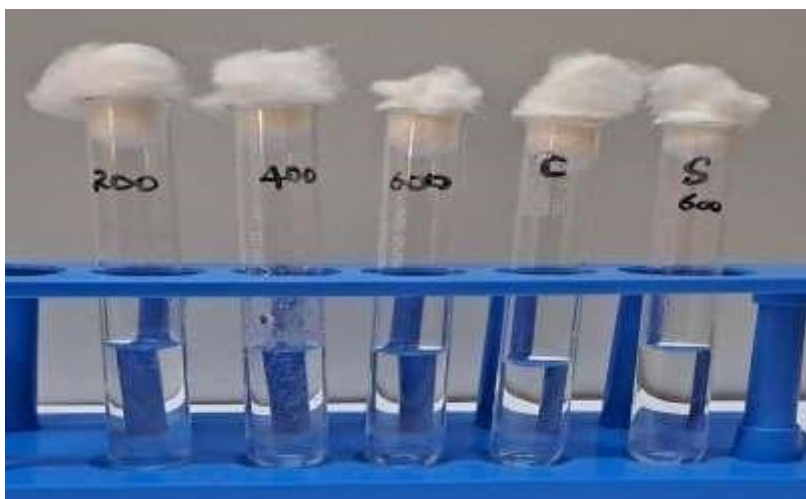
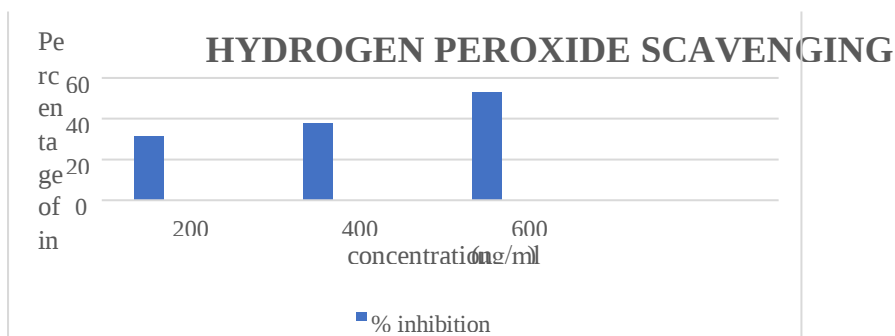


Fig. 4.2. Hydrogen peroxide scavenging assay of Tellurium nanoparticles

4.2. ANTIBACTERIAL ACTIVITY

4.2.1. Microbial strains used

Four bacterial strains namely *Escherichia coli*, *Staphylococcus aureus*, *Vibrio cholerae* and *Pseudomonas aeruginosa* were used for antimicrobial activity.

4.2.2. Inoculum preparation for bacteria

Nutrient broth was prepared and sterilized in an autoclave at 15 lbs pressure for 15 minutes. All the four bacterial strains were individually inoculated in the sterilized marine broth and incubated at 37°C for 24 hours. The 24 hours old bacterial broth cultures *Escherichia coli*, *Staphylococcus aureus*, *Vibrio cholerae* and *Pseudomonas aeruginosa* were inoculated in the petri dishes using a sterile cotton swab.

4.2.3. Antibacterial activity assay

The antibacterial activity assay was carried out by disc diffusion method (Kirby & Bauer, 1966). Mueller hint on agar was prepared and poured in sterile petri plates. Bacterial culture was inoculated on the surface of Mueller hint on agar plates. The inoculated plates were allowed to dry for five minutes. Briefly, Tellurium nanoparticles were prepared at the concentration of 1000 µg/ml in ethanol. Sterilized paper disc prepared from Whatmann No.1 paper disc with 6mm diameter were loaded with Tellurium nanoparticles concentration of 1000 µg/ml and placed on the surface of inoculated petri plates along with control- streptomycin using sterile technique. The plate was incubated at 37°C for 18-24 hours. The plate was examined for inhibitory zone, the inhibition zones were measured with the outer side of the disc to inner side of the inhibition zone and the zone of inhibition was measured in mm.

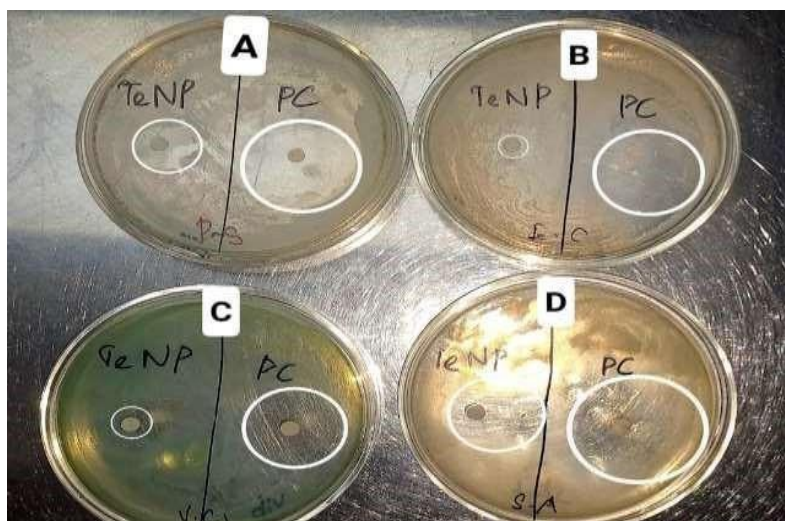


Fig. 4.3. Antibacterial activity on A) *Pseudomonas aeruginosa* B) *Escherichia coli* C) *Vibrio cholerae* D) *Staphylococcus aureus*

Table: 4.5 Study of Antibacterial activity

Bacterial strains	Zone of inhibition (mm)	
	Nanoparticles	Positive controlStreptomycin (PC)
<i>Pseudomonas aeruginosa</i>	11 mm	20 mm
<i>Escherichia coli</i>	2 mm	18 mm
<i>Vibrio cholerae</i>	8 mm	16 mm

<i>Staphylococcus aureus</i>	17 mm	23 mm
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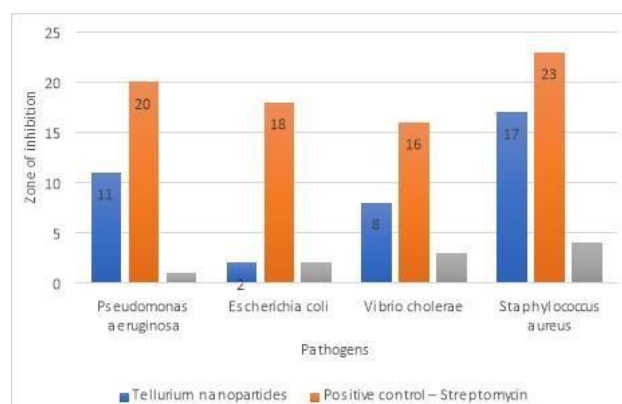


Fig. 4.3. Antibacterial activity of Tellurium Nanoparticles

4.3. Anticorrosion activity

The anticorrosion activity of synthesized TeNps is high in basic medium. On the other hand, in acidic and neutral conditions, the corrosion rate is high in the presence of TeNps. **Table 4.6. Anti corrosion activity for nano particles**

Medium	Weight of inhibitor (g)	Weight of plate, g		Weight loss g	% of Corrosion rate g/cm h
		Before immersion	After immersion		
Acidic buffer	-	0.7989	0.7986	0.0003	0.04
	0.1	0.7131	0.7123	0.0008	0.11
Basic buffer	-	0.8664	0.8653	0.0011	1.27
	0.1	0.6724	0.6679	0.0045	0.67
Sea water	-	0.7743	0.7735	0.0008	0.10
	0.1	0.6182	0.6165	0.0017	0.27

5. CONCLUSION

Tellurium dioxide nano particles were synthesized by green method using leaf extract of *Tephrosiapurpurea*. The prepared TeO₂ nanoparticles were characterized using several techniques such as UV-Visible, FT-IR, SEM, EDAX and XRD. And the anti-corrosion, antimicrobial and anti-oxidant activities were studied.

- The UV-visible absorption peak occurs at 356 nm. This confirms that the synthesized nanoparticles are TeO₂.
- The band gap energy is 3.4827 eV and hence it behaves as semi-conductor.
- The FT-IR studies showed an absorption spectrum of Te-O-Te at 871 and O-Te-O peak at 648.08cm⁻¹·601.79⁻¹ 555.50⁻¹ and 470.63⁻¹ which indicates the formation of Tellurium dioxide nanoparticles.
- XRD behaviour exhibits the size of Tellurium dioxide nanoparticles. The crystallite size was found to be 17 nm for TeO₂ nanoparticles. The presence of several sharp peaks indicates the random orientation of crystalline nature, confirming face centered cubic structure of TeO₂ nanoparticles.
- The surface morphology of TeO₂ nanoparticles was characterized by SEM. The SEM images of different magnification show the flakes shape structure.
- The Energy Dispersive X-ray analysis showed the presence and distrains of Titanium and Oxygen elements in the synthesized TeO₂ nanoparticles.
- The Anti-corrosion activity on mild steel was carriedout, in basic medium.
- The Antioxidant study shows the fluctuation in percentage of antioxidant activity as the concentration varies. The maximum percentage of antioxidant activity of about 0.249% was seen for the 200 µg/mL.
- The Antibacterial activity explains clearly that the prepared sample has zone inhibition with 4 pathogens namelyA) *Pseudomonas aeruginosa* B) *Escherichia coli* C) *Vibrio cholerae*D) *Staphylococcus*

6. REFERENCE

- [1] Muralidharan V.S, A. Subramania, Nanoscience and technology, Cre Press, New Delhi, **2009**.
- [2] Raheman F, et al., “Silver nano particles: Novel antimicrobial agent synthesized from a endo phytic fungus Pestalotia sp. Isolated from leaves of Syzygiumcumini” (L.) **2011**.
- [3] Rai MK, Deshmukh SD, Ingle AP, Gade AK “Silver nanoparticles: the Powerful nano weapon against multidrug-resistant bacteria” **2012**
- [4] Morones JR, et al., “The bactericidal effect of silver nanoparticles”. **2005**
- [5] Gao L, et al., “Drug nano crystals for the formulation of poorly soluble drugs and its application as a potential drug delivery system” **2008**.

- [6] Thanh NT, et al., “Development of an aggregation-based immunoassay for antiprotein A using gold nanoparticles. (2002). PR Drug delivery systems: entering the mainstream” **2004**.
- [7] Sankar S, et al., “Microbial synthesis and characterization of severe the benign synthesis. Global Journal of Medical Research nanoparticles using the endophytic bacterium *Bacillus cereus*: a novel source” **2012**.
- [8] Slawson RM, et al., “Silver resistance in *Pseudomonas stutzeri*”, **1994**
- [9] Kumar D, et al., “Biosynthesis of Silver nano particles from marine yeast and their antimicrobial activity against multidrug resistant pathogens”. *Pharmacology***2011**.
- [10] Dameron CT, Reese, R.N; Mehra R.K; Kortan, A.R; Carroll, P.J; Steigerwald, M.L; BrusL.E; Winge, D.R “Biosynthesis of Cd sulphide quantum semiconductor crystallites Nature” **1989**.
- [11] Gade AK, Bonde P, Ingle AP, Marcato PD, Durán N, et al. “Exploitation of *Aspergillus niger* for synthesis of silver nanoparticles”. *Journal of Bio based Materials* **2008**.
- [12] Ingle A, Rai M, Gade A, Bawaskar M *Fusarium solani*. “A novel biological agent for the extracellular synthesis of silver nanoparticles”. **2009**.
- [13] Binu Priya AR, et al., “SI Myco-crystallization of silver ions to nanosized particles by live and dead cell filtrates of *Aspergillus Oryza* Var *viridis* and its bactericidal activity toward *Staphylococcus*” **2010**.
- [14] Nithya R, et al., “Synthesis of silver nanoparticles using *Pleurotus sajorajua* and its antimicrobial study”. *Digest Journal of Nanomaterials and Bio structure* **2009**.
- [15] Thakkar KN, et al., “Biological synthesis of metallic nanoparticles” **2010**.
- [16] Ahmad A, et al., “Extracellular biosynthesis of silver nanoparticles using the fungus *Fusarium oxysporum* Colloids” **2003**
- [17] Birla SS, Tiwari VV. Gade AK, Ingle AP. Yaitus AP et al Fabrication JNMNE, An open access Journal of ser mop articles by *Phanaglomerata* and its combined effect with *Escherichia Coli*, *Pseudomonas aeruginosa* and *Staphylococcus aureus*, **2009**.

- [18] Shankar SS, et al., “Biosynthesis of silver and gold nanoparticles from extracts of different parts of the Geranium plant”. *Applications in Nanotechnology* **2004**.
- [19] Chandran SP, et al., “Synthesis of gold nano triangles and silver nanoparticles using Aloe vera plant extract *Biotechnology*”, **2006**.
- [20] Huang J, et al., “Biosynthesis of silver and gold nanoparticles by novel sundried *Cinnamomum camphor* a leaf”, **2007**.
- [21] Shankar SS, et al., “Rapid synthesis of Au, Ag, and bimetallic Au core-Ag shell nanoparticles using Neem (*Azadirachta indica*) leaf broth”,**2004**.
- [22] Patil CD, et al., “Larvicidal activity of silver nanoparticles synthesized using *Plumeria rubra* plant latex against *Aedes aegypti* and *Anopheles*” **2012**.
- [23] Singh AK, Talat M, Singh DP, Srivastava ON (Biosynthesis of gold and silver nanoparticles by natural precursor clove and their functionalization with [27] Christensen L. Vivekanandhan S. Misra M. Mohanty A Biosynthesis of silver amine, **2010**.
- [24] Prathyushakantheti Padma alapathi, “Green synthesis of TiO₂ nanoparticles Using *Osmium basilicum* extract and its characterization”, **2018**.
- [25] MMK Peiris¹, et al., “TiO₂ Nanoparticles from Baker's Yeast: A Potent Antimicrobial” <https://doi.org/10.4014/jmb.1807.07005>, **2018**.

ECO FRIENDLY SYNTHESIS AND CHARACTERIZATION OF MESOPOROUS SILICA NANOPARTICLES FROM HUSK OF ZEA MAYS WASTE

J. Arockiya Mashina¹, D.Carolin Jeniba Rachel^{2*}

PG Department of Chemistry, St. Mary's College (Autonomous), Thoothukudi
Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT

This study presents a sustainable and eco-friendly method for the synthesis of mesoporous silica nanoparticles (MSNs) utilizing Zea Mays waste, an abundant agricultural byproduct. The synthesis process involves the extraction of silica from Zea Mays waste followed by a sol-gel approach to fabricate MSNs. Characterization of the synthesized MSNs was performed using various techniques including UV visible spectroscopy, scanning electron microscopy (SEM), Fourier-transform infrared spectroscopy (FTIR), (X-ray diffraction) XRD analysis, Energydispersive X-ray analysis (EDAX), Antibacterial Activity. The results demonstrate the successful formation of MSNs with well-defined mesoporous structures and high surface areas. The potential applications of these MSNs in drug delivery, catalysis, and environmental remediation are discussed. Moreover, the utilization of Zea Mays waste as a precursor for MSN synthesis highlights the importance of sustainable practices in nanomaterial production. This approach not only offers a solution for waste valorization but also contributes to the development of green and sustainable nanotechnologies.,

Keywords: Mesoporous Silica nanoparticles, *Zea Mays* waste, Antibacterial activity.

1. INTRODUCTION

Good control of the morphology, particle size, uniformity and disparity of mesoporous silica nanoparticles (MSNs) is of increasing importance to their use in catalyst, adsorption, polymer filler, optical devices, bio-imaging, drug delivery, and biomedical applications. This review discusses different synthesis methodologies to prepare well-dispersed MSNs and hollow silica nanoparticles (HSNs) with tunable dimensions ranging from a few to hundreds of nanometers of different meso structures. The methods include fast self-assembly, soft and hard

templating, a modified Stöber method, dissolving– reconstruction and modified aerogel approaches. In practical applications, the MSNs prepared by these methods demonstrate good potential for use in high-performance catalysis, antireflection coating, transparent polymer–MSNs Nan composites, and drug-release and theranostic systems. [1]In addition to their biocompatibility, key advantages of MSNs are associated with their high surface area and facile surface tenability. Often described as “nano sponges” MSNs can adsorb large amounts of molecules dissolved in solution thanks to this high surface area; on fact 0.5 grams of mesoporous silica nanoparticles possess the same area as an American football field. This highly ordered porosity can be controlled during the synthesis of MSNs. [2]Thanks to the versatility of the silica, it's possible to modify the surfaces of MSNs with specific functional groups that will interact selectively with certain categories of molecules. One can imagine coating the pores with a positive surface in order to attract negatively charged molecules, or using a hydrophobic surface to attract more hydrophobic molecules. The figure below shows an MSN in which the pores are modified to allow molecules with a specific surface functionality (represented as green circles) to adsorb inside the particles, whereas others (red pentagons) are excluded. This type of selective adsorption has numerous uses in drug encapsulation, environmental chemical removal, and various other applications. [3]. The organizational structure of the pores can also be modulated (MCM-41, MCM-48, radial, cubic, wormlike, etc.), as represented in the following figure. The use of one type over the others will depend on the application, as the pore structure controls the release/leakage of molecules loaded inside the pores.

For example, MSNs with the hexagonal pore arrangement can release cargo from both ends of a specific channel whereas in the cubic arrangement, molecules can travel freely inside the intricate network and be released from any pore outlet. In the radial pore arrangement, the molecule can only access a single pore and thus must exit through the pore it entered, making this particular system less prone to premature leaking (in the case of drug encapsulation). [4]Compared to the synthesis of regular silica nanoparticles that generally follow the Stöber process, MSNs are synthesized in a water-based solution in the presence of a base catalyst and a pore forming agent more widely known as a surfactant. Surfactants are molecules the present the particularity to have a hydrophobic tail (alkyl chain) and a hydrophilic head (charged

group, such as a quaternary amine for example). As these surfactants are added to a water-based solution, they will coordinate to form micelles with increasing concentration in order to stabilize the hydrophobic tails as own below. During the early stage of the hydrolysis and condensation of the silica precursor, oligomeric forms of silica appear. Like the final material, these oligomers possess silanol groups (Si-OH) that are deprotonated under the basic conditions of the reaction, forming negatively charged oligomers that can in turn condense on the surface of the positively charged micelles. As the reaction proceeds, the oligomers grow larger around the micelles ultimately forming a hybrid organic/inorganic silica network templated by surfactant molecules. After the reaction, the removal of the template will create the porosity that defines mesoporous silica nanoparticles. [5]

2. MATERIALS AND METHODS

MATERIALS

- Sweet corn husk
- NaOH (LR grade purchased from ISOCHEM).
- HCl (LR grade purchased from ISOCHEM).
- Silica Crucible

METHODS

Preparation of Mesoporous Silica Nanoparticles Sweet Corn Husk

Husk of *Zea mays* Convar is collected washed well with distilled water and dried at 100°C in hot air oven. The dried sample is allowed to cool and crushed into small pieces. The crushed Husk of *Zea mays* Convar is combusted for approximately eight hours at a temperature of roughly 600 °C. After that, it is purified with con. HCl, thoroughly cleaned to get rid of any surplus acid, dried in a hot air oven for about two hours and chilled. Using a mortal pestle, the sample is now thoroughly crushed into finer particles. It was named as SC-H.[6]

3. RESULTS AND DISCUSSION

3.1 UV-Analysis

The UV-Visible spectra for SC-H are observed in the 200-900 nm region. The particle exhibits three absorption peaks at 287nm, 364nm, for SC-H The synthesized mesoporous silica nanoparticles show $n-\pi^*$ due to Si-O-Si Stretching and $\pi-\pi^*$ due to

the Si-OH stretching and π - π^* due to the Si-O group and n- π^* due to Si-O-Si bending transition states of SC-H are indicated by the UV-visible absorption peak.[7][8]

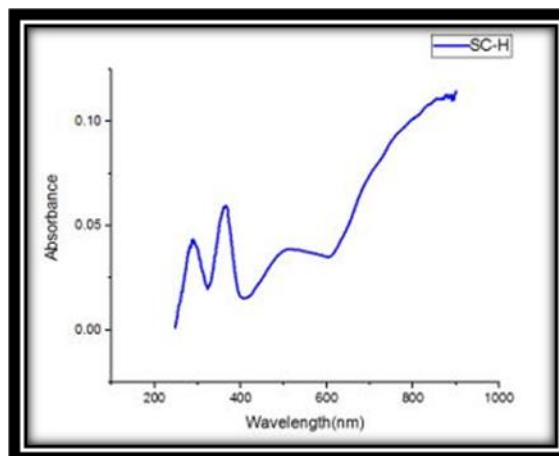


Fig 3.1. UV-Vis spectrum of SC-H(Absorbance Vs Wavelength)

3.2 BAND GAP ENERGY

The Band gap energy for SC-H

The absorption maxima in a nanoparticle could provide information about its band gap energy. From calculation the band gap energies for SC-H are 4.3205 eV, and 3.4065 eV. As a result, the mesoporous silica nanoparticle that were created are Insulators.

3.3 Fluorescence Spectroscopy

The fluorescence graph for synthesised mesoporous silica nanoparticles recorded between the range 200nm-900nm. For SC-H sample, the high intense emission peak at 468nm with 1960.14 intensity. [9] [10]

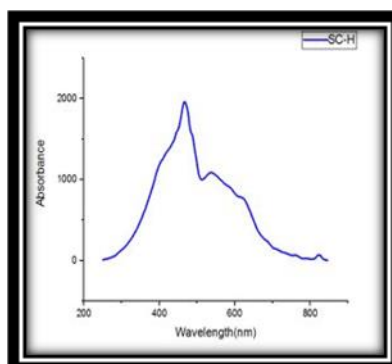


Fig 3.3 Emission spectrum of SC-H(Absorbance Vs Wavelength)

3.4 FTIR studies

3.4.1 FT-IR Analysis for SC-H sample:

The stretching frequency involved in SC-H Nanoparticles were detected by FT-IR Analysis. The IR spectra of the sample were recorded in the range 400-3800 cm^{-1} . [56]The stretching of the peaks at 1512.19 cm^{-1} , 478.35 cm^{-1} , 432.05 cm^{-1} could be designed Si-O-Si Stretching. 1111.09 cm^{-1} , 540.07 cm^{-1} could be designed Si -O-Si bending. 648.08 cm^{-1} , 609.08 cm^{-1} , 586.36 cm^{-1} could be designated Si – OH Stechting. 725.23 cm^{-1} Symmetry stretching.[11][12]

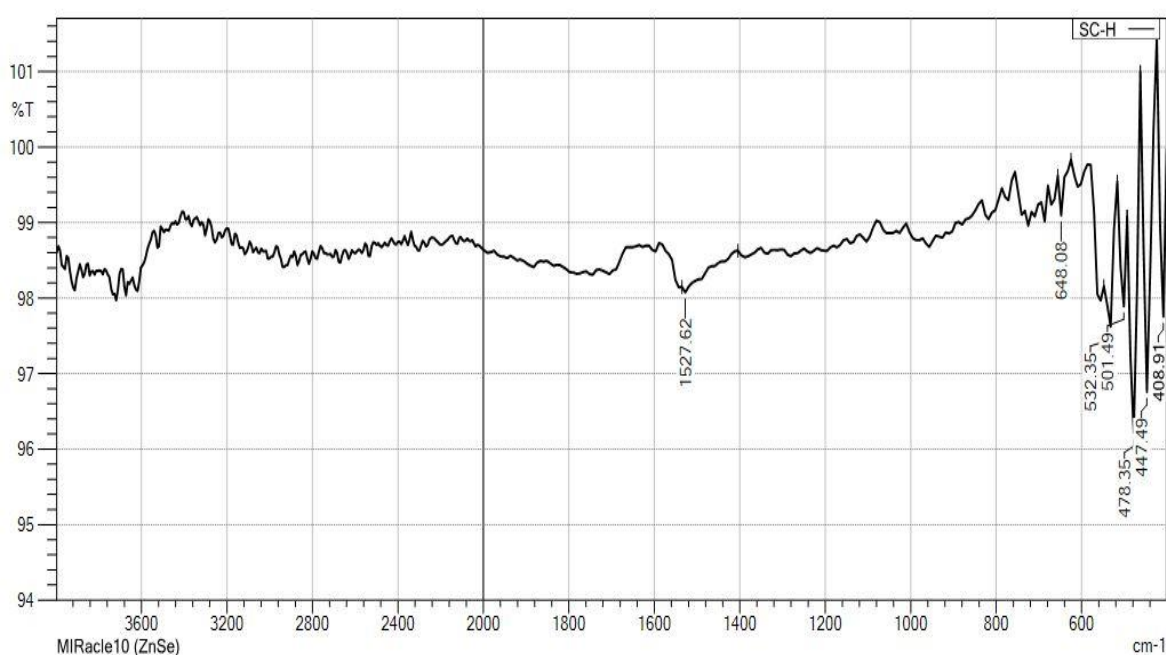


Fig 5.3.2 FT-IR spectra of SC-H

3.5 XRD Calculation

3.5.1 XRD Analysis of SC-H

XRD diffraction with a 2θ ranges 20° to 70° of SiO_2 nanoparticles, using $\text{Cu K}\alpha 1$ (1.540596Å).The 2θ formed are 28.74°,31.14°, 30.11°,and 50.53°. Based on the XRD diffractogram showing based on JCPDS Card No. 9006289 regarding hkl ,(400),(323), (420), (712).[62]The crystal phase of this type of silica is tetragonal with a lattice parameter of a axis-10.21700Å°, b axis – 7.95790Å° and c axix – 4.95650Å°,

respectively , the addition of high temperature influences the crystallinity and structural phase of material.[13] [14]

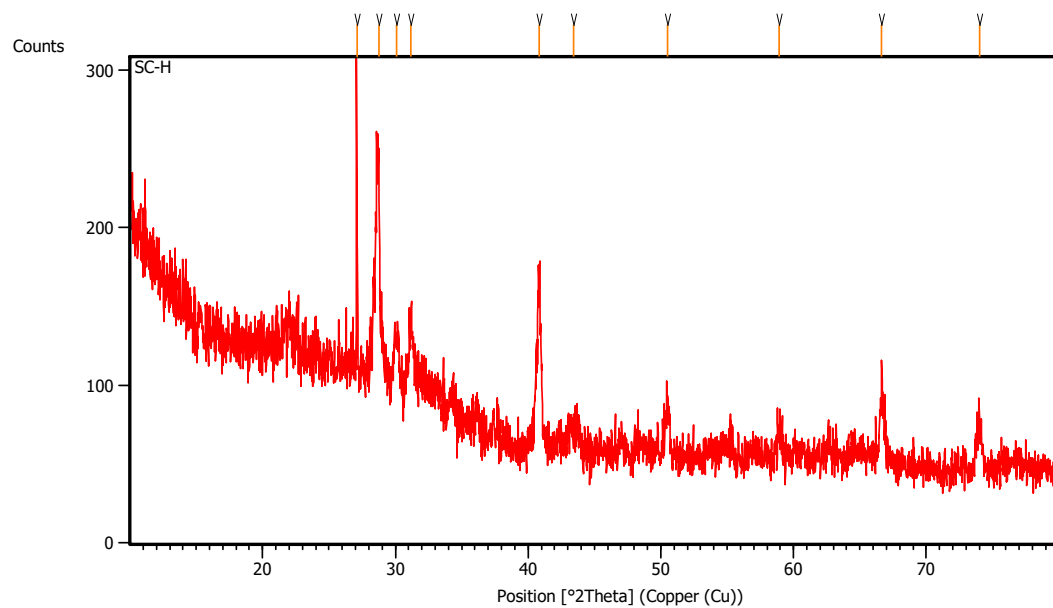


Fig 3.5.2.b XRD spectrum of SC-H

3.5.2.c Calculation of the lattice value

$$a = K\lambda / 2\sqrt{k}$$

$$a = 0.94 \times 1.5406 / 2\sqrt{0.0102}$$

$$a = 1.4481 / 0.2059$$

$$a = 7.0330$$

3.6 FIELD EMISSION - SCANNING ELECTRON MICROSCOPY

3.6.1 SEM Analysis for SC-H

The morphology and size distribution of the synthesized SC-S Nano particles can be measured by the Field Emission – Scanning Microscopy (FE-SEM). The average particle size ranges from (2μm – 500nm).The figure (a,b,c,d,) shows the difference magnification. [15][16]

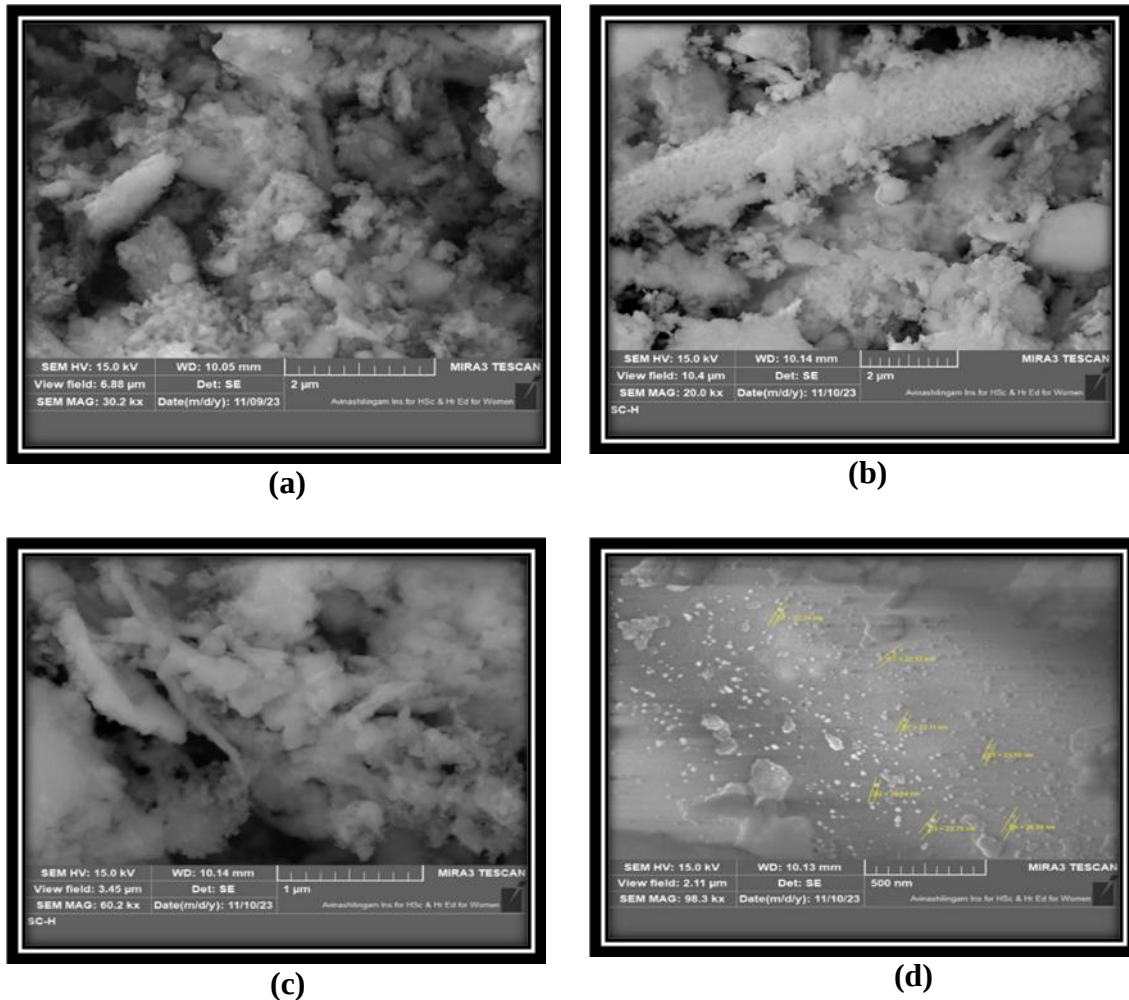
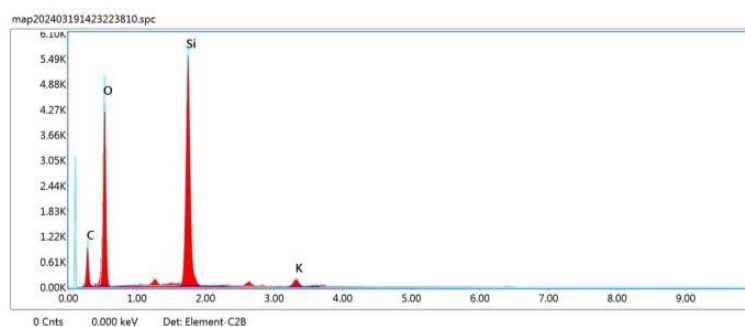


Fig 3.6.1..a, b, c, d SEM images of various magnifications such as 2μm, 1μm, and 500nm.

3.7 EDAX Analysis

3.7.1. EDAX Analysis of SC- H

Energy dispersive x-ray analysis was used to confirm the elemental composition of SC-H nanoparticles. The figure a,c shown below indicates the presence of silica, oxygen respectively in synthesized SiO_2 nanoparticles.[17][18]



3.7.1. EDAX spectrum of SC- H

4. CONCLUSION

The synthesized mesoporous silica nanoparticles using agricultural wastes viz., corn wastes are characterized using several techniques such as Using EDAX, XRD, and UV, FTIR, and SEM, mesoporous silica nanoparticles was analyzed. Additionally, use antibacterial activity (Disc diffusion method) to ascertain the silica nanoparticle's microbial activity

- ✓ The π - σ^* and π - π^* and n - π^* transition states of SC-H are indicated by the UV-visible absorption peak.
- ✓ All the three samples show emission properties. The emission wavelength exhibited by the SC-H at 272nm, 290nm, 367nm, respectively.
- ✓ The FT-IR studies reveal Si-O-Si bending, Si-O group, Si-OH stretching, and in the sample SC-H and the band gap energy reveal that all the three synthesised mesoporous silica nanoparticles are act as a insulator.
- ✓ XRD reveals that the mesoporous silica nanoparticles that were generated are crystalline in nature. SC-H have crystal sizes 5.8069nm respectively. SC-H in the orthorhombic phase.
- ✓ The SEM results show that SC-H have a structure that resembles rock and needle.
- ✓ EDAX analysis confirms that the SC-H sample contains silica 58% and oxygen 31% , in were detected.
- ✓ The mesoporous silica nanoparticles that was created was utilized in a variety of applications such as drug delivery, tissue regeneration, adhesion to moist tissues, prevention of bleeding, imaging contrast, shielding organs or tissues from radiation, and enhancing the biocompatibility of medical implants.

5. REFERENCE

- [1] N. Rameli, et al., “*Synthesis and characterization of mesoporous silica nanoparticles using ionic liquids as template*”, Journal of Physics: Conference Series doi: 10.1088/1742-6596, **2018**
- [2] Reema Narayan, et al., “*Mesoporous Silica Nanoparticles: A Comprehensive Review on Synthesis and Recent Advances*” MDPI Journals, Volume 10(3), page 118, <https://doi.org/10.3390/pharmaceutics10030118>, **2015**

- [3] JongkookHwang,et al., “*Facile approach for the synthesis of spherical mesoporous silica nanoparticles from sodoium silicate*” Journals Materials Letters, Volume 283, <https://doi.org/10.1016/j.matlet.2020.128765>, **2021**.
- [4] Mehrez E, et al., “*Soil Application of Nano Silica on Maize Yield and its Insecticidal activity against some stored insects after the post-harvest*”, MDPI Journals, Volume 10, pages 739, <https://doi.org/10.3390/nano10040739>,**2020**.
- [5] Yuning Qu, et al., “*A Novel mesoporous lignin/ silica hybrid from rice husk produced by a sol-gel method*”, Bioresource Technology, Volume 101, Pages 8402-8405, <https://doi.org/10.1016/j.biortech.2010.05.067>, **2010**.
- [6] Gemma Turnes Palomino, et al., “*FT-IR studies on the acidity of gallium-substituted mesoporous silica*” Materials Chemistry and Physics, Volume 85, Pages 145-150, <https://doi.org/10.1016/j.matchemphys.2003.12.020>, **2004**.
- [7] Naito M, et al., “*Preparation of sols from finely divided silicon*”, October 2013 Russian Journal of Inorganic Chemistry 58(10):1143-1151DOI:[10.1134/S0036023613100215](https://doi.org/10.1134/S0036023613100215),**2013**.
- [8] Yuanyuan Zhang, et al., “*Polymer-Coated Hollow Mesoporous Silica Nanoparticles for Triple-Responsive Drug Delivery*” Journals ACS Applied Materials & Interfaces 7(32), <https://doi.org/10.1021/acsami.5b05893>, **2015**.
- [9] Mueller P, et al., “*Facile synthesis of chitosan capped mesoporous silica nanoparticles: a pH responsive smart delivery platform*” Journals SpringerLink, Volume 19, pages 1344–1357, <https://doi.org/10.1208/s12249-017-0949-0>, **2013**.
- [10] Vitale-Brovarone, et al., “*Hybrid mesoporous- microporous nanocarriers for overcoming multidrug resistance*”, ACS Publications, Volume 7, pages 2503–2512<https://doi.org/10.1021/acs.molpharmaceut.7b01096>, **2009**.
- [11] Li, Z, et al., “*pH-responsive controlled release of mesoporous silica nanoparticles*”, European Volume 206, <https://doi.org/10.1016/j.eurpolymj.2024.1127832012>.**2019**.

- [12] Vivero-Escoto, J, et al., “*Studies on the formation of black particles in rice husk silica ash*”, IOP Conference Series Materials Science and Engineering 540(1):012007DOI:[10.1088/1757-899X/540/1/012007](https://doi.org/10.1088/1757-899X/540/1/012007), **2010**.
- [13] Yang, P, et al., “*Effect of calcination temperature and heating rate on the optical properties and reactivity of rice husk*”, Rice ScienceVolume 31,<https://doi.org/10.1016/j.rsci.2023.08.005> **2012**.
- [14] Wang, Y, et al., “*Surface properties of silicas produced by thermal treatment of rice husk ash*”, Journal of the Taiwan Institute of Chemical Engineers,Volume111, <https://doi.org/10.1016/j.jtice.2020.05.008> , 2005.
- [15] Wang, Y, et al., “*Mesoporous silica nanoparticles end-capped with natural chitosan*”, Chem Chemical Communications 50(87) DOI:[10.1039/C4CC04383A](https://doi.org/10.1039/C4CC04383A),**2010**.
- [16] Huilin Cui, et al., “*Fabrication of Gradient Nanoporous All-Polysaccharide Films as Strong, Superfast, and Multiresponsive Actuators*“, Advances functional materials Wiley, <https://doi.org/10.1002/adfm.201807692>, **2019**.
- [17] Beck, J, et al., “*A new family of mesoporous molecular sieves prepared with liquid crystal templates*”, ACS publications, Volume 114, pages 10834–10843,<https://doi.org/10.1021/ja00053a020>, **1992**.
- [18] Kresge, C, et al., “*The discovery of ExxonMobil's M41S family of mesoporous molecular sieves*” Studies in Surface Science and Catalysis, Volume 148, Pages 53-72,[https://doi.org/10.1016/S0167-2991\(04\)80193-9](https://doi.org/10.1016/S0167-2991(04)80193-9), **2004**.
- [19] Vallet-Regi, M., *Drug Delivery System*”, “*A New Property of MCM-41*: “,<https://doi.org/10.1021/cm0011559>, **2000**.
- [20] Xiaohong Hao, et al., “*Hybrid Mesoporous Silica-Based Drug Carrier Nanostructures with Improved Degradability by Hydroxyapatite*”, ACS publications, Volume 10, pages 9614–9625, <https://doi.org/10.1021/nn507485j>, **2015**.
- [21] Wang, Y, et al., “*Kinetically Controlled Dendr Mesoporous Silica Nanoparticles: From Dahlia- to Pomegranate-like Structures by Micelle Filing*”, Chemistry of materials, volume 30, pages 5770-5776, <https://doi.org/10.1021/acs.chemmater.8b02712>, **2018**.

- [22] M. Vallet-Regi, et al., “*A new property of MCM 41 drug delivery system*” ACS publications, Volume 13, pages 308–311, <https://doi.org/10.1021/cm0011559>, **2001**.
- [23] Mohammad Mehdi Khodaei, A, et al., “*Green and Cost-Effective Approach for the Production of Gold Nanoparticles Using Corn Silk Extract: A Recoverable Catalyst for Suruki-Miyaura Reaction and Adsorbent for Removing of Dye Pollutants*” Elsevier, Volume 162, Pages 219-231, <https://doi.org/10.1016/j.poly.2019.01.060>, **2019**.
- [24] Aleksandra Piela, et al., “*Biogenic synthesis of silica nanoparticles from corn cobs husks. Dependence of the productivity on the method of raw material processing*”, Elsevier , Volume 99, <https://doi.org/10.1016/j.bioorg.2020.103773>, **2020**.
- [25] Liang Chen, et al., “*Mesoporous silica nanoparticles for tissue-engineering applications*”, Wiley, <https://doi.org/10.1002/wnan.1573>, Wiley Interdiscip Rev NanomedNanobiotechnol, **2019**.

DENSITY FUNCTIONAL THEORY ANALYSIS OF ANTIHYPERTENSION COMPOUNDS

R.Deliciya¹, C. ZozimusDivya Lobo^{2*}

PG Department of Chemistry, St. Mary's College (Autonomous), Thoothukudi
Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT

Density Functional Theory (DFT) simulations to study the molecular causes of hypertension using PyRX software and Gaussian 4.0 software. We investigate the electronic structures, energetics, and bonding properties of important biomolecules implicated in hypertension, such as renin, angiotensin II receptor, and the angiotensin-converting enzyme (ACE), by building and optimizing molecular models of them. We obtain deeper insights into the electronic properties of these biomolecules through sophisticated analysis, such as density of states (DOS), charge density distribution, and molecular orbital analysis made possible by PyPX software. This information is crucial for the development of targeted therapeutic interventions against hypertension.

Keywords: Molecular Docking, Protein, Ligand, Antihypertension, DFT Theory, ACE Inhibitors, Gaussian 4.0, PyRX.

1. INTRODUCTION

One of the most common causes of atherosclerotic cardiovascular disease is hypertension. It has thermogenesis, resulting in a two- to three-fold elevated incidence of such occurrences, including coronary heart disease (CHD), the most prevalent and deadly after effect [1].

1.1 TYPES OF HYPERENSION

1.1.1 PRIMARY HYPERTENSION

When a child's blood pressure consistently remains above the 95th percentile without a secondary cause, it is referred to as primary hypertension [2] .

1.1.2. SECONDARY HYPERTENSION

Studies have indicated that pediatric patients are more likely to get secondary hypertension, with a prevalence of 75–85% in younger children.[3]

1.2.RNA INTERFACE

RNA interference (RNAi) is an innate regulatory mechanism that suppresses gene expression. Short RNAs known as RNAis cause homologous mRNA to be targeted by ribonucleases, which silences a particular gene [4].

1.3.DENSITY FUNCTIONAL THEORY

Density Functional Theory is an alternative approach to the traditional quantum chemistry methods (ab initio and semi empirical) to study the ground-state properties of molecular systems. DFT methods are suitable for investigation of large molecular systems [5]. From Janak's theorem, the highest occupied orbital energy (HOMO) equals the chemical potential and the negative of the ionization potential [6]. The fact that is the KS method the chemical potential of electrons is equal to the energy of the highest occupied KS orbital, determining the Fermi level, suggest that the DFT methods are perfectly suitable for description of the physical and chemical properties of molecular systems [7].

2. MATERIALS AND METHODS

2.1. TARGET SELECTION

The X-ray crystal structure of 4C2R was retrieved from Protein Data Bank. The protein energy was analyzed through Ramachandran Plot. The protein energy minimized through the Swiss PDB minimizer and used for further docking studies.

2.2. RAMACHANDRA PLOT 4C2R

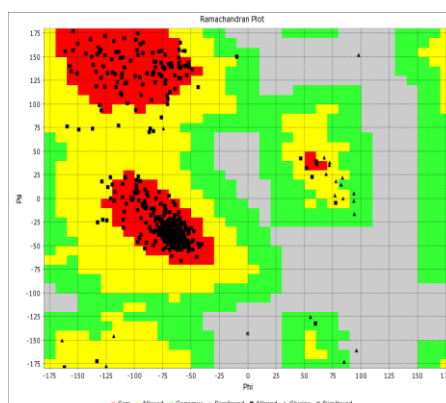


Figure 1 Ramachandra plot

2.3. BIOVIA DISCOVERY STUDIO

Discovery Studio is a complete software suite that may be used to analyze and model sequences, chemical structures, systems of small and big molecules, and other pertinent data.

2.4. PyRx DOCKING

PyRX is a Computational Drug Discovery Virtual Screening tool that allows libraries of compounds to be screened against possible therapeutic targets.

2.5. METHOD

On Windows 10 machines, ab initio calculations were carried out using Gaussian 04 software with the B3LYP method and -31G (d, p) basis sets.

2.6. MOLECULAR STRUCTURE PREDICTION

The chemical structure and vibrational wave numbers of the molecule were predicted using the computations.

2.7. FRONTIER ORBITAL ANALYSIS

The lowest unoccupied molecular orbital (LUMO) and highest occupied molecular orbital (HOMO) analyses received a lot of attention since they are critical in evaluating the compound's stability.

2.8. CHEMICAL ACTIVITY

The determined band gaps in eV for the HOMO and LUMO energy levels were reported. The LUMO-HOMO energy gap's eigen values represent the molecule's chemical activity.

2.9. CHARGE TRANSFER INTERACTION

Because of the electron-acceptor group's potent capacity to accept electrons, there are charge transfer interactions within the molecule as seen by the decrease in the HOMO-LUMO energy gap.

2.10. HOMO AND LUMO CHARACTERISTICS

While LUMOs have an anti-bonding π^* character, HOMOs have an overall π bonding character with a considerable non-bonding character.

3. RESULTS AND DISCUSSION

3.1. TARGET SELECTION

From the Protein Data Bank, the X-ray crystal structure of 4C2R was retrieved. The Ramachandra Plot was utilized to analyze the energy of the protein. The protein energy decreased by SWISS PDB optimizer is utilized for additional docking research.



Figure 2 Crystal structure of 4c2R

3.2.HOMO-LUMO DIFFERENCES

PUMCHEM ID	HOMO	LUMO	DIFFERENCE
73442	-4.26	-1.95	-2.31
10288	-4.23	-1.95	-2.28
92729	-5.19	-2.95	-2.24
338	-5.69	-3.57	-2.12
446925	-5.69	-3.57	-2.12
101906902	-6.23	-4.35	-1.88
2520	-3.12	-1.26	-1.86
11230	-3.12	-1.26	-1.86
145068	-3.57	-1.95	-1.62
439533	-4.26	-2.85	-1.41
5317570	-4.26	-2.85	-1.41
5458646	-5.69	-4.35	-1.34
10106436	-5.69	-4.35	-1.34
2519	-4.26	-2.92	-1.34
3314	-6.45	-5.12	-1.33
12411	-3.57	-2.26	-1.31

92094	-5.26	-3.95	-1.31
5903	-3.12	-1.95	-1.17
445639	-3.12	-1.95	-1.17
3037212	-3.12	-1.95	-1.17
5281	-5.23	-4.12	-1.11
2758	-4.35	-3.26	-1.09
3639	-5.26	-4.26	-1
259846	-5.26	-4.26	-1
785	-6.23	-5.26	-0.97
5770	-6.23	-5.26	-0.97
47936	-6.23	-5.26	-0.97
174003	-6.23	-5.26	-0.97
5281516	-6.23	-5.26	-0.97
638011	-2.23	-1.26	-0.97
18818	-5.26	-4.35	-0.91
327392	-5.26	-4.35	-0.91
5281149	-2.85	-1.95	-0.9
11369949	-2.85	-1.95	-0.9
702	-4.75	-3.95	-0.8
280489	-5.69	-4.92	-0.77
3220	-3.54	-2.85	-0.69
10467	-4.26	-3.57	-0.69
5280441	-4.26	-3.57	-0.69
161192441	-4.26	-3.57	-0.69
358901	-3.57	-3.12	-0.45
525503	-3.57	-3.12	-0.45
442347	-5.69	-5.26	-0.43
9548705	-5.26	-5.26	-0.43
5564	-4.26	-3.95	-0.31
6375530	-3.23	-2.95	-0.28
131801617	-3.12	-2.85	-0.27
73568	-4.23	-4.12	-0.11

73013770	-1.95	-1.95	0
517055	-2.85	-2.92	0.07
6850743	-2.85	-2.92	0.07
16590	-4.26	-4.35	0.09
11106439	-2.23	-2.45	0.22
23662386	-5.26	-5.69	0.43
5281794	-5.69	-6.23	0.54
62351	-1.26	-1.95	0.69
398941	-1.26	-1.95	0.69
5281643	-3.57	-4.26	0.69
5318517	-3.57	-4.26	0.69
101682254	-3.57	-4.26	0.69
16133932	-2.85	-3.57	0.72
31211	-3.57	-4.35	0.78
5281647	-1.95	-2.85	0.9
6850760	-1.95	-2.85	0.9
1287	-5.23	-6.23	1
5377796	-4.26	-5.26	1
12315492	-4.26	-5.26	1
62434	-3.12	-4.26	1.14
10207	-1.95	-3.12	1.17
92158	-1.95	-3.12	1.17
5281807	-3.12	-4.35	1.23
6918391	-3.12	-4.35	1.23
3016339	-2.85	-4.26	1.41
10887728	-2.85	-4.26	1.41
6549	-1.95	-3.57	1.62
168115	-1.95	-3.57	1.62
5280666	-1.95	-3.57	1.62
6450930	-1.95	-3.57	1.62
10817	-3.57	-5.26	1.69
3776	-4.26	-6.23	1.97

8815	-4.26	-6.23	1.97
445858	-4.26	-6.23	1.97
969516	-3.12	-5.26	2.14
11617	-1.95	-4.26	2.31
94378	-1.26	-3.57	2.31
173183	-1.95	-4.26	2.31
28523	-1.95	-4.35	2.4
68111	-1.95	-4.35	2.4
1794427	-1.95	-4.35	2.4
4170585	-3.12	-5.69	2.57
12890356	-3.12	-5.69	2.57
6850762	-3.57	-6.23	2.66
91457	-2.85	-5.69	2.84
168114	-2.85	-5.69	2.84
637776	-2.85	-5.69	2.84
5281553	-2.85	-5.69	2.84
6419725	-2.85	-5.69	2.84
155381	-3.12	-6.23	3.11
10208	-1.95	-5.26	3.31
442393	-1.95	-5.26	3.31
102003051	-1.95	-5.26	3.31
5355130	-1.95	-5.69	3.74
222284	1.26	-5.69	4.4

3.3. HOMO AND LUMO ENERGY GAP IN DENSITY FUNCTIONAL THEORY

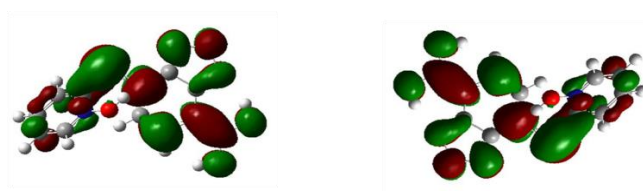
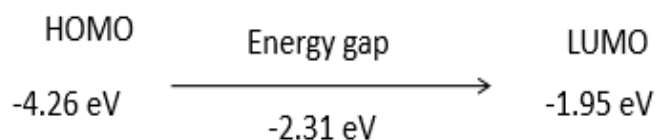


Figure 3HOMO-LUMO Energy Gap



4. CONCLUSION

One RAAS component that dramatically lowers blood pressure is called the ACE, and it is the focus of medication for hypertension. Understanding the electronic structure and reactivity of molecules depends on calculating the Highest Occupied Molecular Orbital (HOMO) and Lowest Unoccupied Molecular Orbital (LUMO) energies using Density Functional Theory (DFT) computations. These computations shed important light on a number of characteristics, including charge transport events, electron affinity, and ionization potential. It is possible to determine the HOMO-LUMO gap, a measurement of the stability and electronic transitional potential of the molecule. DFT HOMO-LUMO simulations offer important insights into the electrical characteristics of molecules, helping scientists create new materials and comprehend how they behave in various chemical setting.

5. REFERENCES

- [1]William B.Kannel, MD et al., “*Blood Pressure as a Cardiovascular Risk Factor*”, DOI: 10.1001/jama.1996.03530440051036, **1996**.
- [2]Barbara S.Bucher et al., “*Primary Hypertension in Childhood*”, **2013**.
- [3]Katerina Chrysaidou et al., “*Secondary Hypertension in Children and Adolescents: Novel Insights*”, DOI:http://doi.org/10.2174/1573402115666190416152820, **2019**.
- [4]Agrawal N, et al., “*RNA interference: biology, mechanism, and applications*”, DOI: 10.1128/mmbr.67.4.657-685, **2003**.
- [5]Heran BS et al., “*Blood pressure lowering efficacy of angiotensin converting enzyme (ACE) inhibitors for primary hypertension*”, DOI: 10.1002/14651858.CD003823.pub2, **2009**.
- [6] Sawsan Shanableh et al., “*Quality Of Life of Hypertensive Patients on Different Types ofAntihypertensive Medications*”, **2014**.
- [7]Agrawal N, et al., “*RNA interference: biology, mechanism, and applications*”, DOI: 10.1128/mmbr.67.4.657-685, **2003**.

BIOSYNTHESIS OF TITANIUM-SILICON DIOXIDE CORE SHELL FOR ENERGY DEVICE

***S. Thangeswari and B. Buddha kanya**

Department of Physics, St. Mary's College (Autonomous), Thoothukudi

Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT

This work presents an explicated study on the biosynthesis and characterization of silica coated titanium oxide core by using *Bay Laurel* leaves extract. The resulting core TiO_2 and core shell $\text{TiO}_2\text{-SiO}_2$ were characterized by x-ray diffraction, scanning electron microscopy, energy dispersive spectroscopy and transmission electron microscopy. Additionally, Transmission electron microscopy exhibited that TiO_2 particles surface was surrounded by amorphous silica layer and the thickness of the amorphous layer is estimated about 10–15 nm. The energy dispersive spectroscopy confirming the presence of elemental group in the prepared samples. X-ray diffraction data were used to find the size of the core is 26.27 nm and core shell is 13.51 nm. Cyclic voltammetry analysis was used to demonstrate, the prepared core TiO_2 and core shell $\text{TiO}_2\text{-SiO}_2$ were efficient candidate for the energy storing devices.

KEYWORDS: Biosynthesis, Core Shell $\text{TiO}_2\text{-SiO}_2$, Cyclic voltammetry, Energy Device.

INTRODUCTION

The supercapacitor is also called an ultracapacitor. Compared with regular capacitors, it has higher capacitance values. It typically capacitors store 10 to 100 times energy per unit volume. A capacitor is a two-terminal electrical device that can store energy in the form of an electric charge. It consists of two electrical conductors that are separated by a distance. Super capacitors are classified into three types. There are Electrostatic double layer capacitors, Pseudo-capacitors, Hybrid capacitors[1].

Core-shell type nanoparticles are a type of biphasic materials which have an inner core structure and an outer shell made of different components. These particles have been of interest as they can exhibit unique properties arising from the combination of core and shell material, geometry, and design[2].

Green synthesis of nanoparticles is becoming popular among researchers because it is a fast, cost-effective, environmentally friendly, and sustainable method.

Plant extracts play a crucial role in this process by acting as a capping agent, capturing metal ions in specific locations on the amylose helix. The texture of plant leaves and petals also influences the size of the nanoparticles and prevents them from clumping together, acting as a biotemplate [3].

In this study, the green synthesis of TiO-SiO_2 core shell using *Bay Laurel* leaves extract. Their structural features were compared by spectroscopic and microscopic techniques including XRD, SEM, EDX and TEM. Finally, the synthesized $\text{TiO}_2\text{-SiO}_2$ were subjected to electrochemical investigations by cyclic voltammetry was determined.

MATERIALS AND METHODS

The materials used are titanium Tetraisopropoxide (TTIP), Tetraethyl orthosilicate (TEOS), ethanol and deionized (DI) water. These were purchased from Sigma Aldrich Pvt. Ltd, Tamil Nadu, India and all the chemicals were used as such without any further purification. The extracts of *Bay Laurel* was chosen for our green synthesis. This biomaterial is well known spices and easily available. *Laurus nobilis* was purchased from local market, Thoothukudi, Tamilnadu, India. After the purchase they were properly washed with DI water and naturally air- dried at room temperature to remove dust or any other contaminants.

The collected biomaterial was washed with double distilled water (DDW) several times to remove impurities. To prepare the aqueous green extract, 20 g *Bay Laurel* was mixed with 100 mL DDW taken in a 250 mL conical flask, and the mixture was kept in a boiling at 55°C for 30 min. The solution changed color from colorless to brownish color. Then, the mixture was cool down at room temperature and the obtained brownish color liquid was filtered using Whatman filter paper no. 41 for further use.

About 100 mL of 0.1 M $\text{Ti}[\text{OCH}(\text{CH}_3)_2]_4$ solution was taken in a 250 mL conical flask. The solution mixture was stirring to room temperature and centrifuged at 1000 rpm for 2 hours. Then, 20 ml of the filtered *Bay Laurel* extract was added drop by drop to the titanium solution while continuously stirring at 35°C for 1 hour. The resulting solution turned white in color. The obtained product was then calcinated

in a muffle furnace at 1000°C for 1 hour. The resulting powder was collected, finely crushed, and stored in an airtight glass container for further experimentation.

Tetraethyl Orthosilicate (TEOS) (15 drops) and ethanol (50 mL) were mixed together and 50 mL of bio-extract was mixed to prepare a solution for coating of SiO₂. To the TOES solution, mechanically milled TiO₂ (1 g) NPs were added under stirred for 1 hour for dispersion. Followed by pH was monitored to achieve the requisite pH under stirring. The TOES solution and TiO₂ NPs were stirred which allowed to hydrolysis and condensation reaction to happen. Through hydrolysis and condensation, SiO₂ was coated to core TiO₂ NPs. After that the prepared core- shell TiO₂-SiO₂ NPs was washed four times, then isolated. The isolated TiO₂-SiO₂ NPs were dried under 100 °C for 3 h C in an oven, then kept under for 300 °C for 5 hours in a muffle furnace.

RESULTS AND DISCUSSION

Figure 1 presents the XRD pattern of the synthesized samples. It is observed that the well-defined TiO₂ core diffraction peaks 2θ at 25.6°, 37.9 °, 48.1°, 54.6°, 55.1°, 63.1°, 70.1° and 75.4°, which were assigned to the (101), (004), (200), (105), (211), (204) (116) and (215) crystal plane, respectively. This XRD characteristic pattern is consistent with the standard JCPDS values of anatase TiO₂ (JCPDS Card No. 21-1272) [4, 5]. As shown in Fig. 1b, the XRD patterns exhibited sharp diffraction peaks attributed to anatase of TiO₂/SiO₂ core shell. After adding SiO₂ the core peaks 2θ at 25.7°, 38.3 °, 48.5°, 54.9°, 55.3°, 63.2°, 70.2° and 75.6° which were assigned to the (101), (004), (200), (105), (211), (204) (116) and (215) crystal plane. It is observed that the peaks value and intensity are slightly changed but same crystal plane. No peaks for SiO₂ can be observed, which indicates the metal content added during the synthesis process was too low or the metal has been well-dispersed at TiO₂ matrix in the form of small cluster. The average crystallites size (D) of the as-prepared sample is estimated using the following Scherrer's equation

$$D = k\lambda / \beta \cos\theta \quad (1)$$

where D is the crystallite size, k is a constant (=0.9, assuming that the particles are spherical), λ is the wavelength of the X-ray diffraction. β is the FWHM and θ is the angle of diffraction.

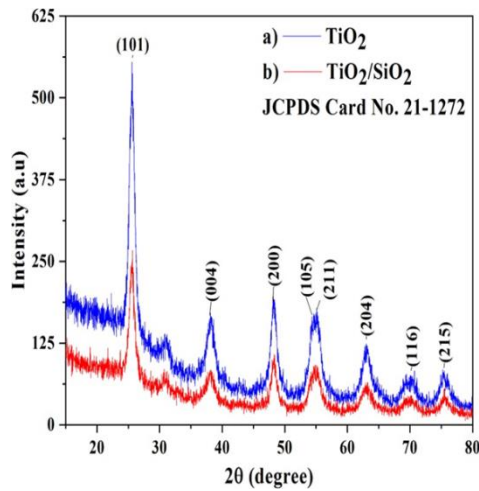


Figure1XRDpatternforTiO₂-SiO₂NPs

From the calculated crystallite size, it was found that the synthesized samples had small crystallite size with an average size of 26.3 nm and 13.5 nm for the core TiO₂ and core shell TiO₂/SiO₂, respectively. The other parameters were displayed in Table 1

Samples	Peaks (degree)	d- spacing (Å)	Size (nm)	Dislocation density(lines/m ²)	Microstrain
TiO ₂	25.643	3.4739	40.579	0.6073	3.8478
	37.8787	2.3752	31.374	1.0159	3.4027
	48.1241	1.8907	12.998	5.919	6.5382
	54.642	1.6796	44.535	0.5042	1.6951
	55.0941	1.6669	11.155	8.036	6.7163
	63.078	1.4738	19.892	2.5272	3.3301
	70.0421	1.3433	12.077	6.8558	4.9993
	75.3684	1.2611	37.498	0.7112	1.5116
Averagesize:				26.27nm	
TiO ₂ /SiO ₂	25.694	3.4671	15.216	4.3192	10.242
	38.156	2.3585	10.465	9.1303	10.13
	48.0938	1.8919	21.659	2.1318	3.9261
	54.9034	1.6722	16.717	3.5782	4.4961
	55.267	1.6621	6.6983	22.288	11.153

	63.1953	1.4713	12.668	6.2317	5.2205
	70.0735	1.3428	12.08	6.8531	4.9964
	75.4299	1.2602	12.503	6.397	4.5303
Averagesize: 13.51 nm					

Table1XRDcalculatedparameters

Figure 2 shows the SEM images of the prepared TiO₂NPs. The surface morphology of the TiO₂ NPs was studied using scanning electron microscopy. The SEM images shows that the prepared TiO₂ NPs had a uniform spherical morphology. In general, the decrease in particle size is inversely proportional to the surface volume of the material. Similar trend was observed in figure 3

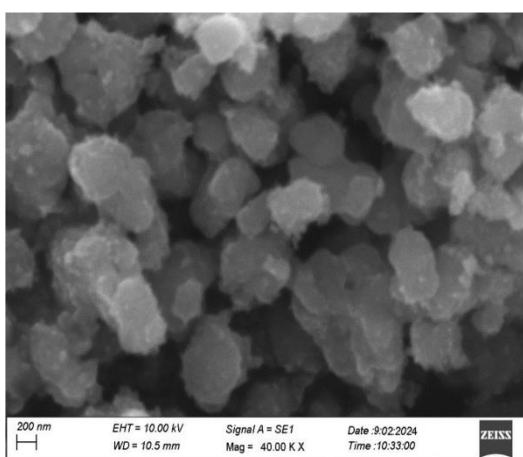


Figure2 SEM image of prepared TiO₂NPs

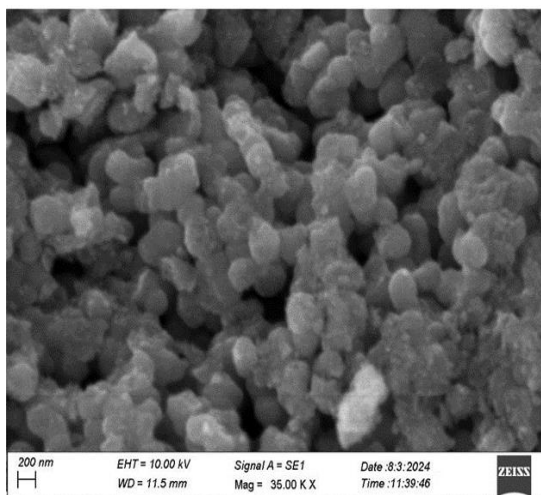


Figure3 SEM image of prepared SiO₂coated withTiO₂NPs

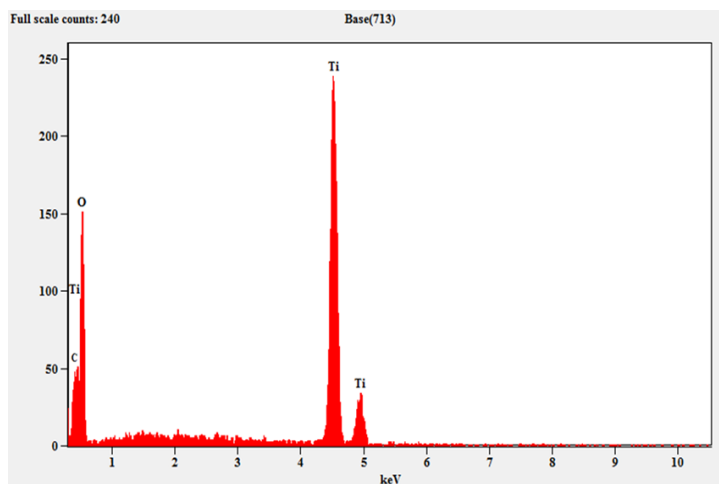


Figure 4 Energy Dispersive X-ray analysis (EDX) of TiO₂ Nano particles

EDX is performed to study the elemental compositions of TiO₂ nanoparticles is shown in Figure4. The presence of significant peaks for Titanium (Ti) and oxygen (O) reveal the formation of Titanium Oxide nanoparticles. There are 2 peaks can be observed at about 4.5 and 5.0 keV, which corresponding to the binding energies of the titanium [6]. Thus, the formation of TiO₂ nanoparticles is confirmed.

<i>Element Line</i>	<i>Weight t%</i>	<i>Weight% Error</i>	<i>Atom %</i>
Ti K	40.05	---	66.67
C K	1.07	---	0.98
O K	58.88	±1.38	32.35
TiL	---	---	-
Total	100.00		100.00

Table2 The chemical composition of the TiO₂NPs

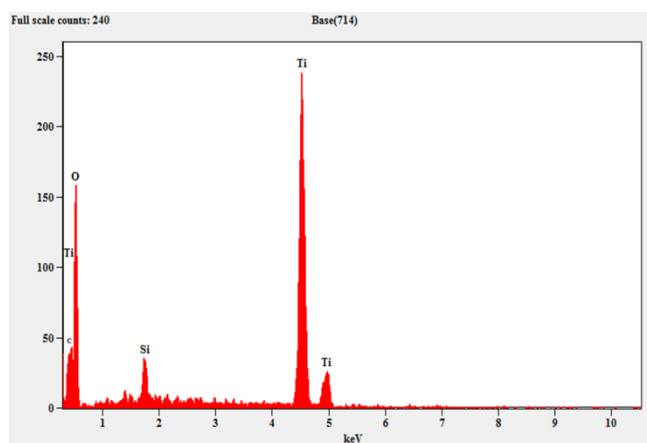


Figure 5 Energy Dispersive X-ray analysis (EDAX) of TiO₂ coated by SiO₂

<i>Element Line</i>	<i>Weight %</i>	<i>Weight% Error</i>	<i>Atom %</i>
OK	36.25	---	62.73
C K	2.70		2.20
SiK	2.74	±0.37	2.60
TiK	58.31	±1.38	32.47
Total	100.00		100.00

Table3 The chemical composition of the TiO₂NPs coated by SiO₂NPs

Besides, the inset table shows the major elemental component TiO₂ nanoparticles is oxygen (58.88%) and Titanium (40.05%). Carbon can be detected as well which the elemental compositions are 1.07%. This result proves that the presence of TiO₂ nanoparticles is verified. The similar trend was observed in figure 5. It is displayed that the addition Si obtained after completing the coating process. This result proved that the presence of TiO₂-SiO₂nanoparticles is verified.

Figure 6 shows that the TEM images of core-shell structured TiO₂-SiO₂nanoparticles. The comparison of these pictures shows that TiO₂ particles surface was surround by amorphous silica layer. The average diameter size of silica-coated TiO₂ nanoparticles was determined as 20–50 nm. The thickness of the amorphous layer is estimated about 10–15 nm. The densely continuous and uniform SiO₂coating layers formed with an average thickness of 5 nm. Core-shell structured TiO₂-SiO₂ nanoparticles of varying shell thicknesses were synthesized and confirmed through TEM examinations.

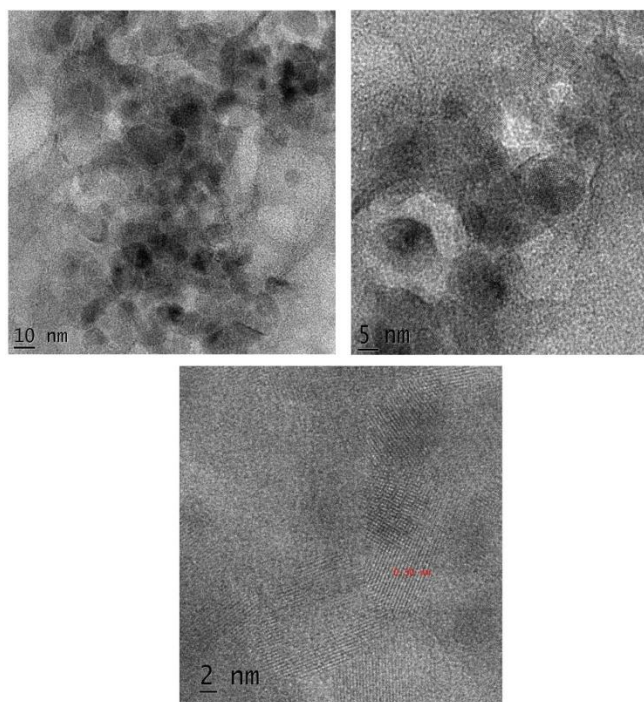


Figure 6 TEM images of prepared TiO_2 Coated by SiO_2 NPs

Electro chemical characterization was carried out using a three-electrode system. The working electrode was prepared by mixing 70% of active materials (in this case, TiO_2 and $\text{TiO}_2/\text{SiO}_2$ powder), 20% of acetylene black as conductive fillers, and 10% of poly tetra fluoro ethylene as a binder. The mixture was pasted on nickel foam (1×1 cm), which served as the current collector. The nickel foam was dried in an oven for 12 h at 353 K and then pressed to fabricate electrodes. A platinum wire was used as the counter electrode, and Ag/AgCl was used as the reference electrode. All measurements were recorded using 6M KOH as the electrolyte. Cyclic voltammetric (CV) measurements were recorded on the above- mentioned system within a range of -1.5 to $+2$ V at the scan rates of 10, 20, 30, 40, 50, 60, 80 and 100 mV/s

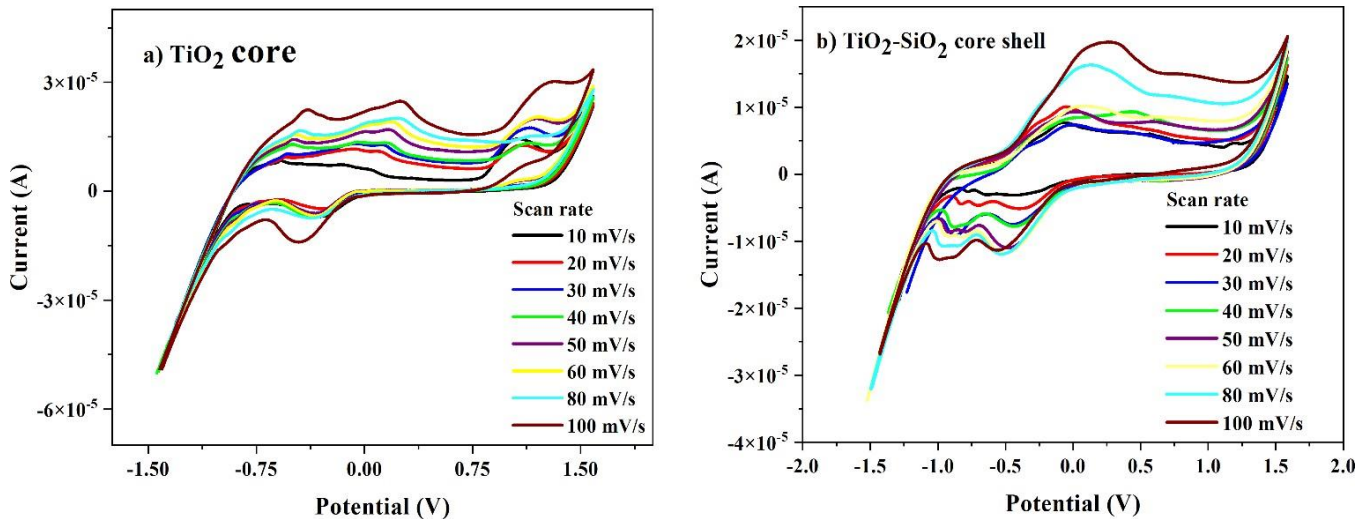
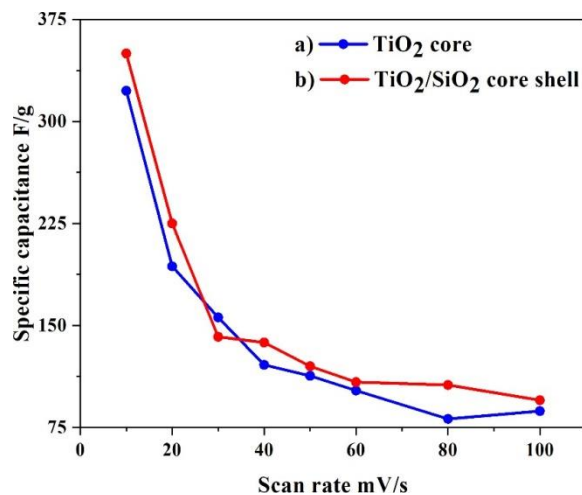


Figure 7 Cyclic Voltammetry Analysis of Prepared a) Titanium Oxide and b) Titanium Oxide coated by Silicon Oxide

Figure 7 shows the electrochemical performance of TiO_2 and $\text{TiO}_2\text{-SiO}_2$ core shell as a super capacitor electrode. In Fig. 7, a pair of cathodic and anodic peaks in the CV curves can be clearly found due to its pseudo capacitance behavior, distinctly different from normal electric double layer capacitance with a rectangular CV shape. In inset of Fig. 4.7, the anodic peak current value show a linear relationship to the square root of the scanning rates, suggesting that the electrochemical reaction on the



electrode surface was a diffusion-controlled process square root of the scanning rates, suggesting that the electrochemical reaction on the electrode surface was a diffusion-controlled process

Figure 8 Spectrum of Scan rate vs Specific capacitance of prepared $\text{TiO}_2\text{-SiO}_2$ nanoparticles

Figure 8 shows the specific capacitance dependent scan rate profile for the samples. The specific capacitance of the electrode might be calculated from the following equation [7]

$$C_s = \frac{\int i dV}{m \Delta V} \quad (2)$$

where, ΔV is the voltage window, s is the constant scan rate ($V s^{-1}$), A is the average geometric area of the two electrodes (cm^2), and m is the combined mass of the active material on both electrodes (g). The device's areal and specific capacitances as calculated from the CV curves spread from $323 F g^{-1}$ to $87 F g^{-1}$ for TiO_2 and $350 F g^{-1}$ to $95 F g^{-1}$ with scan rates increasing from $10 mV s^{-1}$ to $100 V s^{-1}$. The decrease in capacitance with increasing scan rate is a common feature of Electric Double Layer Capacitors and is caused by the different time regimes of charge transport and ion diffusion for the varying scan rates. At lower scan rates, electrolytic ions have sufficient time to diffuse into the pores of the sample active layer, increasing the charge accumulation and thus the capacitance. At higher scan rates, charge accumulation is confined to the surface of the electrodes, decreasing the electrodes' capacitances obtained in table 4. It is exhibited that the scan rate is increases and the specific capacitance values are decreased is shown in figure 8.

Scan rate (mV/s)	Potential(V)		Specific capacitance(F/g)	
	TiO_2	TiO_2/SiO_2	TiO_2	TiO_2/SiO_2
10	3.1	2	322.59	350
20	3.1	2	193.55	225
30	3.1	2	155.91	141.67
40	3.1	2	120.97	137.5
50	3.1	2	112.90	120
60	3.1	2	102.16	108.33
80	3.1	2	81.25	106.25
100	3.1	2	87.10	95

Table 4 The calculated parameter for CV analysis

CONCLUSION

In this work, TiO_2 core and core TiO_2 coated by SiO_2 nanoparticles were synthesized successfully as biosynthesis method using *Bay laurel*. The optimal sample has been studied and established, and the crystal structure and pattern

calculated by powder XRD measurements. The elemental composition of TiO_2 core and core TiO_2 coated by SiO_2 have been verified by EDX. The energy level diagram for TiO_2 core and core TiO_2 coated by SiO_2 have been estimated based on electrochemistry techniques, using solid state prepared samples as the working electrode. In an extensive super capacitor device study, TiO_2 core and core TiO_2 coated by SiO_2 have been employed as the active material in an EDLC device, and a simple and economical electrode fabrication process has been demonstrated. The titanium dioxide coated by silicon dioxide enhances the specific capacitance of the resulting material. These core exhibit improved capacitance values after coating material SiO_2 added to TiO_2 . It is promoted that the prepared samples are efficient use of pseudocapacitor. Green synthesis opens up new possibilities for the application of nanoparticles in energy devices. From this analysis has proven that prepared nanoparticles based electrodes can be fabricated from the biometrial and integrated in low-cost, commercially-viable super capacitors for feature promising material energy storage capabilities.

REFERENCES

- [1] Viviana Cigolotti, Matteo Genovese, Francesco Piraino, Petronilla Fragiaco, 2023. Applications – Stationary|Stationary Energy Storage System: Overview. Reference Module in Chemistry, Molecular Sciences and Chemical Engineering. DOI:10.1016/B978-0-323-96022-9.00091-8
- [2] Srdic V, Mojic B, Nikolic M, Ognjanovic S, 2013. Recent progress on synthesis of ceramics core/shell nanostructures. Processing and Application of Ceramics, 7(2), pg 45–62. DOI:10.2298/pac1302045s
- [3] Green synthesis of nickel oxide nanoparticles using *Acacia nilotica* leaf extracts and investigation of their electrochemical and biological properties. Shabbir Hussain, Muazzam Ali Muazzam, Mahmood Ahmed, Muhammad Ahmad, Zeeshan Mustafa, Shahzad Murtaza, Jigar Ali, Muhammad Ibrar, Muhammad Shahid & Muhammad Imran. Journal of Taibah University for Science Volume 17, 2023 - Issue 1
- [4] Kong, W., Liu, B., Ye, B., Yu, Z., Wang, H., Qian, G., & Wang, Z.(2011). An Experimental Study on the Shape Changes of TiO_2 Nanocrystals Synthesized by Microemulsion-Solvothermal Method. Journal of Nanomaterials, 2011, 1–6. doi:10.1155/2011/467083

- [5] Zuas, O., & Budiman, H. (2013). Synthesis of Nanostructured Copper-doped Titania and Its Properties. *Nano-Micro Letters*, 5(1), 26–33.
doi:10.1007/bf03353728
- [6] Zuas, O., & Budiman, H. (2013). Synthesis of Nanostructured Copper-doped Titania and Its Properties. *Nano-Micro Letters*, 5(1), 26–33. doi:10.1007/bf03353728
- [7] Adams, K., González, A.F., Mallows, J., Li, T., Thijssen, J.H.J., & Robertson, N. (2019). Facile synthesis and characterization of $\text{Bi}_{13}\text{S}_{18}\text{I}_2$ films as a stable supercapacitor electrode material. *Journal of Materials Chemistry A*. doi:10.1039/c8ta11029h

SYNTHESIS AND CHARACTERIZATION OF NI-MN NANO COMPOSITES USING SESAMUM INDICUM AS REAGENT

D.J.Jasmine ,* S. Irudhayasahaya Lancy and P.Padmavathi.

Department of Physics, St. Mary's College (Autonomous), Thoothukudi

Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT:

A simple and efficient method of Synthesis and characterization of Ni-Mn Nanocomposites using Sesamum Indicum which has various applications like antioxidant activity in blood, anticancer activities were carried out by green synthesis method. The resultant composites were characterized by X-Ray Diffraction (XRD). XRD confirmed that the prepared nanocomposites as Ni-Mn and the particle size of Ni-Mn composites was found to be 39 nm respectively. Modern technological world demands a variety of multifunctional materials with desirable mechanical, thermal, electrical and chemical properties for specialized applications. Composites is a class of materials which present rich possibilities for the development of such multifunctional novel materials desired to new technological advancements. The current nanotechnology has received much attention towards nanocomposites materials due to their unique combination of properties superior to conventional composite materials. The absence of impurity peaks denotes the high crystalline nature of the composite material.

KEYWORDS: Synthesis and characterization, Sesamum indicum aqueous extract, Ni-Mn nanocomposites.

INTRODUCTION:

Today by an improvement of science and technological inputs and civilization for the industrial development is decided by the evolution of new, progressively technological conveniences accompanied by environmental crisis and public life limits. Enlargement of new materials may lead us to further useful and effective application of the finite resources we have in our hand as well as expose to best future we dream of today. Nanotechnology will eventually provide us with the ability to design custom-made materials and products with new enhanced properties, new nano

electronics components, new types of “smart” medicines and sensors, and even interfaces between electronics and biological systems [1].

Composites:

Composite materials, formed through combining two chemically or physically different materials can provide a desired set of properties which could be optimized to achieve the specific requirements. This material is a multiphase which is formed by combination of two or more distinct semiconducting materials, having enriched bulk properties considerably different from any of the counterparts.

Classification of composites:

Composites can be broadly classified as follows:

- Based on nature of matrix phase
- Based on surface of dispersed phase
- Based on size of dispersed phase

Nanocomposites:

The current nanotechnology has received much attention towards nanocomposites materials due to their unique combination of properties superior to conventional composite materials. Nanocomposites are the composite materials in which at least one dimension of the dispersed phase is in the nanometre range. Nanocomposite material delivers an exclusive set of admirable properties which makes them multifunctional due to their large surface area to volume ratio of the nanoscale dispersed phase or nanofiller.

Nanocomposites show major advantages over conventional composites such as:

- Lighter weight due to low filler loading
- Low cost due to lower amount of filler use
- High mechanical strength
- High thermal stability
- Flame retardancy [2].

Green Nanocomposites:

A composite with at least one biodegradable component is known as a green composite. In other words, matrix or reinforcement or both may be biodegradable. There are many biodegradable matrix materials which are widely used. Examples, Starch, Cellulose Soy protein isolate and Wheat protein isolate.

Green Nanoscience:

Green chemistry and Nano science are both emerging fields that take advantage of molecular-level designing and have enormous potential for advancing our science. Nano science is the study of materials that are on the length scale of 100 nanometres or smaller and have properties that are dependent on their physical size. The principles of green chemistry can guide responsible development of nano science, while the new strategies of nanoscience can fuel the development of greener products and processes. In recent years, green synthesis of metal nanoparticles is an interesting issue of the nanoscience. The numbers of applications of nanocomposites have been growing at a rapid rate. More general applications currently being considered include usage as impellers and blades for vacuum cleaners, power tool housings, mower hood and covers for portable electronic equipment such mobile phones [3].

Herein we have synthesised Ni-Mn Nanocomposites mediated by sesamum indicum for Bio-medical purposes.

MATERIALS AND METHODS:

Materials: Nickel chloride, Manganese chloride, Sesamum indicum.

Methods:

Sesamum indicum aqueous extract: In order to get the Sesamum indicum aqueous extract, the sesame seeds are crushed. 4g of crushed Sesamum indicum seeds which is mixed with 100ml of deionized water and it is heated to about 80° C for 45 mins.

Ni-Mn nanocomposites using sesame aqueous extract:

The extract is doubly filtered with the sieve and followed by Whatman filter paper No.1. Add 25ml of the Sesame indicum extract in a beaker. Add 1 M of NiCl_2 and MnCl_2 into the beaker. It is then stirred at room temperature about 3 hours. The pH value of the solution is maintained at 11 by dropwise addition of KOH. The solution was subjected to 30 mins of sonication process using a ultrasonicator with 40 KHz frequency with input power of 350 W. Then the sample is thoroughly rinsed with double distilled water around 5 times. The precipitate is filtered and dried in hot air oven at 600°C for 10 hours. The sample is annealed at 750 °C for 8 hours. Black colour Ni-Mn nanocomposite is obtained.

RESULTS AND DISCUSSIONS:

Characterization using XRD:

The structural characterization of the Ni – Mn nanocomposites are carried out by the XRD method. The x-ray diffraction experiments are carried out with the XPERTPRO

diffraction system using the Cu K α radiation of wavelength 1.5406Å°. The type of the scan used is continuous and range from 10° to 80°. The average grain size is calculated using the Debye Scherrer formula,

$$D = K\lambda / \beta \cos\theta \text{ (m)}$$

where,

- D is the grain size or particle size (nm)
- β is the full width at half maximum (FWHM) of a broad diffraction peak
- λ is the X-ray wavelength (1.5406 Å)
- θ is the Bragg's angle (degree)
- K is the Scherrer constant (0.9)

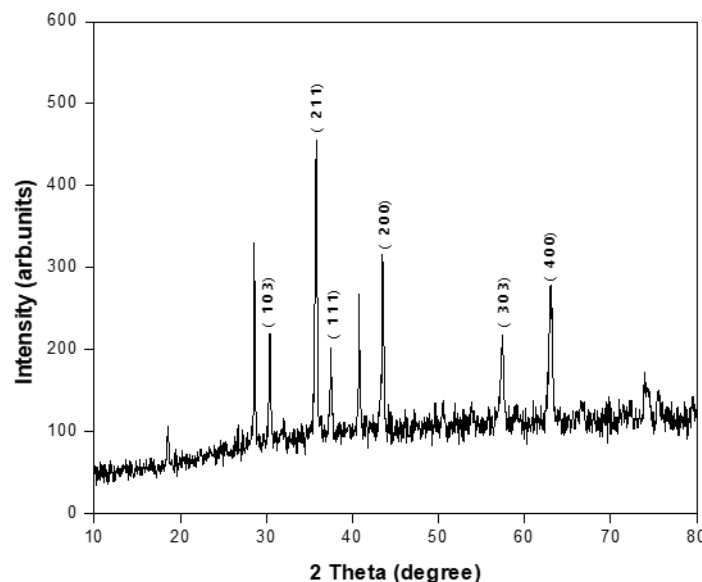


Figure 1:XRD pattern of Ni – Mnnanocomposites.

The XRD results for the Ni – Mnnanocomposites exhibit strong peaks around $2\theta = 37.50^\circ$ along (1 1 1) plane, $2\theta = 43.36^\circ$ along (2 0 0) plane which belongs to Nickel and $2\theta = 30.40^\circ$ along (1 0 3) plane, $2\theta = 35.78^\circ$ along (2 1 1) plane, $2\theta = 63.00^\circ$ along (4 0 0) plane, $2\theta = 57.39^\circ$ along (3 0 3) plane and $2\theta = 74.18^\circ$ along (4 1 3) plane which belongs to Manganese. This indicates clearly the formation of Ni – Mnnanocomposites. The peaks values are in good agreement with the JCPDS cards. The absence of impurity peaks denotes the high crystalline nature of the composite material. The average crystalline size of the particle is 39nm which is calculated using Debye Scherrer formula.

CONCLUSION:

In the present scenario nanotechnology is playing an important role in all fields of science and technology. Nanoparticle synthesis via green and ecofriendly route is safer and good alternative to the conventional methods. Hence synthesis and characterization of Ni -Mnnanocomposites using Sesamum Indium extract as capping or stabilizing agents has been carried out and the results of the study are incorporated in the present paper.

Ni -Mnnanocomposites were successfully synthesized from NiCl_2 and MnCl_2 using Sesamum Indium extract as capping/stabilizing agent. The particles obtained were analysed by XRD for the confirmation of the particles. The particle size is found to be approximately 39 nm by XRD analysis. They are found to be crystalline in structure. The plant species (extracts of various parts of the plant) served as capping or stabilizing agent and it is possible because plant extract perform an effective protection and prevent aggregation of particles. The results suggested that green plants provided the formation of more stable nanoparticles. The synthesis is carried out at room temperature and in aqueous conditions without addition any chemical reagent as capping / stabilizing agent and therefore it is to be considered as a green and ecofriendly process, reliable and economic method of synthesis of Ni-Mnnanocomposites.

REFERENCES:

- [1].Murthy.B.S, Shankar. Pand Baldev Raj, Textbook of Nano science and Nanotechnology (2012).
- [2]. Shi D.L, Feng X.Q., Huang Y.G.Y, Hwang K.C.and Gao H.J, The effect of nanotube waviness and agglomeration on the elastic property of carbon nanotube-reinforced composites. Matter and Technology, (2019), pp.250–257.
- [3]. Sreekumar P.A., Gopalakrishnan P., Leblanc N and Saiter J.M., Effect of glycerol and short sisal fibers on the viscoelastic behaviour of wheat flourbased thermoplastic. Composites Part Applied Science and Manufacturing. (2017), 41(8), 991-996.

SYNTHESIS AND CHARACTERIZATION OF CHITIN NANOPARTICLES EXTRACTED FROM THE WASTE OF SHRIMP SHELLS

A.Lordhu Ledis Selsiya,*S.Irudhaya Sahaya Lancy and P.Padmavathi

Department of Physics, St. Mary's College (Autonomous), Thoothukudi

Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT:

Shrimp shell waste is used in this work to produce chitin. This is a cost-effective and sustainable approach for synthesizing chitin nanoparticles. This technique enables versatility in the synthesis of chitin nanoparticles with controlled morphologies, sizes, and properties for a range of uses in food packaging, environmental remediation, tissue engineering, and drug delivery. Shell powder is demineralized using 1% hydrochloric acid and deproteinized with 1M sodium hydroxide, respectively. X-ray diffraction was used to characterize the generated chitin. Chitin was identified as the prepared nanoparticle by XRD. The chitin nanoparticle's high crystalline nature is indicated from the lack of impurity peaks. Using the Debye-Scherrer formula, the particle size is determined to be 41 nm.

Keywords: Synthesis and Characterization, Shrimp shell, Chitin nanoparticles.

INTRODUCTION:

Chitin:

Chitin is a copolymer of poly (β -(1-4)-N-acetyl-D-2-glucosamine) and poly (β -(1-4)-D-2- glucosamine) repeating units. It is a colourless, odourless, tasteless, nitrogenous polysaccharide found in the outer skeleton of insects, crabs, shrimps and lobsters and fungi. It is the most abundant amino polysaccharide and most abundant polysaccharide in the earth. Annually 10¹⁰ -10¹² tons of chitin are produced by biosynthesis. Chitin adopts three different types of structural arrangement, α -, β - and γ -types which differ in their degree of hydration, number of hydrogen bonds, size of the unit cell, and number of chitin chains per unit cell. The α -type is the most robust form among the three, with an antiparallel arrangement of chitin chains and extensive intra and intermolecular hydrogen bonds. The α type of chitin is the most abundant form of chitin in the nature and is found in exoskeletons of shellfish and fungal cell

walls, and is more resistant towards physical and chemical changes. In contrast, β -chitin is more mobile with a parallel arrangement of chitin chains; in this case, N - acetyl groups act as spacers between the chains which results in weaker intermolecular interactions, allowing easier access to solvent molecules. β -allomorph of chitin is mainly found in diatoms and squid pens. The γ -type is the combination of the both, found in Loligo squid and cuttlefish stomach lining.

Sources of chitin:

Chitin occurs in fungi, diatoms, nematodes, arthropods, plants, insects and animals. It is also found in various terrestrial sources such as mosquitoes, cockroaches, honeybees, silkworms, drosophila melanogaster (fruit fly), extatosoma tiaratum (spiny leaf insect) and sipyloidea sipylus (pink winged stick insect). The composition of the chitin varies depending on the species. Commercial production of chitin is limited to few marine organisms such as prawn, shrimp, crab, lobster, krill and squid pen due to their greater availability as waste from seafood processing industry. Approximately 45-weight percentage of crustaceans are discarded as waste during food processing stage. This discard includes head, shell, thorax, and claws which are predominant in chitin, protein, and minerals. [1]

Shrimp shell:

Shrimp shells consist mainly of chitin, protein and minerals. About 20 to 30 per cent of a shrimp shell is made up of chitin. They are a potential source of calcium. Analyses showed that the shrimp shell consisted of 18.1% chitin, 33.3% CaCO_3 , and 38.6% protein.

MATERIALS AND METHODS:

2 Kg of shrimp are bought from the local market of Thoothukudi and the shells alone were removed completely. Wash the shells thoroughly with double distilled water. Then it is dried in hot air oven for 30 hours at 800°C . The dried shells were grinded into powder and stored in a closed container in freezer until it is used. 30 g of shell powder is mixed with 1M of NaOH with solid to solvent ratio 1:5. This solution is kept undisturbed for 24 hours at room temperature. Then the residue is washed and soaked in double distilled water for several times. Further it is dried in

oven at 600°C. The dried powder is then treated with 1% of HCl with solid to solvent ratio 1:5 and kept undisturbed at room temperature. Then the residue is washed and soaked in distilled water until the pH reached neutral. Next it is kept in oven at 60°C until it is dried. The dried sample is placed in muffle furnace at 750° C. The precipitate thus obtained is finely powered. The produced residue is known as chitin.

RESULT AND DISCUSSION:

Characterization using XRD:

The structural characterization of the chitin is carried out by the XRD method. The x-ray diffraction

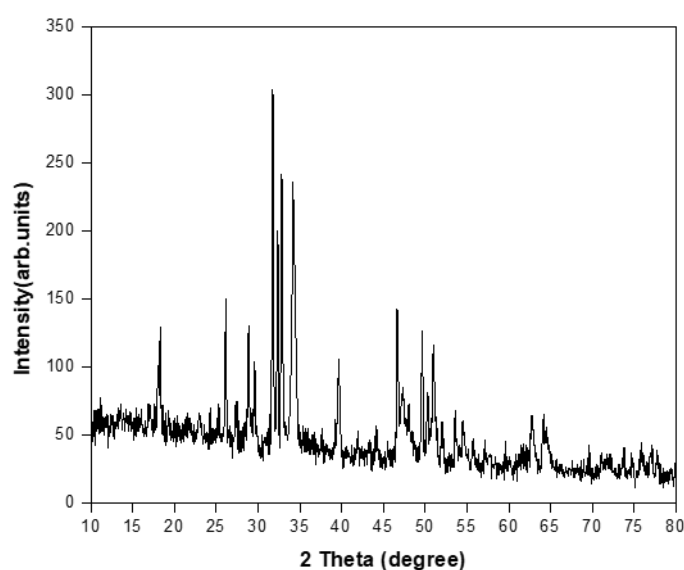
experiments are carried out with the XPERTPRO diffraction system using the CuK α radiation of wavelength 1.5406Å°. The type of the scan used is continuous and range from 10° to 80°. The average grain size is calculated using the Debye Scherrer formula,

$$D = K\lambda / \beta \cos\theta \text{ (m)}$$

λ - X-ray wavelength

β - line broadening at half the maximum intensity (FWHM)

θ - Bragg angle



XRD pattern of Chitin

The XRD results for the Chitin nanoparticles exhibit strong peaks around $2\theta = 18.17^\circ$ and $2\theta = 26.14^\circ$ belongs to alpha chitin. The peaks values are in good agreement with the JCPDS cards. The absence of impurity peaks denotes the high crystalline nature of the composite material. The average crystalline size of the particle is 41nm which is calculated using Debye Scherrer formula.

CONCLUSION

As a novel product of the acid hydrolysis of chitin, Chitin nanoparticles exists in α -chitin with more less-ordered domains than native chitin. In this present investigation, chitin is synthesized using the waste of shrimp shells. This is one of the eco-friendly cost effective method to synthesis Chitin nanoparticles. This method offers versatility in synthesizing chitin nanoparticles with controlled sizes, morphologies, and properties for various applications in drug delivery, tissue engineering, food packaging, and environmental remediation. The choice of synthesis method depends on factors such as desired nanoparticle properties, scalability, cost-effectiveness, and environmental considerations. From XRD pattern of as prepared Chitin, it is well noted that the peak values are in good agreement with previous reported work. The particle size is calculated using Debye Scherrer formula which is 41nm.

REFERENCES:

- [1]. Dhamodharan. R, Devi. R, Separation of Chitin from crustacean shell waste and the preparation of nanocrystals of Chitin and Cellulose, (2019).

A STUDY ON QUALITY OF WORK LIFE IN MACHADO LOGISTICS, THOOTHUKUDI

J. Anitha Roshini and S. Janat Jeya Kavitha

Department of Human Resource Management, St. Mary's College (Autonomous),
Thoothukudi Affiliated to Manonmaniam Sundaranar University, Tirunelveli,
Tamilnadu

ABSTRACT

Quality of work life refers to the level of happiness or dissatisfaction with one's career. There is an attempt to look into the Quality of Work Life among employees in logistics. The investigation has remarkably pointed out that the Quality of Work Life factors such as pay package, health and safety in the work environment, training and development, organizational environment and stress involved in the work. The factors increases and influences the organizational culture of work life. The Quality of work is a process in the organizations that allows employees level of satisfaction and effectively shapes the organizational environment. This study also covers the employees' overall satisfaction in the organization from all the aspects.

KEYWORDS: Quality, Work life balance, Quality of work

INTRODUCTION

Quality in the workplace comes from understanding and then fully meeting, the needs of all your internal and external customers, now and into the future and doing so with continual improvement in efficiency and effectiveness. The concept of quality is not applied to all goods and services created by human beings, but also for workplace where the employees were employed. Quality of work life refers to the favourable or unfavourable of a total job environment of the people. The basic purpose is to develop jobs and working conditions that are excellent for people as well as for the economic health of the organization. Quality of work life provides a more humanized work environment.

FACTORS INFLUENCING QWL

1. Work Environment:

Working environment is a place in which one works. It is a social and professional environment in which employees are supposed to interact with a number of people,

and have to work with co-ordination in one or the other way. Safe and healthy working conditions ensure good health, continuity of services, decreased bad labour management relations. A healthy worker registers a high productivity. Employees are cheerful, confident and may prove an invaluable asset to the organization if the working environment is good. It consists of safe physical and mental working situation and determining reasonable working hours.

2. Organization culture and climate:

Organization culture is a set of properties and organization climate is a collective behaviour of the people that are part of an organization values, vision, norms, etc. promotion opportunities, promotion and reward evaluation criteria used are both under the direct control of an organization and subject to the organization's policies.

3. Relation and co-operation:

Relation and cooperation are a communication between management and employees, concerning workplace decision, conflicts and problem resolving. Work and career are typically pursued within the framework of social organization and the nature of personal relationship becomes an important dimension of quality of work life. Acceptance of the workers is based on skills, work related traits, abilities and potential without considering the race, sex, physical appearance, etc.

4. Training and development:

Training and development are an organization activity aimed at bettering the performance of individual and groups. QWL is ensured by the opportunities provided by the job for the development of the employees and encouragement given by the management to perform the job, having good conditions to increase personal empowerment and skills.

5. Compensation and rewards:

Compensation and rewards are motivational factors. The best performer is given the rewards, and this builds the competitions among the employees to work hard and to achieve both organizational and individual goals. The economics interests of employees drive them to work and employee satisfaction dependent to some extent on the compensation offered. Pay should be fixed on the basis of the work done, individual skills, responsibilities undertaken, performance and accomplishments.

6. Facilities:

Facilities play major role in actualization of the goals and objectives by satisfying both the physical and emotional needs of the employees. Facilities include food service, transportation, security, etc. Many employees have found it beneficial to allow alternate work arrangement for their employees. This is one method to increase employee productivity and morale. The alternate work arrangements to the employees include flexible working hours, shorter or no commute, and secure working environment.

7. Autonomy of work:

In autonomous work groups, employees are given the freedom of decision making. Working themselves plan, co-ordinate and control work related activities. It also includes different opportunities for personnel such as independency at work and having the authority to access the related information for their task.

8. Employee satisfaction

Job satisfaction or employee satisfaction is a measure of workers' contentedness with their job, whether or not they like the job or individual aspects or facets of jobs, such as nature of work or supervision. Job satisfaction can be measured in cognitive (evaluative), affective (or emotional), and behavioural components. Researchers have also noted that job satisfaction measures vary in the extent to which they measure feelings about the job (affective job satisfaction). or cognitions about the job (cognitive job satisfaction).

REVIEW OF LITERATURE

A. Gnana yudam& Ajantha Dharmasiri (2008) studied Influence of quality of work life on organizational commitment by investigated on unsatisfactory level of commitment among workers in medium and large organizations in the apparel industry in Sri Lanka. A convenient sampling technique was adopted for the research. The sample size was limited to 87 workers and Pearson correlation used for data analysis. The result showed that QWL has a positively significant relation with the commitment and moderator effect of HRDC on the relationship between QWL and Commitment.

B. Alireza et al (2011) researched on the Relationship between Quality of Work Life and Demographic Characteristics of Information Technology Staffs Relationship b/w

QWL and demographic characteristics of IT staff with objective Measure the relation b/w QWL and demographics. The dimensions of QWL used as fair compensation, safe and healthy environment, growth and security, social relevance, life span, social integration, development of human capacities and age, gender, work experience income has taken as demographic factors. Data gathered from the 5 IT companies over 292 employees and ANNOVA one way used for the data analysis. Result showed there is no significant relation found between gender and QWL but positive significant relationship between IT staff and QWL, work experience and QWL and income and QWL.

OBJECTIVE OF THE STUDY:

- To study the quality of work life
- To explore the factors that increase quality of work life
- To determine the factors influencing the quality of work life
- To measure the level of satisfaction of employees

SCOPE OF THE STUDY:

- This study can be helpful to the management to improve its core weakness by the suggestions and recommendations prescribed in the project.
- The survey consists of a sample of 111 employees. The survey covered the employees of the IT organizations
- Data used in the project are primary in nature
- The study provides a base for understanding the employee problems and provides possible remedies for it.

RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problem. The procedure using, which researchers go about their work of describing, explaining and predicting phenomena, is called Methodology. Methods comprise the procedures used for generating, collecting and evaluating data. Methods are the ways of obtaining information useful for assessing explanation.

RESEARCH DESIGN:

The type of research taken for the study is descriptive in nature.

TABLE 1
TABLE SHOWING ENHANCEMENT LEVEL OF JOB SATISFACTION

S.NO	PARTICULAR	NO.OF RESPONDENTS	PERCENTAGE
1.	Micromanagement	29	58%
2.	Clear job role and responsibilities	11	22%
3.	Limited opportunities for skill development	4	8%
4.	Poor work life balance	6	12%
Total		50	100%

SOURCE: Primary data

INFERENCE

Based on the respondents focusing on enhancing the micro environment 58%, additionally providing clear job roles and responsibilities 22%, Limited opportunities for skill development 8% is also crucial for boosting job satisfaction and 12% of the respondents chose work life balance.

TABLE 2
TABLE SHOWING BETTER WORKLIFE BALANCE

S.NO	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1.	Flexible working hours	13	26%
2.	Competitive salary	21	42%
3.	Regular team building activities	12	24%
4.	Access to childcare facilities	4	8%
Total		50	100%

SOURCE: Primary data

INFERENCE

Based on the percentages provided (42%) majority of respondents prioritize a competitive salary, indicating that financial compensation is significant to them. A smaller percentage of respondent access to childcare facilities 8%.

TABLE 4.1.21
TABLE SHOWING WORK PLACE CULTURE

S.NO	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1.	Highly dissatisfied	3	6%
2.	Dissatisfied	5	10%
3.	Neutral	4	8%
4.	Satisfied	12	24%
5.	Highly satisfied	26	52%
Total		50	100.0

SOURCE: Primary data

HYPOTHESIZED ASSOCIATION BETWEEN WITH ORGANISATIONAL CULTURE AND WORK PLACE CULTURE

HO: There is no significant association between with organisational culture and work place culture

H1: There is significant association between with organisational culture and work place culture

USING CHI- SQUARE TEST ORGANISATIONAL CULTURE OF THE RESPONDENTS * TABLE SHOWING WORK PLACE CULTURE OF THE RESPONDENTS Cross tabulation							
Count							
		TABLE SHOWING WORK PLACE CULTURE OF THE RESPONDENTS					Total
		Highly dissatisfied	Dissatisfied	Neutral	Satisfied	Highly satisfied	
TABLE SHOWING ORGANISATIONAL CULTURE OF THE RESPONDENTS	Diversity and inclusion initiatives	3	0	3	5	16	27
	Strict adherence to hierarchy	0	1	0	2	7	10
	Lack of transparency in decision making	0	1	0	0	0	1
	Limited employees benefits	0	3	1	5	3	12
Total		3	5	4	12	26	50

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	22.568 ^a	12	0.032
Likelihood Ratio	21.996	12	0.038
Linear-by-Linear Association	1.619	1	0.203
N of Valid Cases	50		
a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .06.			

INFERENCE

Communication between departments is accepted in organisational culture which inferential testing p- value is more than 0.05 that is statistically accepted of the significance.

TABLE 4.1.23

INDEPENDENT SAMPLE T TEST GENDER AND OVERALL EMPLOYEES JOB PERFORMANCE

INDEPENDENT SAMPLE TEST:

H0 - There is no significance associated between the gender and overall employee job performance.

H1- There is significance between the gender and overall employee job performance.

VARIABLE	GENDER	MEAN	SD	t value	P value
CURRENT JOB OVERALL	Male	2.3438	1.55769	1.683	0.099
	Female	3.1111	1.52966		

$p > 0.05$ is no significant at the 0.05 level (2-tailed)

p value 0.05 there is no significant and no difference between gender and overall employee job performance

INFERENCE

There is no significance different in the overall employee job performance of recognition of employee based on the gender.

FINDINGS

- Majority of the employees belong to the age category of 26-35 and 62% of the employees were male.
- The study reveals that 60% of employees were married.
- About 60% of the employees are graduated.
- About 46% of employee have 1-3years of experience
- Majority 58% of employees were staff.
- The significant portion of respondents reported 52% of the salaries between 10000 20000 indicating a moderate income level among participant.
- The study reveals that 58% of the respondents that agreed the quality of work life is overall happiness of the employees at work.
- The study reveals that 44% of the respondents that conflicts of salary and benefits of non-determination factor.
- The study reveals that only 26% of the respondents that value flexible working hours as a means to achieve better work-life balance.
- A key finding is that a majority of respondents, 60%, prioritize recognition and rewards for achievements in fostering a positive work environment
- If you meant to say that 58% of respondents chose micromanagement as a determinant to job satisfaction, then the finding would suggest that a significant portion of employees perceive micromanagement as a hindrance to their overall job satisfaction.
- The significant finding is that 48% of respondents prioritize an inclusive workplace culture as crucial for engaging employees at work
- The study reveals that 54% of respondents prioritize continuous.

SUGGESTIONS:

- The workplace meets their needs and expectations, consider implementing employee satisfaction surveys to gather feedback regularly and address specific areas where improvements can be made.

- The offering of employees training or workshops on the benefits of social media engagement may help increase participation over time.
- The organisation providing access to online courses, mentorship programs, and cross-training opportunities can help employees develop new skills and advance their careers within the organization.
- Providing mentorship opportunities, job rotation programs, and access to challenging projects can help employees expand their skills and experiences while advancing within the company. Regular communication about available growth opportunities and support for employees in pursuing their career goals.
- The organisation provide more strategies to promote a flexible and collaborative work environment.
- Encourage leadership to be accessible and approachable, welcoming questions and feedback from employees
- The organisation's infrastructure can be improved.

CONCLUSION:

The above study has helped me to conclude that the identification of the measures of quality of life is indeed a difficult task, though there is a sort of common agreement on its concept of employee wellbeing. A happy and healthy employee will give better turnover, make good decision and positively contribute to organizational goal. An assured good quality of work life will not only attract young and new talents but also retain the existing experienced talents. Quality of work life can affect such things as employee's timing, his or her work output, his or her available leaves, etc.

Work life balance must be maintained effectively to ensure that all employees are running at their peak potential and free from stress and strain. So, it is up to the organization to focus on their workers and improve their quality of work life so that attrition, absenteeism and decline in workers. Finally it is very true to say that high degree of QWL lead to job satisfaction which ultimately results in effective and efficient performance.

BIBLIOGRAPHY

REFERENCE:

- Kothari C.R. Research Methodology - Methods and Techniques, new age international (p) Ltd., publishers, New Delhi, Second Edition, 2008.
- Prashanth L.M Human Resource Management< sultan Chand and Sons Publishers, New Delhi, Thirty Fourth Edition, 2005.
- Awathappa. K, Human Resource and Personal Management, Tata Mc Graw Hill, New Delhi, 1999.

WEBSITE REFERENCE:

- www.managementpradise.co
- www.wikipedia.com
- www.chrmglobal.com
- www.businessmanagementideas.com
- www.josjournals.com



**A STUDY ON GREEN HRM PRACTICES AND POLICIES AT SIBAFLO
NATURAL DECORATIONS PRIVATE LIMITED, THOOTHUKUDI**

M. Brightina Livya and S. Janat Jeya Kavitha

Department of Human Resource Management Department, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT:

Green Human Resource Management (Green HRM) is focused on integrating environmental sustainability principles into human resource practices within organizations. It emphasizes environmental awareness, training and development programs on sustainability practices, performance management systems aligned with green goals, and employee engagement initiatives promoting eco-friendly behaviors. The benefits of adopting Green HRM practices are improved cost savings through resource efficiency and a positive impact on the environment. This involves fostering a green mindset among employees, where sustainability is viewed as a core value that guides decision-making at all levels. This cultural shift towards environmental consciousness can lead to a more proactive approach in identifying and implementing eco-friendly practices throughout the organization. This includes sourcing environmentally friendly materials, promoting energy-efficient production processes, and encouraging responsible product disposal and recycling. It sets clear environmental goals and inspires employees to contribute towards a greener future. Furthermore, fostering a culture of innovation enables organizations to continuously explore and implement new technologies and practices that reduce their environmental footprint and create long-term value. By aligning HR practices with green principles, organizations can not only reduce their environmental impact but also enhance their overall competitiveness, reputation, and resilience in a rapidly evolving global landscape.

Keywords: Green HRM Practices, Eco-Friendly HR Policies, Green workplace initiatives, sustainable HRM, Green training and development.

INTRODUCTION:

Green Human Resources Management (GHRM) is a set of policies, practices, and systems that stimulate the green behavior of a company's employees to create an environmentally sensitive, resource-efficient, and socially responsible organization. The private sector plays a fundamental role in stopping climate change. For companies to succeed

and move forward in their sustainability journey, a top-down approach is essential, as is the support of the senior management including People and HR. It is a strategic approach that integrates environmental sustainability principles into various human resource practices within organizations. This innovative concept seeks to harmonize the goals of ecological preservation with traditional HR functions, aiming to create a workplace culture that prioritizes environmental stewardship alongside business objectives. Green HRM involves initiatives such as recruiting environmentally conscious individuals, providing training on sustainability practices, setting environmental performance goals, and rewarding employees for contributing to green initiatives. By incorporating green workplace practices and fostering employee engagement in environmental efforts, Green HRM not only reduces the organization's environmental footprint but also promotes a sustainable business model aligned with global environmental goals. Through its holistic approach, Green HRM endeavors to create a symbiotic relationship between human capital management and environmental responsibility, driving organizations toward a greener and more sustainable future.

GREEN HRM PRACTICES:

- Encourage employees, through training and compensation, to find ways to reduce the use of environmentally damaging chemicals in their products.
- Assist employees in identifying ways to recycle products that can be used for playgrounds for children who don't have access to healthy places to play.
- Designs a company's HRM system to reflect equity, development, and well-being, thus contributing to the long-term health and sustainability of both internal (employees) and external communities.
- Use of job portals of companies for recruitment and custom of telephone, internet, and video interviews, which can lessen the travel requirements of the candidate and affect the paperwork reduction.
- Green HR rewards employees by providing nature-friendly workplace and lifestyle benefits through providing carbon credit equalizers, free bicycles, and pollution-free vehicles for transportation to the workplace to engage employees in green agenda.

GREEN HR POLICIES:

1. Sourcing and acquisition of human resources
2. Green recruitment and selection
3. Orientation
4. Learning and development
5. Green performance management
6. Green compensation and reward management

STATEMENT OF THE PROBLEM:

However, despite the growing awareness of the need for Green HRM practices and policies, there remains a gap in understanding the specific challenges, strategies, and outcomes associated with their implementation within diverse organizational contexts. This study aims to address this gap by thoroughly examining the current landscape of Green HRM practices and policies, exploring the barriers and enablers to their adoption, assessing their impact on organizational performance and employee engagement, and providing actionable insights for organizations seeking to embed sustainability principles into their HRM strategies. By delving into these aspects, this research seeks to contribute to both academic literature and managerial practice, ultimately paving the way for more effective and sustainable HRM approaches in the modern workplace

OBJECTIVES OF THE STUDY:

- To study about Green HRM trends.
- To explore Green HRM practices and policies in the organization.
- To identify the relationship between Green HRM practices with employee motivation, job satisfaction, and organizational commitment.
- To analyze what extent and how HR policies and practices can improve Green HRM.

NEED FOR THE STUDY:

Firstly, as organizations increasingly recognize the importance of environmental sustainability, there is a growing demand for integrating green initiatives into HRM practices. Secondly, studying green HRM practices can help identify the potential benefits, challenges,

and barriers associated with implementing such initiatives, thereby informing decision-making processes for HR professionals and organizational leaders. Furthermore, by examining the impact of green HRM practices on employee attitudes, behaviors, and organizational outcomes, Overall, the need for this study lies in its potential to advance knowledge, inform practice, and contribute to the broader goal of promoting environmental sustainability within organizations.

SCOPE OF THE STUDY:

The scope of study in green HRM encompasses various aspects, including recruitment and selection processes that prioritize candidates with environmental awareness and skills, training and development programs aimed at fostering sustainability competencies among employees, performance management systems that incorporate environmental goals and metrics, and initiatives for promoting eco-friendly workplace behaviors and practices. Additionally, the scope extends to examining the role of leadership in championing sustainability initiatives, the impact of green HRM on employee attitudes, motivation, and well-being, as well as the overall organizational culture and reputation. Furthermore, the scope may involve exploring the alignment of green HRM practices with broader corporate sustainability strategies and examining the potential challenges and barriers to implementing green HRM initiatives effectively. Overall, the scope of study in green HRM is multidimensional, encompassing various HRM functions and their integration with environmental sustainability goals to promote organizational and societal well-being.

COMPANY PROFILE:

Sibaflor Natural Decorations Private Limited is an export-oriented unit with easy access to world-class raw materials. Their company is popular for its design, quality, and product concepts in home decoration. 90% of the products manufactured are in ready-to-retail packaging and they cater to customers all over the world. Sibaflor meets all necessary quality, environmental, health & safety, supply chain security, and legal requirements. Experienced workers 500 and 80+ staff to take care of day-to-day operations.

Sibaflor is committed to achieving a self-reviewing organization in perpetuity by adopting QMS as a way of life. They believe in the importance of the process. Products will be evaluated both by their results and the process adopted. Their focus will be on 'innovating products for the circular economy. They believe in integrating safety, health, and

environmental practices into business activities. They strive to build long-term relationships based on trust and interdependence between, customers, employees, and suppliers.

Manufacturing and supply of natural decorations and aligned products are Rectangle Flower Arrangements, Bowl Potpourri, Acetate Box Potpourri, Round Flower arrangements, Broad Bouquets, Wreath Regular Flower, Lara Stick Bunch, SIBAFLOP Potpourri and Plaster of Paris.

REVIEW OF LITERATURE:

Renwick et al. (2008) specified that distinguished policies in the fields of recruitment, performance management and appraisal, training and development, employment relations and pay and reward are considered powerful tools for aligning employees with an organization's environmental strategy.

Jabbour, Santos, & Nagano (2010) discovered that functional dimensions of human resource management such as job description and analysis, recruitment, selection, training, performance appraisal, and rewards are defined as green HRM. In 2011, Jabbour again defined green HRM as „the level of greening of human resource management practices“ in terms of functional and competitive dimensions of HRM.

Zoogah 2010 defines green training and development as the organizational development of attitudes, behaviors as well as knowledge, and skills among employees to help avert the corrosion of the environment. An important point to note is that there is a strong positive correlation between employee training and the development of organizational performance. It is the role of an organization's HRM department to impart the necessary training developmental skills and knowledge among the employees for them to remain competitive in the job market.

Mandip (2012) thinks that green initiatives within HRM form part of wider programs of corporate social responsibility. Green HR essentially consists of two major elements that are environment-friendly HR practices and the preservation of knowledge capital.

Cherian and Jacob (2012) identified that recruitment, training, employee motivation, and rewards are important human dimensions that contribute to the improvement in employee implementation of green management principles.

RESEARCH METHODOLOGY:

The research was made by the survey by the convenience of the workers. The sampling technique used was convenience sampling. By adopting a random sampling method, a sample of 50 respondents was selected from Sibafloor Natural Decorations Private Limited. And the questionnaire was distributed to get the primary data from them.

DATA COLLECTION:

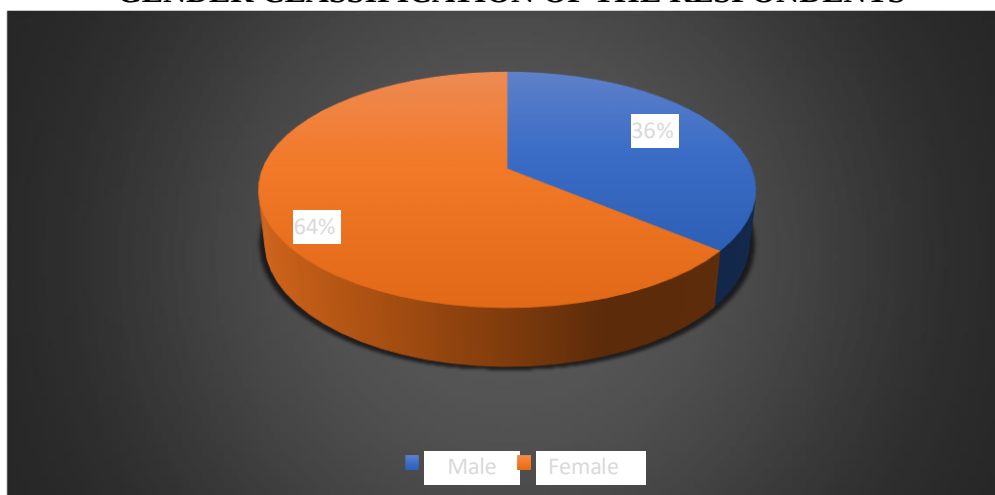
To accomplish the objective of the study both primary data and secondary data were utilized. Primary data refers to the collection of first-hand data. The information was collected from the respondents by A structured questionnaire, Observation, Interview and direct conversation with the measurement. Secondary data refers to the past primary data collected data was collected through Textbooks, Records of industry, Journals from the library, Academic reports, and Webster.

TOOLS FOR ANALYSIS:

After the data have been collected it has to be analyzed the data obtained from the questionnaire is consolidated. Tabulation is a part of technical procedure where classified data are put in the form of tables two tables obtained should be analyzed with statistical techniques and tools so that interpretation would be precise. After the project's completion, the results and suitable suggestions are given the statistical tools used for analyzing the data collected are, Simple percentage analysis, Bar graph, Pie chart, Funnel Diagram, and ANOVA.

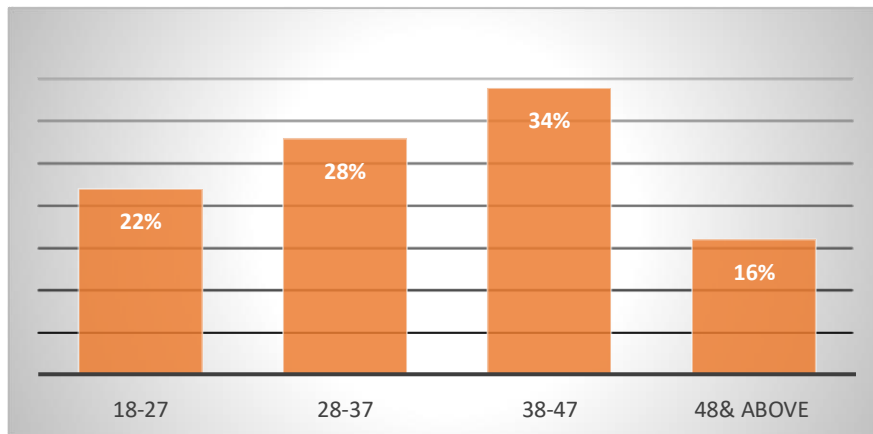
DATA ANALYSIS AND INTERPRETATION:

GENDER CLASSIFICATION OF THE RESPONDENTS



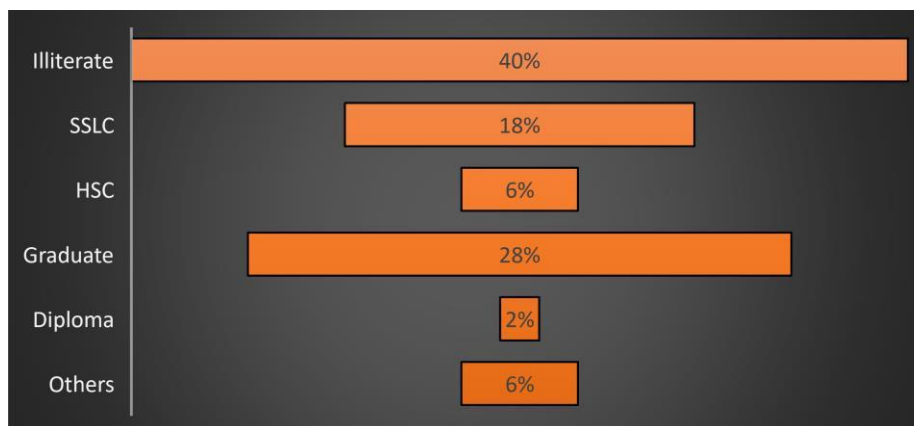
INFERENCE: 64% female respondents and 36% male respondents, it indicates a higher representation of females in the data compared to males.

AGE CLASSIFICATION OF THE RESPONDENTS:



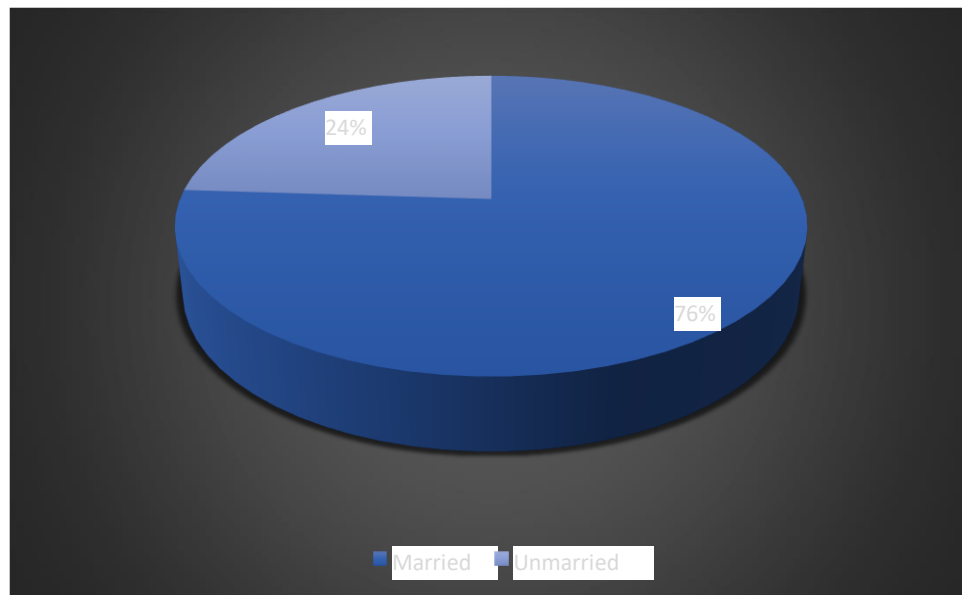
INFERENCE: The highest percentage of respondents falls within the age range of 38-47, comprising 34% of the sample. This indicates a significant presence of middle-aged individuals in the data. The next most represented group is the 28-37 age range at 28%, followed by the 18-27 age range at 22%. The lowest percentage is in the 48 & above category, with 16% of respondents.

EDUCATIONAL CLASSIFICATION OF THE RESPONDENTS



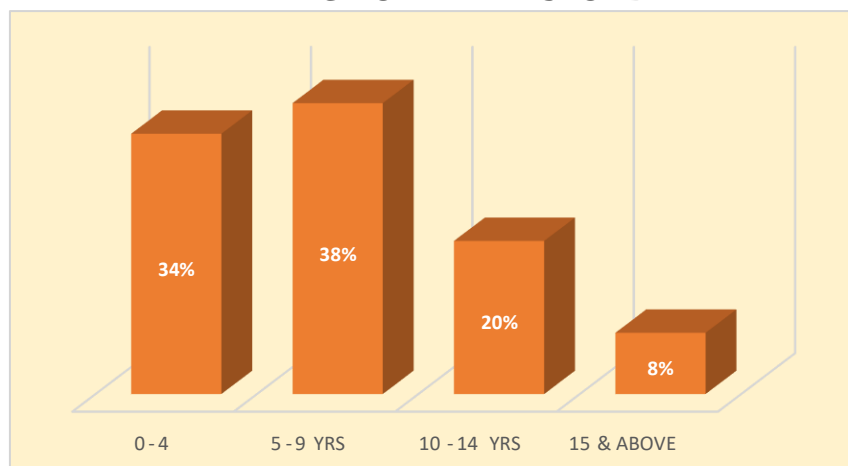
INFERENCE: From the educational classification of the respondents, it is evident that there is a significant portion of the sample that is illiterate, comprising 40% of the respondents. The second most represented group is graduates, accounting for 28% of the sample, followed by SSLC (Secondary School Leaving Certificate) holders at 18%. The low percentages of respondents with HSC (Higher Secondary Certificate), Diploma, and Others suggest a smaller representation of individuals with these educational backgrounds in the sample.

MARITAL STATUS OF THE RESPONDENTS



INFERENCE: The data on the marital status of the respondents indicates that the majority, comprising 76% of the sample, are married. On the other hand, unmarried respondents make up 24% of the sample.

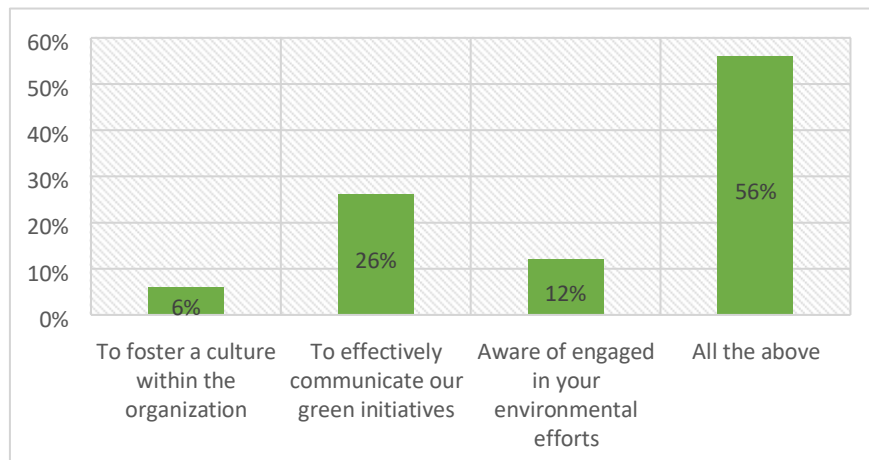
EXPERIENCE OF THE RESPONDENT



INFERENCE: The experience distribution of the respondents shows that the largest proportion, at 38%, falls within the 5-9 years' experience range. The next most represented group is the 0-4 years' experience range, comprising 34% of the respondents, indicating a

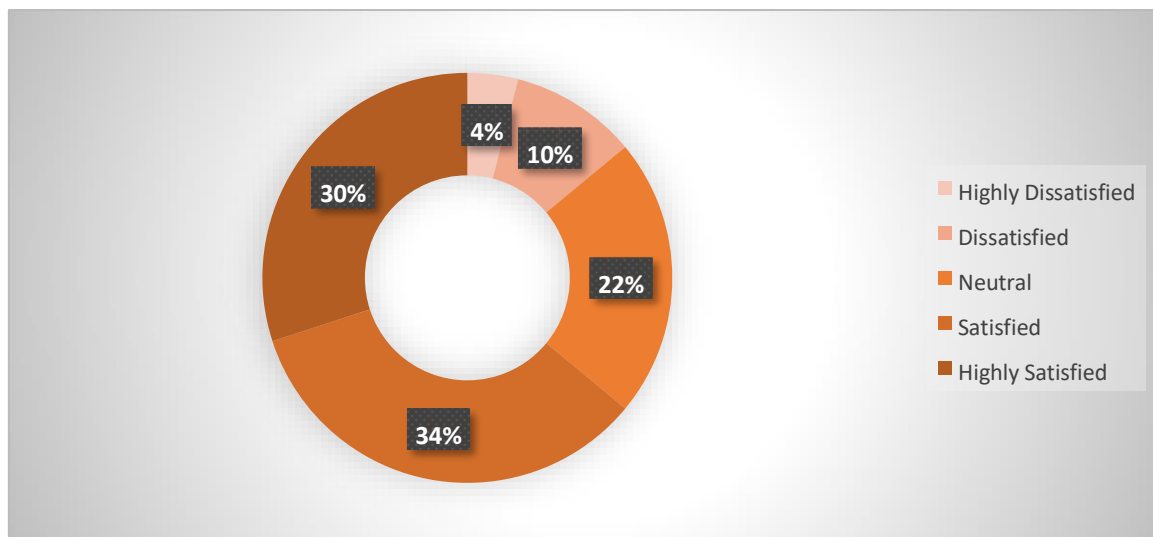
significant portion of relatively early-career participants. The percentages decrease for higher experience categories, with 10-14 years' experience at 20% and 15 years and above at 8%.

NEED FOR GREEN HRM



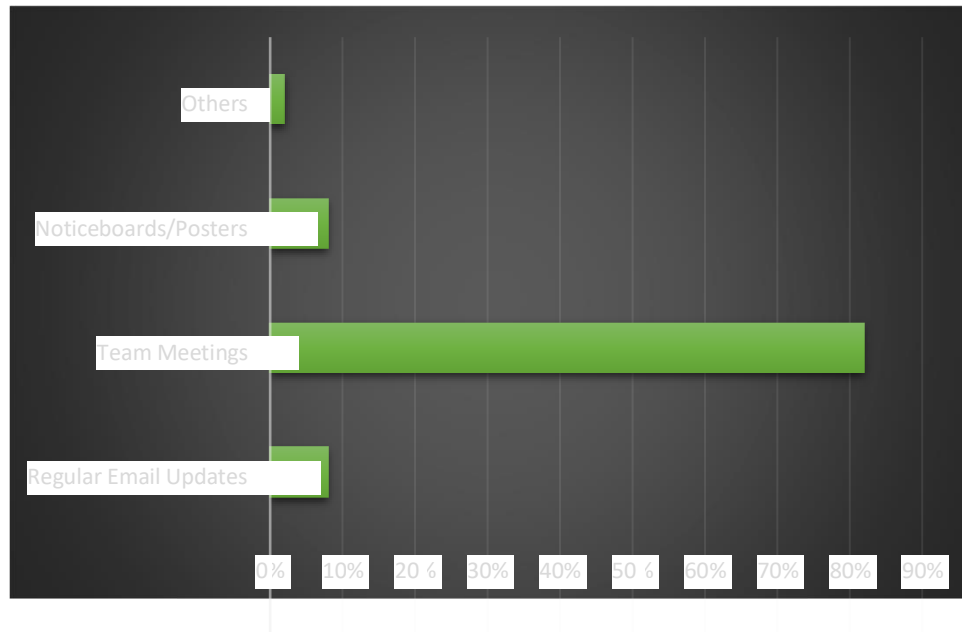
INFERENCE: This is indicated by the desire to foster a culture promoting environmental initiatives (6%), effectively communicate green initiatives (26%), and engage employees in environmental efforts (12%), totaling 56%.

SATISFACTION LEVEL OF CURRENT APPROACH IN GREEN HRM



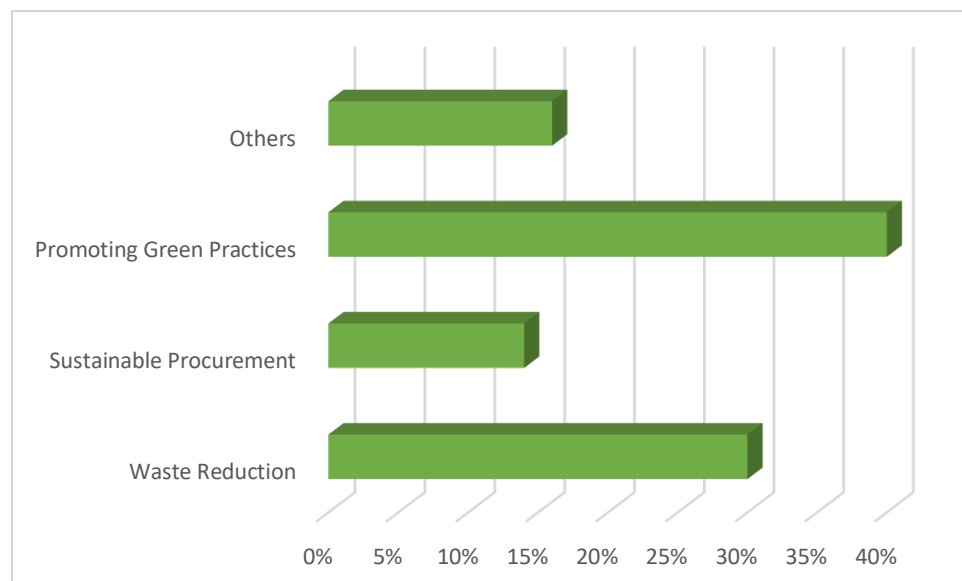
INFERENCE: The inference drawn from these percentages is that while a significant portion of employees (64%) are satisfied or highly satisfied with the current approach in GHRM, there is still a notable percentage (14%) who are dissatisfied or highly dissatisfied. Additionally, a considerable portion (22%) remains neutral.

COMMUNICATION OF GREEN INITIATIVES



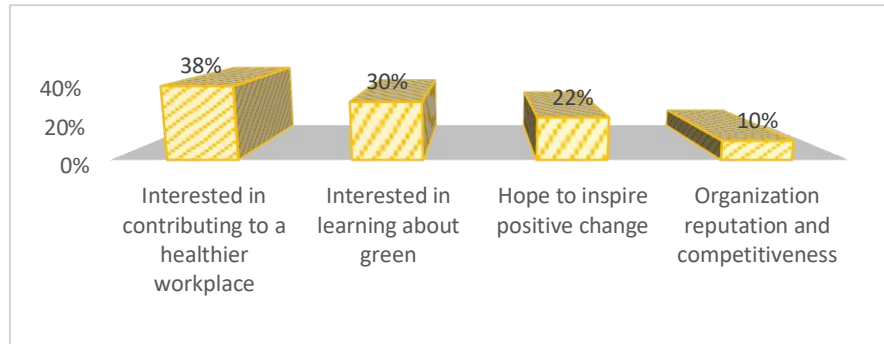
INFERENCE: The inference is that team meetings are the primary method of communicating green initiatives within the organization, with a significant majority (82%) utilizing this approach. Regular email updates and noticeboards/posters are also utilized, others to a lesser extent. Additionally, a small portion (2%) utilize other methods for communication.

REDUCTION OF ENVIRONMENTAL IMPACT



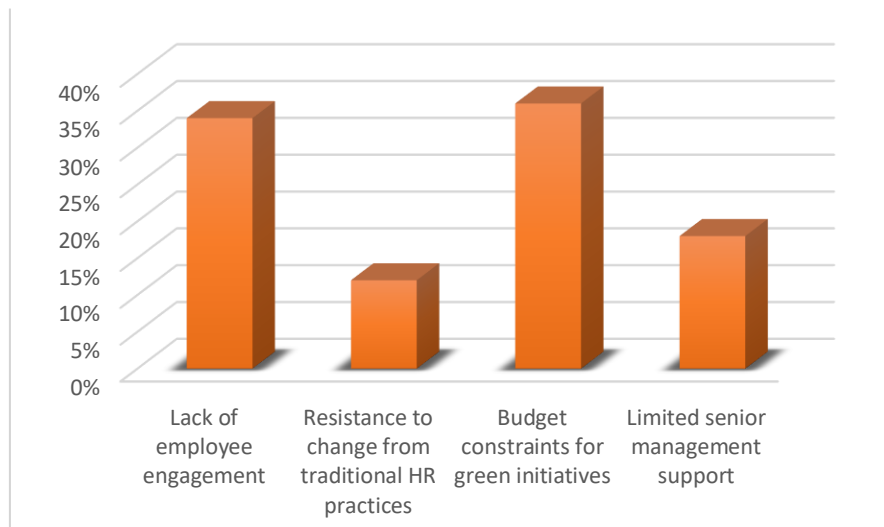
INFERENCE: The highest impact on reducing environmental impact at 40%, followed by waste reduction at 30%, sustainable procurement at 14%, and other methods at 16%.

EMPLOYEE INTEREST LEVEL IN GREEN HRM PRACTICES



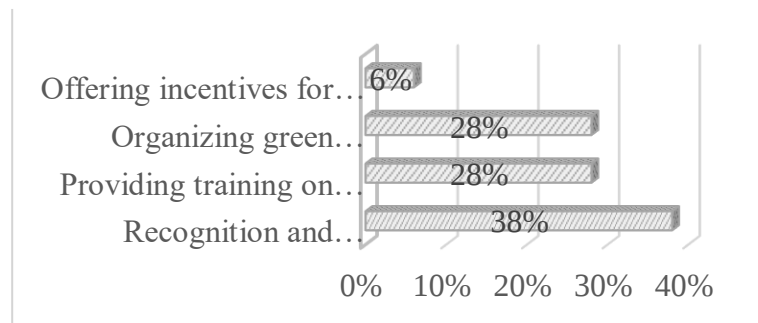
INFERENCE: Employees are interested in contributing to a healthier workplace (38%) and learning about green practices (30%). Additionally, there is a notable percentage (22%) who hope to inspire positive change, indicating a considerable level of interest in environmental sustainability among employees. However, the percentage interested in green practices for organizational reputation and competitiveness is comparatively lower at 10%.

CHALLENGES OF GREEN HRM IMPLEMENTATION



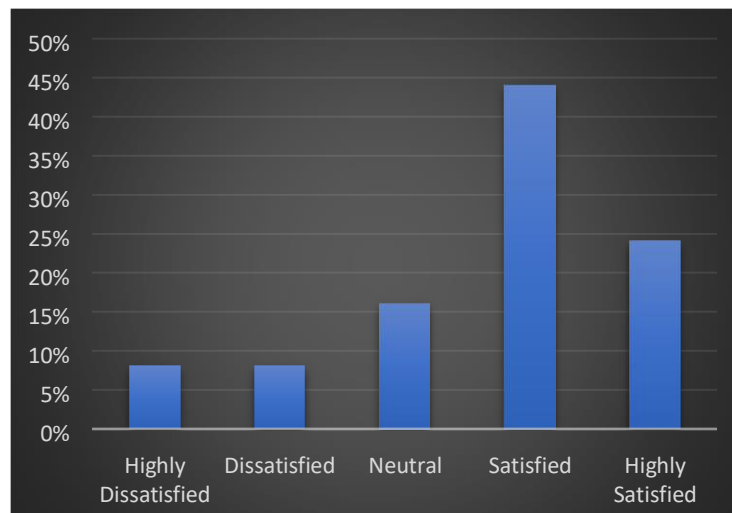
INFERENCE: 36% of respondents indicated this as an obstacle. Lack of employee engagement is also a notable challenge, as indicated by 34% of respondents.

ADAPTATION OF GREEN HRM PRACTICES



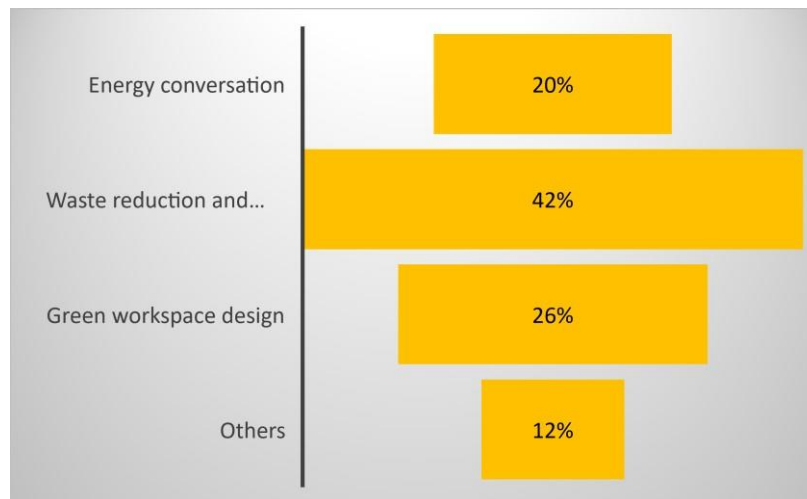
INFERENCE: Based on the provided percentages, it can be inferred that organizations primarily focus on recognizing and rewarding eco-friendly practices (38%) as a key strategy for adopting Green HRM practices. Following closely, providing training on environmental sustainability (28%) and organizing green challenges or competitions (28%) are also significant methods employed to encourage the adoption of green practices among employees.

REWARDS IMPLEMENTING TO DEVELOP ECO-FRIENDLY ORGANIZATION



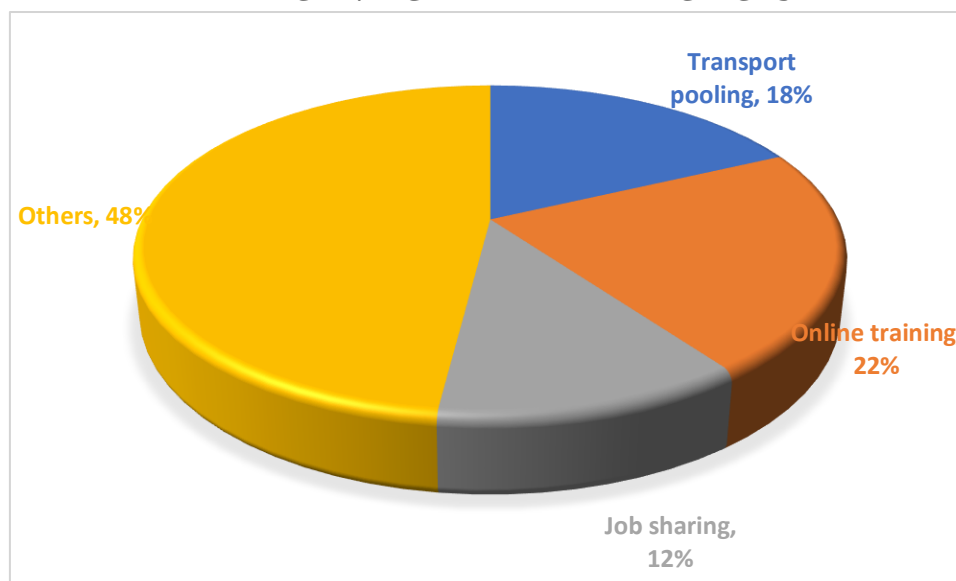
INFERENCE: The data suggests that a significant portion of employees are satisfied or highly satisfied with the rewards implemented to develop an eco-friendly organization. However, there is still room for improvement as there are percentages of employees who are either dissatisfied, highly dissatisfied, or neutral.

OBSERVATION LEVEL OF HR POLICIES OR INITIATIVES



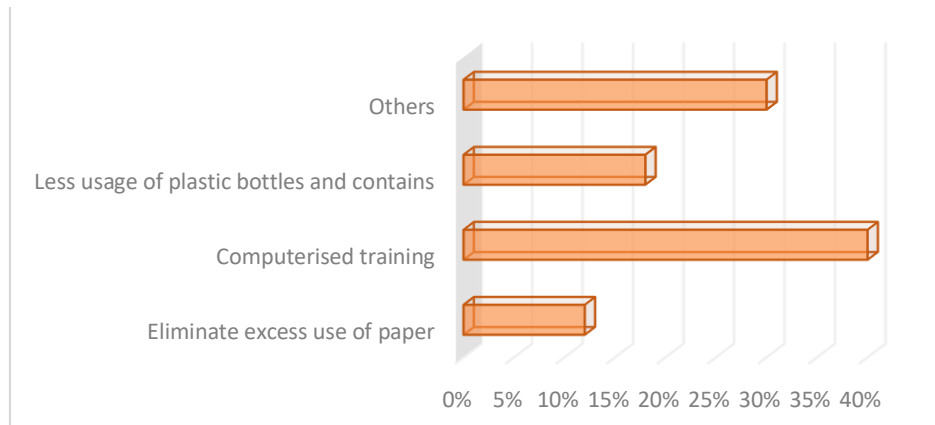
INFERENCE: 42% of respondents indicated their focus on this area. This suggests that organizations are placing a significant emphasis on implementing policies and initiatives related to waste management and recycling as part of their green HRM efforts.

ATTRACTIVE GREEN HRM PRACTICES



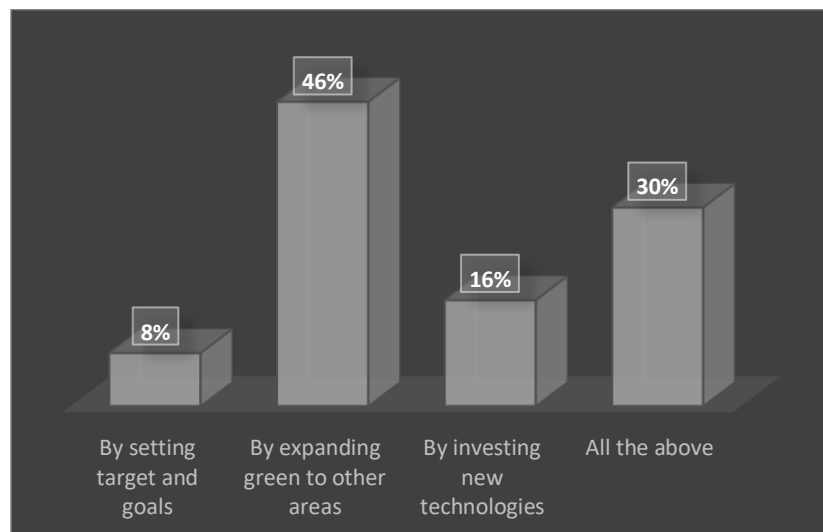
INFERENCE: (48%) find other attractive Green HRM practices. This indicates that there are additional practices or initiatives beyond the specific options mentioned (transport pooling, online training, and job sharing) that are appealing to respondents in terms of promoting sustainability and green practices within the HRM context.

BEST PRACTICE OF GOING GREEN



INFERENCE: (40%) consider computerized training as the best practice for going green. This suggests that leveraging technology to deliver training and educational materials in a digital format is seen as an effective way to reduce paper usage and promote environmentally friendly practices within the organization.

ENHANCING GREEN HRM PRACTICE IN THE FUTURE



INFERENCE: 46% believe that expanding green initiatives to other areas is crucial for enhancing Green HRM practices in the future. This suggests a strategic focus on broadening the scope of environmental initiatives beyond the traditional HR functions, indicating a holistic approach towards sustainability within the organization.

ANOVA- EXPERIENCE AND AGREED STATEMENT OF EMPLOYEES TOWARDS GREEN HRM PRACTICES

H0: There is no significant difference between experience and agreed statement

H1: There is a significant difference between experience and contribution to a positive organizational culture

H2: There is a significant difference between experience and green initiatives toward positive impact on the organization

H3: There is a significant difference between experience and influencing an organization's prestige

H4: There is a significant difference between experience and continued environmental training program

STATEMENTS	EXPERIENCE	MEAN	SD	F VALUE	P VALUE
Contribution to a positive organization culture	0-4	5.0000	0.00000	44.563	0.001
	5-9	4.3684	0.49559		
	10-14	3.8000	0.42164		
	15 & above	3.0000	0.00000		
	Total	4.3600	0.69282		
Green initiatives toward positive impact on the organization	0-4	4.3529	0.49259	99.676	0.001
	5-9	4.0000	0.00000		
	10-14	3.0000	0.00000		
	15 & above	2.0000	0.00000		
	Total	3.7600	0.77090		
Influencing organization prestige	0-4	4.4118	0.50730	52.807	0.001
	5-9	3.2632	0.45241		
	10-14	2.6000	0.51640		
	15 & above	1.5000	0.57735		

	Total	3.3800	1.00793		
Continued environmental training program	0-4	4.2941	0.46967	75.438	0.001
	5-9	3.4211	0.50726		
	10-14	2.1000	0.31623		
	15 & above	1.2500	0.50000		
	Total	3.2800	1.08872		

Note: p-value < 0.05 is significant at the 0.05 level (2-tailed)

p-value > 0.05 is not significant at the 0.05 level (2-tailed)

Interpretation:

The tabulated value is 0.001 for significant difference between experience and contribution to a positive organizational culture (H1), experience and green initiatives toward positive impact on the organization (H2), experience and influencing an organization's prestige (H3), and experience and continued environmental training program(H4) which is lesser than 0.05. Therefore, there is a significant difference between experience and all agreed statements. Hence, the null hypothesis is rejected.

FINDINGS:

- The study reveals that 56% of the respondents agreed with the following, foster a culture promoting environmental initiatives, effectively communicate green initiatives, and engage employees in environmental efforts.
- The analysis reveals that while a significant portion of employees 64% are satisfied or highly satisfied with the current approach in GHRM.
- The majority of team meetings are the primary method of communicating green initiatives within the organization, with a significant majority 82% utilizing this approach
- The study reveals that it appears promoting green practices has the highest impact on reducing environmental impact at 40%.

- It is found that a significant portion of employees are interested in contributing to a healthier workplace at 38%.
- The analysis reveals that budget constraints for green initiatives pose the most significant challenge to implementing Green HRM, with 36% of respondents indicating this as an obstacle.
- It is understood from the study that organizations primarily focus on recognizing and rewarding eco-friendly practices 38% as a key strategy for adopting Green HRM practices.
- It is found that a significant portion of employees are satisfied or highly satisfied with the rewards implemented to develop an eco-friendly organization at 68%.
- It is found that waste reduction and recycling have the highest observation level among HR policies or initiatives, with 42% of respondents indicating their focus on this area.
- The majority of respondents 48% find other attractive Green HRM practices (i.e. transport pooling, online training, and job sharing).
- It is found that a significant majority of respondents 40% consider computerized training as the best practice for going green.
- The analysis reveals that a significant majority of respondents 46% believe that expanding green initiatives to other areas is crucial for enhancing Green HRM practices in the future.

SUGGESTIONS:

- Organizations can ensure that their GHRM approaches not only contribute to environmental sustainability but also to the satisfaction and engagement of their workforce.
- By demonstrating the direct correlation between GHRM practices and the broader benefits to the organization, the environment, and employees themselves, companies can foster a more engaged and motivated workforce that sees the value and actively participates in GHRM initiatives

- Organizations should first conduct a survey or assessment to understand the current commuting habits of their employees and identify the most popular and feasible sustainable transportation options
- By taking a proactive stance in nurturing an environment that values and supports sustainability, organizations can significantly improve employee satisfaction and engagement with green initiatives.
- Integrating time-off incentives into broader employee recognition and reward programs can contribute to a positive organizational culture that values work-life balance, productivity, and sustainability efforts.
- By listening to employee feedback and rewards to their preferences, organizations can create a more positive and effective ecosystem for developing an eco-friendly workplace
- By leveraging enhanced corporate reputation as a key benefit of green HRM integration, organizations can strengthen their brand image, attract top talent, and build longterm relationships with stakeholders who value sustainability.
- By embracing the best practice of eliminating excess use of paper, organizations can not only reduce their environmental footprint but also streamline processes, save costs, and demonstrate their commitment to sustainable business practices.
- By integrating targets and goals into strategic planning processes and performance evaluations, organizations can embed sustainability into their DNA and create a more resilient and responsible business model for the future.
- By prioritizing time and flexibility as essential forms of support for green HRM participation, organizations can empower employees to make a meaningful impact on environmental sustainability while maintaining a healthy work-life balance.

CONCLUSION:

The data reveals a significant interest and positive response towards green initiatives among employees. Key findings indicate that eco-friendly facilities are highly valued by employees. It reduces environmental impact. Moving forward, focusing on expanding green initiatives, setting targets, and investing in new technologies can further enhance the



effectiveness of Green HRM practices. Through fostering a green culture, effective communication of green initiatives, and integrating eco-friendly practices into HR policies, organizations can achieve multiple benefits. These benefits include improved employee wellbeing, reduced environmental impact, and enhanced corporate reputation. It increasingly vital role in shaping a greener and more responsible future for businesses and society.

BIBLIOGRAPHY:

- <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-2370.2011.00328.x>
- <https://www.tandfonline.com/doi/abs/10.1080/09585191003783512>
- <https://journals.sagepub.com/doi/10.1177/239700221102500204>
- [https://www.researchgate.net/publication/267781578 Green Marketing A Study of Consumers' Attitude towards Environment Friendly products](https://www.researchgate.net/publication/267781578_Green_Marketing_A_Study_of_Consumers'_Attitude_towards_Environment_Friendly_products)
- <https://www.questjournals.org/jrhss/papers/vol11-issue7/11079599.pdf>

A STUDY ON CONFLICT MANAGEMENT AT VELAVAN HYPER MARKET THOOTHUKUDI

G. GEETHA PRIYA DHARSHINI and S. JANAT JEYA KAVITHA

Department of Human Resource Management, St. Mary's College(Autonomous),

Thoothukudi

Affiliated to ManonmaniamSundaranar University, Tirunelveli, Tamilnadu

ABSTRACT:

The main purpose of the study is to explore the process of resolving disputes or disagreements between individuals or groups in a constructive manner. It involves techniques and strategies aimed at addressing the underlying issues causing the conflict and finding mutually acceptable solutions. Conflict management can include communication skills, negotiation, mediation, and sometimes, compromise or collaboration to reach a resolution. The role of implementing conflict management is it encourages communication and empathy and preserve relationships. In this study statistical tools such as ANOVA and chi-square has been used to examine the results and determine any significant difference or relationship between variables with validate research questionnaire. The purpose on the study of conflict management is to resolve conflicts or disagreements and it helps individuals and organizations develop essential skills such as negotiation, mediation and problem solving which are valuable in various contexts. The successful conflict management results in the resolution of the conflict, with parties reaching an agreement or compromise that addresses the underlying issues. By setting standards, establishing processes and monitoring performance, Velavan Hyper Market can achieve operational excellence and stay ahead in competitive market

KEYWORDS: Conflict Management , stress Management, Velavan hyper market

INTRODUCTION:

Conflict management is the practice of identifying and addressing sources of conflict within an organization or between individuals in a constructive manner. Effective conflict management involves understanding the root causes of conflicts, implementing strategies to prevent or mitigate them, and fostering communication and collaboration to resolve disagreements peacefully. By promoting a culture of openness, empathy, and respect, organizations can navigate conflicts productively, leading to increased team cohesion,

innovation, and overall success. Conflict management is the practice of being able to identify and handle conflicts sensibly, fairly, and efficiently. Since conflicts in a business are a natural part of the workplace, it is important that there are people who understand conflicts and know how to resolve them. This is important in today's market more than ever. Everyone is striving to show how valuable they are to the company they work for and at times, this can lead to disputes with other members of the team.

FEATURES OF CONFLICT MANAGEMENT:

- 1) **Identification and Understanding:** Conflict management involves recognizing and understanding the sources, nature, and underlying causes of conflicts.
- 2) **Communication:** Effective communication is crucial for addressing conflicts, facilitating, dialogue, and clarifying misunderstandings between parties involved.
- 3) **Negotiation:** Conflict management often involves negotiation to find mutually acceptable solutions and reach agreements that satisfy the interests of all parties.
- 4) **Mediation:** In cases where direct negotiation is challenging, a neutral third party may facilitate mediation to help parties resolve conflicts and reach a compromise.
- 5) **Collaboration:** Conflict management encourages collaborative problem-solving, where parties work together to find creative and sustainable solutions that address the root causes of conflicts.
- 6) **Conflict Resolution Strategies:** Various conflict resolution strategies, such as compromise, win-win solutions, or problem-solving approaches, are employed based on the nature and complexity of the conflict.
- 7) **Emotional Intelligence:** Conflict management requires emotional intelligence to manage emotions, empathize with others' perspectives, and maintain a constructive approach during discussions.
- 8) **Conflict Prevention:** Proactive conflict management involves implementing measures to prevent conflicts from escalating or recurring, such as establishing clear communication channels, setting expectations, and fostering a positive organizational culture.
- 9) **Flexibility:** Effective conflict management requires flexibility to adapt strategies and approaches based on the specific context, dynamics, and needs of the parties involved.

- 10) **Ethical Considerations:** Conflict management practices should adhere to ethical principles, fairness, and respect for the rights and dignity of all individuals involved.

SCOPE OF THE STUDY:

- The study was done at Velavan Hyper Market Pvt Ltd, the approach to the study has been made from the viewpoint of the employees.
- The conflict management includes identifying, analyzing, and resolving conflicts through effective communication, mediation, problem-solving, prevention strategies, organizational development, training, and continuous evaluation and adjustment.
- It helps in understanding and managing emotions to navigate conflicts constructively.
- It helps in establishing mechanisms to track conflicts, interventions, and outcomes for organizational learning and accountability.

REVIEW OF LITERATURE:

- Rahim et al. (2023) The authors evaluate the effectiveness of conflict management training programs in enhancing individuals' conflict resolution skills and improving organizational outcomes, such as employee satisfaction and performance.
- John and Mannix (2022) This study focus on organizational approaches to conflict management, including the implementation of formal conflict resolution policies, alternative dispute resolution mechanisms, and the role of leadership in fostering a culture of constructive conflict resolution.

OBJECTIVES OF THE STUDY:

- To study major cause of conflict
- To cultivate interpersonal communication skills
- To analyse the various conflict resolving strategies
- To maintain positive relationship between employee using conflict management

CONSTRUCTION OF TOOLS:

The researcher had a discussion with a group of students. Based on the discussion the researcher constructed a questionnaire. Then it was circulated to respondents, 50 samples were distributed among respondents.

SAMPLING DESIGN:

The data collected are original in nature. The sampling technique used in this study was convenience sampling.

TABLE 1.1

TABLE SHOWING THE CONFLICT LEVEL OF THE ORGANIZATION			
S.NO	PARTICULARS	NO RESPONDENTS	OF PERCENTAGE
1	Labour Level	41	82%
2	Middle Level	1	2%
3	Top Level	8	16%
	Total	50	100%

INFERENCE:

From the above chart, it can be defined that 82% of the respondents stated that conflict occurs in labour level of the organization and 2% of the respondents stated that conflict occurs in middle level of the organization.

TABLE 1.2

TABLE SHOWING THE ROLE OF EMPATHY IN RESOLVING CONFLICTS			
S.NO	PARTICULARS	NO RESPONDENTS	OF PERCENTAGE
1	Highly important	37	74%
2	Neutral	8	16%

3	Somewhat important	4	8%
4	Not important	1	2%
	Total	50	100%

INFERENCE:

From the above chart, it can be inferred that 74% of the respondents feel that the role of empathy is highly important in resolving a conflicts and 2% of the respondents feel that the role of empathy is not important in resolving a conflicts.

TABLE 1.3

TABLE SHOWING THE COMMUNICATION STYLE WHEN INTERACTING WITH DIFFERENT PERSONALITIES

S.NO	PARTICULARS	NO OF RESPONDENTS	PERCENTAGE
1	Always	9	18%
2	Most of the time	5	10%
3	Sometimes	36	72%
	Total	50	100%

INFERENCE:

From the above chart, it can be inferred that 72% of the respondents sometimes adopt to communication style when interacting with different personalities and 10% of the respondents most of the time adopt to communication style when interacting with different personalities.

TABLE 1.4

TABLE SHOWING THE RESPONDING LEVEL TOWARDS CONFLICT			
S.NO	PARTICULARS	NO OF RESPONDENTS	PERCENTAGE
1	Rarely	1	2%
2	Very Rarely	1	2%
3	Often	2	4%
4	Sometimes	15	30%
5	Always	31	62%
	Total	50	100%

INFERENCE:

From the above chart,it can be inferred that 62% of the respondents always see conflict from both sides and 2% of the respondents very rarely see conflict from both sides.

TABLE 1.5

TABLE SHOWING INITIATION OF CONVERSATION WITH COLLEAGUES			
S.NO	PARTICULARS	NO OF RESPONDENTS	Percentage
1	Somewhat Comfortable	3	6%
2	Comfortable	14	28%
3	Somewhat	3	6%
4	Very Comfortable	30	60%
	Total	50	100%

INFERENCE:

From the above chart,it can be inferred that 60% of the respondents are very comfortable of initiating conversations with colleagues and 6% of the respondents are somewhat uncomfortable of initiating conversations with colleagues.

FINDINGS OF THE STUDY:

- The study reveals that 82% of the respondents stated that conflict occurs in labour level of the organization.

- The study reveals that 50% of the respondents always pay attention to non- verbal cues such as body language and facial expression.
- The study reveals that 60% of the respondents are very comfortable of initiating conversation with colleagues.
- It is found that 44% of the respondents respond sometimes when someone disagree with their opinion or viewpoint.
- From the study it is found that 50% of the respondents lean towards strongly avoid strategy when faced with conflict.
- It is understood from the study that 44% of the respondents always prefer compromise when solving the problem and move on.
- The study reveals that 42% of the respondents sometimes say very little and leave when finding themselves in an argument.
- Majority 62% of the respondents always see conflicts from both sides.
- From the study it is found that 42% of the respondents sometimes try to meet the expectations of others.
- The analysis reveals that 32% of the respondents sometimes try to negotiate towards problem arising situations in organization.
- It is found that 40% of the respondents rarely avoid hard feelings by keeping their disagreements with others in the organization.
- From the study it is found that 50% of the respondents always actively listen to others without interrupting.
- It is found that 74% of the respondents feel that the role of empathy is highly important in resolving a conflict.
- The analysis reveals that 72% of the respondents sometimes adopt to communication style when interacting with different personalities or cultural backgrounds.

SUGGESTIONS:

- Effective communication goes a long way in preventing conflicts.
- Listen carefully what the other person is saying and then give your comments.
- Never be rigid on any point, instead be flexible and try to find out an alternative.
- Stay Open-Minded.

- Analyse the conflict. This will help clarify the specific problem.
- Encourage others who are in conflict to deal directly with the person they are in conflict with.
- Avoid interrupting the other person.
- Ask questions to clarify your understanding.

CONCLUSION:

Effective conflict management is most important in any organization to ensure smooth operations and maintain a positive work environment. By fostering open communication, encouraging empathy and understanding, implementing fair and transparent processes, and promoting collaboration, organizations can successfully navigate conflicts and turn them into opportunities for growth and innovation. Ultimately, proactive conflict management strategies not only resolve disputes but also contribute to the overall success and well-being of the organization and its members.

Investing in conflict management leads to stronger team cohesion, increased productivity, and higher employee satisfaction. By acknowledging the inevitability of conflicts and addressing them constructively, organizations can cultivate a culture of respect, trust, and resilience. Embracing diversity of perspectives and leveraging conflict as a catalyst for positive change enables organizations to adapt, evolve, and thrive in an ever-changing world.

REFERENCE:

- David Liddle(2017) Managing Conflict.
- Ana Alice Vilas Boas(2018) Organizational Conflict.
- Rosalie Puiman(2019)The Mindful Guide to Conflict Resolution.

REFERENCE WEBSITES:

- www.wikipedia.com
- www.shrm.gov

A STUDY ON TALENT MANAGEMENT AT VELAVENHYPERMARKET PRIVATE LIMITED, THOOTHUKUDI.

R.Kanagapushbam and S.Janat Jeya Kavitha

Department of Human Resource Management, St. Mary's College(Autonomous), Thoothukudi
Affiliated to ManonmaniamSundaranar University, Tirunelveli, Tamilnadu.

ABSTRACT

Talent management has emerged as a critical function within organizations aiming to optimize their human capital for sustained success in today's dynamic and competitive business landscape. This paper provides an overview of talent management, exploring its significance, key components, and strategies employed by organizations to attract, develop, and retain top talent. The discussion encompasses talent acquisition, performance management, learning and development initiatives, succession planning, and employee engagement practices. Furthermore, the paper examines the role of technology in facilitating talent management processes and addresses the challenges organizations face in effectively managing their talent pool. Through a comprehensive review of the literature and case studies, this paper underscores the importance of strategic talent management in driving organizational performance and achieving long-term growth objectives. Additionally, it highlights emerging trends and future directions in talent management practices, emphasizing the need for continuous adaptation and innovation to meet evolving workforce dynamics and business demands in VELAVAN HYPERMARKET PVT. LTD.,

KEYWORDS: Talent Management

INTRODUCTION

Talent management refers to the strategic process of attracting, developing, retaining, and deploying skilled individuals within an organization to meet current and future business objectives. It encompasses various HR activities aimed at maximizing the potential of employees and ensuring that the organization has the right people with the right skills in the right positions at the right time. The key elements of talent management include recruitment, performance management, training and development, succession planning, and employee engagement. An effective talent management can contribute significantly to organizational success by fostering a

motivated and skilled workforce capable of driving innovation, productivity, and competitiveness.

FEATURES OF TALENT MANAGEMENT

Recruitment and Selection: Identifying and attracting skilled individuals through effective recruitment strategies and selection processes.

Onboarding and Orientation: Providing new hires with the necessary information, resources, and support to integrate into the organization smoothly.

Training and Development: Offering opportunities for continuous learning and skill development to enhance employee capabilities and performance.

Performance Management: Setting clear expectations, providing regular feedback, and evaluating employee performance to drive productivity and growth.

Succession Planning: Identifying and developing potential future leaders within the organization to ensure continuity and sustainability.

Career Development: Supporting employees in mapping out their career paths and providing opportunities for advancement and growth.

Employee Engagement: Fostering a positive work environment where employees feel valued, motivated, and committed to the organization's goals.

Talent Analytics: Utilizing data and analytics to identify trends, make informed decisions, and optimize talent management strategies.

Diversity and Inclusion: Promoting diversity and inclusion initiatives to ensure a diverse workforce and foster innovation, creativity, and different perspectives.

Talent Retention: Implementing strategies to retain top performers and key talent, such as competitive compensation, benefits, and opportunities for advancement.

SCOPE OF THE STUDY:

- Identifying and assessing potential talent within the organization.
- Designing training programs and career development plans.

- Establishing processes for identifying and developing future leaders.
- Developing policies and practices to foster employee engagement.
- Addressing diversity and inclusion challenges within the workforce.
- Utilizing data analytics to assess talent-related trends.
- Providing opportunities for leadership development.
- Managing talent across different geographic locations and cultures.
- Ensuring compliance with legal requirements and ethical standards.
- Managing organizational changes and transitions effectively.

REVIEW OF LITERATURE

Sousa, B., Ferreira, J. J. M., Jayantilal, S., and Dabic, M. (2023) conducted a systematic literature review on global talent management. Their study explored talents, mobility, and global experiences in the context of talent management

A study by Emerald (2022) aims to identify and conceptualize talent management functions by combining management and human resources functions. It also classifies common talent management strategies based on these functions.

Kravariti, F., Voutsina, K., Tasoulis, K., Dibia, C., and Johnston, K. (2021) conducted a systematic literature review specifically focusing on talent management in the hospitality and tourism industry.

OBJECTIVE OF THE STUDY :

- To measure the effectiveness of talent initiatives through metrics such as employee retention, satisfaction, and performance.
- To attract skilled and qualified individuals to the organization.
- To improve employee performance through target training, coaching, and feedback mechanisms.
- To study the rewards and recognition philosophy(Talent retention philosophy)

CONSTRUCTION OF TOOLS:

The researcher discussed this with a group of employees. Based on the discussion the researcher constructed a questionnaire. Then it was circulated to respondents, and 50 samples were distributed among respondents.

SAMPLING DESIGN:

By adopting a random sampling method, a sample of 50 respondents was selected from Velaven Hypermarket. The questionnaire was distributed to get the primary data.

TABLE 4.1.13

TABLE SHOWING THE CURRENT POSITION OF THE EMPLOYEES

S.NO	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1	Not at all	1	2%
2	Slightly	8	16%
3	Neutral	25	50%
4	Moderately	12	24%
5	Extremely	4	8%
	Total	50	100%

Source: primary data

INFERENCE:

Referring to the data provided, it can be inferred that 2% of the respondents perceived the current position of the employees as not at all significant, while 16% regarded it as slightly important. Additionally, 50% of respondents remained neutral regarding its importance. However, when considering moderate importance, 24% of employees viewed it as extremely significant, with an additional 8% of the respondents sharing this perspective.

TABLE:4.1.8

HYPOTHESIZED RELATIONSHIP BETWEEN AGE CLASSIFICATION OF THE RESPONDENTS AND TALENT ENGAGEMENT INITIATIVES OFFERED BY THE ORGANISATION.

Null hypothesis (H_0):

The hypothesis states that there is no significant difference between the means of the two groups being compared.

Alternative hypothesis (H_1):

The hypothesis states that there is a significant difference between the means of the two groups being compared.

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.444 ^a	9	0.695
Likelihood Ratio	5.364	9	0.801
Linear-by-Linear Association	0.317	1	0.573
No of Valid Cases	50		

Source: Primary data

a. 13 cells (81.3%) have an expected count of less than 5. The minimum expected count is 10.

INFERENCE :

The interpretation of the results suggests that the talent engagement initiative offered by the organization did not yield any significant impact, regardless of the age of the participants. This implies that the initiative may not have effectively engaged or retained talent within the organization.

TABLE 4.1.9
ANOVA TABLE OF EFFECTIVE OF TALENT COMPARING WITH EMPLOYEE EXPERIENCE

S.NO	ANOVA		SUM OF SQUARES	DF	MEAN SQUARE	f	Sig.
1	OVERALLTALENT	Between	0.736	2	0.368	0.866	0.427

	DEVELOPMENT PROGRAMS IN THE ORGANISATION	Groups					
		Within Groups	19.984	47	0.425		
		Total	20.720	49			
2	THE CAREER GOALS OF THE ORGANISATION	Between Groups	1.622	2	0.811	0.953	0.393
		Within Groups	39.998	47	0.851		
		Total	41.620	49			
3	CURRENT ROLE AND RESPONSIBILITIES	Between Groups	1.193	2	0.596	1.058	0.355
		Within Groups	26.487	47	0.564		
		Total	27.680	49			
4	EMPLOYEES PERFORMANCE IMPROVEMENT	Between Groups	1.512	2	0.756	1.395	0.258
		Within Groups	25.468	47	0.542		
		Total	26.980	49			

Source: Primary data

INFERENCE:

Employees' performance and improvement moderately impact the outcome (0.258), Current roles and responsibilities have a stronger influence (0.355), Career trajectory within the organization plays a substantial role (0.393), and The overall talent program demonstrates the most substantial influence (0.427). Results indicate that the organization's talent program has the

greatest impact, followed by career trajectory, current role and responsibilities, and employees' performance and improvement level.

TABLE 4.1.10

COMPARING GENDER VARIANCES IN ORGANIZATIONAL EXPECTATIONS AND GOALS

Null hypothesis (H_0): The hypothesis states that there is no significant difference between the means of the two groups being compared.

Alternative hypothesis (H_a): The hypothesis states that there is a significant difference between the means of the two groups being compared.

S.NO	Particulars	Gender	Mean	S.D	t value	P value
1	EXPECTATIONS AND GOALS OF THE ORGANISATION	Male	3.5600	0.76811	2.258	0.029
		Female	4.0400	0.73485		

Source: primary data

INFERENCE:

The significant results of the analysis comparing expectations and goals of the organization between males and females indicate a statistically significant difference. This suggests that there are notable distinctions in perceptions or alignment regarding organizational expectations and goals between males and females in the study.

FINDINGS OF THE STUDY :

- From the study it is found that 50% of the respondents felt that their skills and talent are being utilized in their current position.
- It is found that the majority 46% of respondents believe that their experience and skills are aligned with the requirements of the role.

- The analysis reveals that the comprising of 42% of the respondents perceive the growth and advancement opportunities offered by this role.
- From the study it is found that 60% of the respondents are confident in making a meaningful contribution to their organization.
- It was found that 60% of respondents agreed with the importance of teamwork and collaboration in the work environment.
- The analysis reveals that 30% of employees viewed it as quite important in rewarding and recognizing employee motivation.
- It was found that 44% of employees mentioned they received rewards and recognition from the organization.
- From the study it is found that 34% of the respondents maintain a neutral stance in their organization for the criteria of rewards and recognitions.
- The analysis reveals that 46% of the respondents felt supportive and inclusive work environment contributes to the effectiveness of rewards and recognition programs.

SUGGESTIONS

- The organization should ensure that job roles are clearly defined and aligned with the skills and talents of the employees. When employees see a direct connection between their abilities and the tasks assigned to them, they are more likely to feel valued and engaged.
- Provide detailed and transparent job descriptions outlining the required skills, qualifications, and experience for the role. This clarity helps candidates understand how their background aligns with the position.
- Provide clear information about potential career paths within the organization, including advancement opportunities associated with the role.
- Ensure that employee have a clear understanding of their roles and responsibilities, and how their contributions align with organizational goals.
- Providing clarity on expectations helps individuals feel confident in their ability to fulfill their duties effectively.
- Communicate team goals and objectives to ensure that every employee understands their role in achieving them.

- Recognize employees for their achievements and contributions to the organization. This could be through verbal praise, written commendations, or public acknowledgment during team meetings or company-wide events.
- Provide a range of rewards to accommodate different preferences and motivations. This might include monetary bonuses, gift cards, extra vacation days, flexible work hours, or opportunities for professional development.
- Acknowledge the specific achievements of employees. Rather than generic statements, highlight the unique contributions each employee has made to the organization's success.
- Periodically review and update the criteria for rewards and recognition to reflect changing organizational goals and priorities.
- Ensure that rewards and recognition programs are accessible to all employees, regardless of their background, identity, or position within the organization. This includes considering factors such as language barriers, disabilities, and cultural differences when designing and implementing these programs.

CONCLUSION

In conclusion, effective talent management is crucial for organizations to thrive in today's competitive business landscape. By aligning talent strategies with business objectives, focusing on employee development, promoting diversity and inclusion, embracing technology, offering competitive compensation and benefits, creating a positive employee experience, promoting talent mobility, building strong employer branding, fostering leadership development, and measuring and evaluating talent management practices, organizations can attract, develop, and retain top talent to drive success. A comprehensive talent management approach not only helps in recruiting the right people but also ensures their ongoing development and engagement within the organization. By investing in talent, organizations can build a skilled workforce that is adaptable, innovative, and capable of driving growth and achieving long-term objectives. Ultimately, talent management is not just an HR function but a strategic imperative that requires the commitment and involvement of leadership and stakeholders across the organization. By prioritizing talent management and implementing best practices, organizations can position themselves for sustained success in an ever-evolving business environment.

REFERENCE:

- "Effective Talent Management: Aligning Strategy, People and Performance" by Josh Bersin
- "Strategic Talent Management: Contemporary Issues in International Context" edited by Vlad Vaiman and Charles M. Vance.

WEBSITE:

- <http://www.tutorialpoint.com>talentmanagement>introhrm>
- <http://www.adp.com>articles>andinsights>articles>

A STUDY ON EFFECTIVENESS OF EMPLOYEE RETENTION STRATEGIES AT SIBAFLORE NATURAL DECORATIONS PRIVATE LIMITED., THOOTHUKUDI

J.Maria Antony Mahima and S. Janat Jeya Kavitha

Department of Human Resource Management, St. Mary's college (Autonomous), Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India

ABSTRACT

Employee retention is a challenging concern of the organization. This study stressed on employee retention strategies. Employees are the assets of the organization. To retain skilful and committed employees in the organization, management should take care of employee satisfaction. Find out the reasons of employee turnover and overcome this. The purpose of this study is to prove how employee retention is essential in this day and age, and if the organizations are not awake to the situation and immediate actions are not taken to that effect, what repercussions lay ahead and how they would affect the organization and the industry. Research says that most of the employees leave an organization out of frustration and constant friction with their superiors or other team members. In some cases, low salary, lack of growth prospects and motivation compel an employee to look for a change. The management must try its level best to retain those employees who are really important for the system and are known to be effective contributor.

KEYWORDS: Employee retention, Employee effectiveness, Employee strategy

INTRODUCTION

“ Employee retention is the conscious and deliberate efforts to retain quality individual on the company payroll. State otherwise, it is the proactive moths utilized by successful organization to stop the drain of company profits caused by excessive employee turnover”. HERMAN

One of the greatest challenges in today's business world is to stay up to speed in a time of technological growth. Fundamental changes are taking place in the work force and the work place that promise to radically alter the way organization relate to their employees. As we hurl ahead at an increasing pace every field, employee retention becomes a concern for all organization at the present strong job market.

There are a great number of employment opportunities for talented professionals. It has been found out that, higher the skills of the employees, the greater the demand for their Services. Hiring and retaining good employees have become the chief concerns of nearly every organization in every industry. The organization that decided to proactively fulfil those needs will become the dominant players in their respective markets.

Hence employee retention is a very important issue that organization must tackle. Employee retention is a process in which the employees are encouraged to remain with the organization for the maximum period of time or until the completion of the project. An employee retention can also be considered as a business management term referring to efforts by employers to retain current employees in their workforce.

EMPLOYEE RETENTION STRATEGIES:

Employee Retention Strategies' goal is to help organizations see the underlying contributors to retention and make the essential changes to build lasting, sustainable retention-rich cultures.

The basic practices kept in mind in the employee retention strategies are:

- Hire the right people in the first place.
- Empower the employees and give the employees the authority to get things done.
- Make employees realize that they are the most valuable asset of the organization.
- Have faith in them, trust and respect them
- Provide them information and knowledge.
- Keep providing them feedback on their performance.
- Recognize and appreciate their achievements.
- Keep their morale high.
- Create an environment where the employees want to work and have fun.

Employee Retention Strategies are broadly classified under the following:

1. Compensation

2. Environment

3. Growth

4. Relationship

5. Support

Compensation:

Compensation constitutes the largest part of the employee retention process. The employees always have high expectations regarding their compensation packages. Compensation packages vary from industry to industry. So an attractive compensation package plays a critical role in retaining the employees. Compensation includes salary and wages, bonuses, benefits, stock options, allowances, insurances, vacations, etc.

Environment:

Employee retention is about managing people. If an organization manages people well, employee retention will take care of itself. Organizations should focus on managing the work environment to make better use of the available human assets. People want to work for an organization which provides:

Appreciation for the work done

Ample opportunities to grow

A friendly and cooperative environment

A feeling that the organization is second home to the employee.

Growth:

Employees work in an organization to achieve their personal goals as well. Organizations cannot keep aside the individual goals of employees' and foster organizations goals. Employees' priority is to work for themselves and later on for the organization. If he's not satisfied with his growth, he'll not be able to contribute in the organization's growth.

Relationship:

“Employees leave their bosses, and not their jobs”, this is a very common saying, which is considering the fact that relationship with the management and the peers becomes often the reason for an employee to leave the organization. The management is sometimes not able to provide an employee a supportive work culture and environment in terms of personal or professional relationships.

Support:

Lack of support from management can sometimes serve as a reason for employee retention. The supervisor should support his subordinates in a way so that each one of them is a success. Management should try to focus on its employees and support them not only in their difficult times at work but also through the times of personal crisis. The management can support employees by providing them recognition and appreciation. An employers can also provide valuable feedback to employees and make them feel valued to the organization.

PRINCIPLES OF EMPLOYEE RETENTION STRATEGIES:**1. Competitive Compensation and Benefits:**

An employer offer competitive salaries and benefits packages to attract and retain top talent.

2. Career Development Opportunities:

An employer provide opportunities for career growth and advancement within the organization to keep employees engaged and motivated.

3. Work-Life Balance:

It promote a healthy work-life balance by offering flexible work arrangements, paid time off, and other benefits that support employee well-being.

4. Recognition and Rewards:

He recognize and reward employees for their hard work and achievements to show appreciation and motivate them to continue performing at a high level.

5. Employee Engagement:

It foster a positive work environment where employees feel valued, respected, and engaged in their work through open communication, feedback mechanisms, and team-building activities.

6. Training and Development:

Invest in employee training and development programs to enhance their skills and knowledge, making them more valuable assets to the organization.

7. Strong Leadership:

It ensure strong leadership at all levels of the organization to provide direction, support, and mentorship to employees, helping them feel motivated and connected to the company's mission and values.

8. Employee Feedback:

He encourage open communication and feedback from employees to address any issues or concerns they may have and make necessary improvements to retain top talent.

9. Employee Well-being Programs:

An organisation implement initiatives that support employee well-being, such as wellness programs, mental health resources, and work-life balance initiatives to create a healthy and supportive work environment.

OBJECTIVE OF THE STUDY:

- To identify how retention strategies reduce turnover.
- To know how employees feel engaged in the organization.
- To know what are the managerial role in the retention.
- To study the problems of the employees in the organization.
- To assess the satisfaction level of employee with existing retention strategies.

NEED OF THE STUDY:

Employee retention is the conscious and deliberate effort to retain quality and individual on the organisation payroll. It is the proactive methods utilized by successful organisation to stop the drain of organization profits caused by excessive employee turnover. In the globally competitive

and challenging business scenario the success of an organisation will be to a great extent, influenced by the human resources. An employees retention has been a major concern for corporates in the current scenario. Individuals once being trained have a tendency to move to other organization for better prospects. Lucrative salary, comfortable timings, better ambience, growth prospects are some of the factors which prompt an employee to look at for a changes. Whenever a talented employee expresses his willingness to move on, it is the responsibility of the management and the human resource team to intervene immediately and find out the exact reason leading to the decision.

STATEMENT OF THE PROBLEMS:

- In spite of implementing various employee retention strategies, organization continue to face challenges in retaining talented employees, leading to increased turn-over rates.
- Despite investment in compensation, benefits, and professional development programs, employees are still departing from the organization at concerning rates.
- Understanding the factors contributing to employee turn-over despite retention efforts is crucial for organizations to develop more effective strategies for talent retention and ensure the long-term success and stability of the workforce.

COMPANY PROFILE:

Sibaflor Natural Decorations Private Limited is an export-oriented unit with easy access to world-class raw materials. Their company is popular for its design, quality, and product concepts in home decoration. 90% of the products manufactured are in ready-to-retail packaging and they cater to customers all over the world. Sibaflor meets all necessary quality, environmental, health & safety, supply chain security, and legal requirements. Experienced workers 500 and 80+ staff to take care of day-to-day operations.

Sibaflor is committed to achieving a self-reviewing organization in perpetuity by adopting QMS as a way of life. They believe in the importance of the process. Products will be evaluated both by their results and the process adopted. Their focus will be on ‘innovating products for the circular economy. They believe in integrating safety, health, and environmental practices into business activities. They strive to build long-term relationships based on trust and interdependence between, customers, employees, and suppliers.

Manufacturing and supply of natural decorations and aligned products are Rectangle Flower Arrangements, Bowl Potpourri, Acetate Box Potpourri, Round Flower arrangements, Broad Bouquets, Wreath Regular Flower, Lara Stick Bunch, SIBAFLOPOT Potpourri and Plaster of Paris.

REVIEW OF LITERATURE:

Hom and Griffeth (1995): Described in a study that the process of encouraging employees to stay for a long period or till the project completion is termed as retention.

Wysocki's (1997): Pointed out the view of “The society of Human Resource Management” that retention of employee is the hottest topic in the current scenario.

Abeysekera (2007): In a study evaluated the HR practices like realistic information about job, analysis, work life balance and career opportunities, supervisor support and compensation and their Impact on employees' intentions to leave which resulted that compensation and job analysis have positive impact on employee turnover.

Holtom et al. (2008): Discussed in this study that the factors that makes the employee for staying and leaving were different.

Hay group (2009): Stated that employee engagement includes components such as commitment and discretionary effort. Commitment refers to employees' attachment with an organization and the intent to continue with discretionary effort refers to the employees' readiness to leave. It is discussed that these two components must be considered seriousl

Priyanka and Dubey S K (2016) in their study performed exploratory factor analysis using principal component technique. Low salary no career growth opportunity lack of support from the peer, supervisors and family members, little learning opportunities, poor working environment i.e., no workplace safety, communication and insecurity in job.

Doug Lawrence (2017): Employee turnover is the greatest challenge around the globe and over the period of 2013 to 2018 anticipated to be 23 percent. Mentoring is a technique can be incorporated along with the leadership style. The focus of mentoring can be improve the personal

and professional relational of employee. Mentoring acts as guidance for attracting the high potential employee. Mentoring is also an effective tool for constructing organizational culture.

Archiver Article (2018): This article highlight five way for keeping employees engaged and motivated in organization. I) Let workers control their schedule: It is the technique of creating favourable organization environment like flexi work hours from home, telecommuting where employee can kept under less control or monitoring. Ii) Build active employee community: Employee can be made active by nurturing their skills, strengthening, motivating with unified work culture. Iii) Facilitate company meetings iv) invest in professional development: Promote employee through training and development to boost their enthusiasm level for improving their contribution and career advancement. V) Recognize hard work: Employee rewards and recognition is most important way for retaining employees. The employee must be praised for their outstanding contribution at work place.

RESEARCH DESIGN AND METHODOLOGY

Introduction:

Research methodology is the systematic way to solve the research problem. It given an idea about various steps in systematic manner. The research method of the study explains the systematic way to finding to the predetermining objective. This provide the clear path to accomplish and achieve clear solution problem for the stated.

Research design:

A research design is considered as the frame work or plan for a study the guides as well as helps the data collection and analysis of data. The research design in this project is discipline in nature.

Sample design:

By adopting random sampling method, a sample of 50 respondents was selected from . Siba flor natural decoration prt ltd and the questionnaire was distributed to get the primary data.

Construction tools:

Population:

There are totally 200 employees working in the organization.

Sampling size:

Out of the total population 50 respondents were selected.

Sample area:

The research was conducted at Siba flor Natural Deocrationprt ltd.

Tools for analysis:

After the data have been collected. It has to analyze the data obtained from the questionnaire is consolidated. Tabulation is a past of technical procedure where in classified data are put in the form of tables. Two table obtained should be analyzed with statistical techniques and tools so that interpretation would be precise.

The statistical tools used for analyzing the data collected are

- Sample percentage analysis
- Bar diagram
- Pie chart
- Chi square

DATA ANALYSIS AND INTERPRETATION

TABLE SHOWING THE IMPACT OF EMPLOYEE SATISFACTION OF ENGAGEMENT LEVEL			
S.NO	PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
1	Increases satisfaction and engagement	24	48%
2	No impact on satisfaction and engagement	18	36%
3	Decreases satisfaction and engagement	8	16%
	Total	50	100%

INFERENCE:

From the above chart, it can be inferred that 48% of the respondents increase in satisfaction and engagement suggests that efforts to enhance employee satisfaction and engagement are effective and 16% of the respondents experiencing a decrease satisfaction and engagement highlight areas that require immediate attention and intervention to prevent further decline and underlying issues.

TABLE SHOWING REDUCTION OF TURNOVER			
S.NO	PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
1	Competitive salary and benefits	16	32%
2	Career development opportunities	22	44%
3	Work-life balance initiatives	12	24%
	Total	50	100%

INFERENCE:

From the above table chart, it can be inferred that 44% of the employee citing career development opportunities as a factor, it appears to be the most significant factor in reducing turnover and 24% of employee, work-life balance incentives seem to be slightly less impact compared to the other factors.

THE TABLE SHOWING THE EFFECTIVENESS OF REDUCTION TURNOVER IN SIMILAR INDUSTRIES			
S.NO	PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
1	Mentors program	9	18%
2	Employee recognition programs	18	36%
3	Flexible work arrangements	23	46%
	Total	50	100%

INFERENCE:

From above chart, it can be inferred that 46% of the respondents consider flexible work arrangement as a key factors in reducing turnover that offering options such as remote work, flexible hours, or compressed workweeks and 18% of the respondents mentors programs is important while mentorship can be beneficial for employee development and engagement.

TABLE SHOWING THE COMMUNICATION AND FEEDBACK MACHANISMS			
S.NO	PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
1	They are crucial for employee retention	18	36%
2	They have minimal impact on retention	16	32%
3	They are not important for retention	16	32%
	Total	50	100%

INFERENCE:

From above chart, it can be inferred that 36% of the respondents consider that communication and feedback mechanisms crucial for employee retention suggests that these aspect play a significant role in employee engaged, satisfied, and committed to the organization and 32% of the respondents believe that communication and feedback mechanisms have minimal impact on retention.

TABLE SHOWING THEEFFECTIVENESS OF RETENTION STRATEGY TO REDUCE TURNOVER			
S.NO	PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
1	Turn over the rate	14	28%
2	Employee engagement scores	18	36%
3	Employee satisfaction surveys	18	36%
	Total	50	100%

INFERENCE:

From above chart. It can be inferred that 36% of the employee satisfaction survey providing feedback on how satisfied employee are with various aspects of their job and the

organisation and 28% of the respondents turnover rate provide a quantitative measure of how many people are leaving the organisation within a specific time frame.

TABLE SHOWING THE MANAGER SUPPORT FOR CAREER GROWTH AND DEVELOPMENT			
S.NO	PARTICULARS	NO.OF.RESPONDENTS	PERCENTAGE
1	Yes	25	50%
2	No	3	6%
3	Sometime	18	36%
4	Not sure	4	8%
	Total	50	100%

INFERENCE:

From the above chart, it can be inferred that 50% of the respondents indicates that their managers support career growth and development that managers within the organisation are actively involved in fostering the professional growth and advancement of their employee and 6% of the respondents report that their managers do not support career growth and development some managers within the organisation who do not prioritize or actively support their employee.

FINDINGS:

- The study reveals that 48% of the employees experience an increase in satisfaction and engagement. This indicates that strategies or initiatives aimed at enhancing these factors are effective for a significant portion of the workforce.
- The study reveals that 44% majority of employee, prioritize career development opportunities as a key factor in reducing turnover. This suggests that investing in programs such as training, mentorship, and advancement pathways.
- The majority of employees, 46%, prioritize flexible work arrangements as a key factor in reducing turnover. This indicates that providing options such as remote work, flexible hours, or compressed workweeks
- The study reveals that 36%, of respondents consider communication and feedback mechanisms crucial for employee retention. This highlights the importance of fostering

open communication channels and providing opportunities for feedback to maintain employee satisfaction and engagement.

- The study reveals that employee engagement score and satisfaction survey results both at 36% indicate that the retention strategy is moderately effective in fostering employee engagement and satisfaction. However, there is potential for improvement to enhance these metrics further.
- The majority 42% of the respondents experience some level of recognition for their contributions at work, with frequent acknowledgment being the most prevalent.
- The study reveals that 36% significant portion of employees perceive growth and advancement opportunities, there is also a notable percentage who do not or are uncertain.
- The study reveals that 38% of the respondents are feel stagnant in their roles and providing clear pathways for career progression could contribute to higher satisfaction, engagement, and retention within the organization.

SUGGESTIONS

- The organisation should prioritize investing in programs that support employee growth and advancement. This could involve offering mentorship programs, providing training and development opportunities, and creating clear path for career progression.
- By demonstrating a commitment to employee growth and advancement, organisation can increase employee retention and satisfaction, ultimately reducing turnover rates.
- Therefore it's crucial for organisation to prioritize initiatives that enhance employee satisfaction and engagement, as it leads to more positive impact on the workplace environment productivity.
- To leverage this positive impact organisation should focus on strategies to enhance employee satisfaction and engagement. Some suggestions to achieve this could include:
 - Implementing regular feedback mechanisms to understand employee need and concerns.
 - Providing opportunities for skill development and career development.
 - Recognizing and rewarding employees for their contribution.
 - Promoting a positive work culture that values diversity, inclusion, and work-life balance.
 - Encouraging open communication and transparency within the organisation.

CONCLUSION

Employee retention is a major concern for many employee; management teams of successful organization have to realize the importance of retention its most productive workforce. High turnover leads to loss of valuable workers whose replacement is costly. It is important to note that a high employee turnover is normally unhealthy to an organization's performance as well as the productivity of other presumably loyal employees. Moreover, turnover affects productivity of remaining employees since they may be compelled to perform duties of more than one person or allocated duties that do not match with their training.

Employee exit from an organization may be a subject of variant factors; however, although some are avoidable, other factors may be too strong for the employer to control. It is fundamental for employers to identify these factors and establish strategies of preventing their occurrence. Primarily, turnover is attributed to lack of job satisfaction or economic conditions. Lack of job satisfaction is mainly caused by unmet expectations, the nature of job, corporate culture in the organization and personal demographics. On the other hand, market conditions influence turnover through availability of better job opportunities with improved compensation.

In order to limit harm of high turnover, employers need to utilize some strategies so as to improve job satisfaction and hence retention. Primarily, an employer should review his compensation packages, the workplace relationships, career and development prospects, and support in the workplace to facilitate retention of high-performers. The employers should offer competitive compensation packages depending on skills and experience of their employees and duration worked.

BIBLIOGRAPHY

REFERENCE:

- Armstrong, M. (2002). Employee reward. London: CIPD Publishing.
- Armstrong, M. (2007). A handbook of employee reward management and Practice.London: Kogan Page Publishers.
- Branham, L. (2005). Seven Hidden Reasons Employees Leave. NY: AMACOM Div American Mgmt Assn.

- Carsen, J. & CCH Incorporated. (2005). HR How to: Employees Retention. IL: CCHIncorporated.
- Deeprase, D. (2007). How to recognize & reward employees: 150 ways to Inspire peakPerformance. NY: AMACOM Div American Mgmt Assn.

WEBSITE

- www.employee-retention.com
- www.employeeerertentionconsulting.com
- www.rentionbenchmarking.com
- www.employeeerentionstrategies.com

EMPLOYEE WELFARE MEASURES IN MACHADO SON'S PRIVATE LIMITED**S. Minu Rachel and C. S. Purnima**

Department of Human Resource Management, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to ManonmaniamSundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT:

Welfare means improving, faring or doing well. It is a comprehensive term and refers to the physical, mental, moral and emotional well-being of an individual. Further, the term welfare is a relative concept. The basic purpose of labour welfare is to enrich the life of employees and keep them happy and contented. Welfare facilities enable workers to have a richer and more satisfying life. It raises the standard of living of workers by indirectly reducing the burden on their pocket. Since organization exist to achieve goals the degree of success in reaching their individual goals is important in determining organizational effectiveness. This research aims at knowing welfare measures. In this research the work atmosphere and the welfare measures are provided by the organization. It also aims at finding out the employee's relationship. It is the detailed study of employer's views towards employee's welfare measures in the organization. The research includes employee satisfaction towards various welfare measures provided by the organization.

KEYWORDS : Welfare, Employee relationship.

INTRODUCTION:

The word "employee welfare" refers to a variety of services, perks and facilities that employers provide to their workforce. The welfare measures might be of any sort or shape; money is not required. This covers things like stipends, accommodation, transportation, health insurance and food. Employee welfare also includes keeping an eye on working conditions, fostering industrial harmony through the development of a health infrastructure, industrial relations and insurance for workers' families against illness, accidents, and unemployment. The firm enriches the quality of life for its employees by providing such excellent benefits. The definition of employee welfare is "efforts to make workmen's lives worthwhile." Employee welfare is a broad concept that refers to a variety of services, advantages, and facilities provided to employees and by companies.

FEATURES OF EMPLOYEE WELFARE:

The basic features of employees' or labour welfare are as follows:

- I. Labour welfare includes various facilities, services and amenities provided to workers for improving their health, efficiency, economic betterment and social status.
- II. Welfare measures are in addition to regular wages and other economic benefits available to workers due to legal provisions and collective bargaining.
- III. Labour welfare measures are flexible and ever-changing. New welfare measures are added to the existing ones from time to time.
- IV. Welfare measures may be introduced by the employers, government, employees or by any social or charitable agency.
- V. The purpose of labour welfare is to bring about the development of the worker to make him a good worker and a good citizen.

TYPES OF EMPLOYEE WELFARE:

Employee welfare can be divided into two categories, namely:

- (1) Statutory, and
- (2) Voluntary

1. Statutory:

The government has passed a number of legislations in order to set minimum standards of safety and welfare for the employees at their workplace. Provisions have been made for the welfare facilities such as washing, storing, first-aid appliances, hours of work, sanitation, etc.

2. Voluntary:

The employers voluntarily have provided welfare amenities to the employees besides the statutory facilities. They are more concerned with the welfare of their employees. Facilities for recreation, medical treatment, free meals or subsidized meals, schooling facilities for children and sports and games are provided by many organizations. Organizations have given opportunities to work with flexible working schedules. It helps to meet business commitments while at the same time supporting one's personal life needs. Organizations also provide medical insurance coverage to employees for expenses relating to

hospitalization due to illness, disease, and injury. Harassment policies are also made to protect harassment of any kind to employees.

OBJECTIVES OF THE STUDY:

- To identify the welfare facilities provided in the organisation.
- To find out the employees level of satisfaction through the welfare measures.
- To understand how welfare measure improve the motivation of the employees.
- To find out employees preference regarding welfare measures which they like to have in future.

SCOPE OF THE STUDY

- The present study has been undertaken to find out effectiveness of employee welfare measure.
- The study can be used to bring out the solution for the problem faced by the employees availing the welfare measure.
- Though the study, company would be able to know the satisfaction level of employee on welfare measure.

NEED OF THE STUDY

- To develop efficiency and productivity among employees.
- To build a stable labour force to reduce labour turnover and absenteeism.
- To find whether labour welfare help in providing good industrial relations.
- To find out the facilities entitled by integral coach factory.
- To know about the constitutional provision integral coach factory.

COMPANY PROFILE

Machado Sons was made a private limited company during the year 1992 and it was during this period Shri. Vikrant Machado took charge of the company and was at the helm of activities that made Machado Sons Pvt. Ltd. the Leaders of the Industry and made brand “Machado” synchronize with “Shipping & Customs Clearance”. Since then “Machado” has never looked back and has added Freight Forwarding, Steamer Agency Transportation and Fumigation & Pest control to its scope of activities.

COMPANY LOGO:



OUR INFRASTRUCTURE

Our Infra Structure strengths:

- Highly Qualified and well experienced Staff strength of 45 no's.
- Office situated within the port area itself.
- 24 hrs working office operating under shifts.
- Warehouse for your storage needs.
- Leased internet line for complete office is WIFI enabled.

REVIEW OF LITERATURE

MR. RAVIKUMAR (2003) analysed the employee welfare activities includes anything that is done for the comfort and improvement of employees and is provided over and above the wages. Welfare helps in keeping the morale and motivation of the employees high so as to retain the employees for longer duration". The welfare measures need not be in monetary terms only but in any kind/forms. Employee welfare includes monitoring of working conditions, creation of industrial harmony through infrastructure for health, industrial relations and insurance against disease, accident and unemployment for the workers and their families.

MANZINI and GWANDURE (2011) studied that the concept of employee welfare has been used by many organizations as a strategy of improving productivity of employees; especially in the mobile industry since work related problems can lead to poor quality of life for employees and a decline in performance. It is argued that, welfare services can be used to

secure the labour force by providing proper human conditions of work and living through minimizing the hazardous effect on the life of the workers and their family members.

PATRO (2015) in a comparative analysis of welfare measures in public and private sector found that an employee's welfare facility is the key dimension to smooth employer-employee association. These welfare facilities improve the employees' morale and loyalty towards the management thereby increasing their pleasure, fulfilment and performance.

RESEARCH METHODOLOGY

RESEARCH DESIGN:

A research design is considered as the frame work or plan for a study that guides as well as helps the data collection and analysis of data. The research design in this project is discipline in nature

SAMPLE DESIGN:

By adopting random sampling method, 50 sample respondents was selected from Machado Sons Private Limited, Tuticorin.. And the questionnaire was distributed to get the primary data from them.

TOOLS FOR ANALYSIS:

The collected data has been processed with the help of appropriate statistical tools. The statistical tools were selected on the basis of the objectives of the study and also the nature of data included for the analysis.

- Simple percentage analysis
- Bar diagram
- Pie - Chart
- Chi – Square test
- t - Test

❖ SIMPLE PERCENTAGE ANALYSIS

Percentage analysis is a method to represent raw streams of data was a percentage for better understanding of collected data.

Percentage analysis = $\frac{\text{Number of respondents}}{\text{Total number of respondents}} \times 100$

❖ CHI-SQUARE TEST:

Chi-square test is used to compare two variables for a randomly selected data. The expected frequencies are based on the conditions of null hypothesis the rejection of null hypothesis is based on expected value. It is used to check whether the variable are independent of each other or not.

❖ t – TEST

The t-test for two variables is not a common term in statistics. However, if you are referring to a specific statistical test for comparing means or assessing the relationship between two variables, it could be either a correlation test or a regression analysis.

TABLE 1
WORKING ENVIROMENT

S.NO	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1.	Highly dissatisfied	2	4.0
2.	Dissatisfied	4	8.0
3.	Neutral	4	8.0
4.	Satisfied	11	22.0
5.	Highly satisfied	29	58.0
Total		50	100.0

Source: Primary data

HYPOTHESIZED ASSOCIATION BETWEEN WITH WORKING EXPERIENCE AND WORKING ENVIROMENT

HO: There is no significant association between with working experience wise classification and working environment.

H1:There is significant association between with working experience wise classification and working environment.

The above table 1 shown that the significant of the p value for this hypothesis is greater than 0.05, so the null hypothesis is accepted and there no significant association between working experience and working environment

USING CHI- SQUARE TEST EXPERIENCE WISE CLASSIFICATION OF THE RESPONDENTS * WORKING ENVIROMENT OF THE RESPONDENTS CROSS TABULATION							
Count							
		WORKING ENVIROMENT OF THE RESPONDENTS					Total
		Highly dissatisfied	Dissatis Fied	Neutral	Satisfied	Highly satisfied	
EXPERIENCE WISE CLASSIFICATION OF THE RESPONDENTS	1-5 Years	0	0	1	1	1	3
	5-10 Years	0	3	1	6	13	23
	10-15 Years	1	0	0	3	7	11
	Above 15 Years	1	1	2	1	8	13
Total		2	4	4	11	29	50

Chi-Square Test			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.715 ^a	12	.553
Likelihood Ratio	12.585	12	.400
Linear-by-Linear Association	.039	1	.844
N of Valid Cases	50		
a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .12.			

INFERENCE

Communication between departments is accepted with the experience which inferential p-value is more than 0.05 that is statistically accepted of the significant.

TABLE 2

INDEPENDENT SAMPLE t-TEST GENDER AND MEDICAL FACILITIES PROVIDED TO THE EMPLOYEES

INDEPENDENT SAMPLE T TEST:
HYPOTHESIZED DIFFERENCE BETWEEN WITH GENDER AND MEDICAL PROVIDED TO THE EMPLOYESS

H0 - There is no significance difference between the gender and medical facilities provided to the employees

H1- There is significance between the gender and medical provided to the employees

The above table 2 shown that the significant of the p value for this hypothesis is greater than 0.05, so the null hypothesis is accepted and there no significant difference between gender and medical facilities provided to the employees

VARIABLE	GENDER	MEAN	SD	t value	p value
Medical facilities provided	Male	4.2581	.99892	0.016	0.987
	Female	4.2632	1.19453		

$p > 0.05$ is no significant at the 0.05 level (2-tailed)

p value 0.05 there is no significant difference between gender and medical provided.

INFERENCE

There is no significant difference in medical provided to employees, recognition is based on the gender

TABLE 3
FACTORS MOTIVATE TO STAY

S.NO	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1.	Salary	26	52%
2.	Welfare facilities	8	16%
3.	Goodwill	12	24%
4.	Promotion	4	8%
Total		50	100%

Source : Primary data

INFERENCE

From the above table it is inferred that the largest percentage of respondents (52%) are motivated to stay by salary. Employers who offer competitive salaries are likely to attract and retain talent effectively.

TABLE 4
PHYSICAL WELL BEING

S,NO	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1.	Ergonomic	14	28%
2.	Workplace	27	54%
3.	Healthy criteria option	9	18%
Total		50	100%

Source : Primary Data

INFERENCE

Based on the percentages provided, it seems that a significant portion of respondents (54%) prioritize workplace-related factors for their physical well-being, followed by ergonomic considerations (28%) and healthy criteria options (18%). This suggests that creating conducive and healthy work environment may be crucial for maintaining physical well-being among respondents

TABLE 5
TABLE SHOWING STRESSORS AND CHALLENGES

S.NO	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1.	Stress management	12	24%
2.	Flexible work	26	52%
3.	Counselling service	7	14%
4.	Improve workload distribution	5	10%
Total		50	100%

Source : Primary data

INFERENCE

Based on the percentages provided, it appears that the top stressors and challenges for respondents are flexible work arrangements (52%) and stress management (24%). A smaller percentage of respondents are interested in accessing counselling services (14%) and

improving workload distribution (10%), indicating a need for support in managing work-related stressors.

TABLE 6
TECHNOLOGY TO IMPROVE EMPLOYEES

S.NO	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1.	Health tracking app	6	12%
2.	Virtual wellness session	25	50%
3.	Tele medicine service	4	8%
4.	Online mental health resource	15	30%
Total		50	100%

Source : Primary data

INFERENCE

Based on the percentages provided, it appears that the top technology preferred by respondents to improve employee well-being is virtual wellness sessions (50%), followed by online mental health resources (30%). Health tracking apps (12%) and telemedicine services (8%) are less favoured, indicating that respondents may prefer interactive and supportive resources over passive tracking tools or remote medical services.

TABLE 7
WELFARE MEASURE

S.NO	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1.	Good relationship	22	44%
2.	Retain the present employees	7	14%
3.	Encourage employee morale	18	36%
4.	All the above	3	6%
Total		50	100%

INFERENCE

Based on the percentages provided, it appears that the majority of respondents consider fostering good relationships (44%) and encouraging employee morale (36%) as important welfare measures. A smaller percentage of respondents see retaining present employees (14%) as significant. The fact that only 6% of respondents selected all variables.

TABLE 8
ALLOWANCE ENHANCEMENT PROVIDED TO THE EMPLOYEES

S.NO	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1.	Vehicle allowance	26	52%
2.	Medical allowance	7	14%
3.	Night duty allowance	17	34%
Total		50	100%

Source : Primary data

INFERENCE

Based on the percentages provided, it seems that the majority of respondents prioritize vehicle allowances (52%) as the preferred allowance enhancement. Night duty allowance is also valued by a significant portion of respondents (34%), Medical allowance, is the least preferred option (14%) of the respondents.

FINDINGS

- ❖ 46% of respondents are opting to take leave without pay rather than utilizing maternity leave benefits.
- ❖ 52% of the respondents are motivated to stay in their positions primarily due to salary considerations
- ❖ 54% of the respondents prioritize the workplace environment in relation to their physical well-being
- ❖ 46% of the respondents prefer to receive employee feedback on a semi-annual basis.
- ❖ 50% of the respondents believe that virtual wellness sessions using technology can effectively improve employee well-being
- ❖ 46% of the respondents recommend implementing inclusive training programs as a suggestion for forecasting.
- ❖ 52% of the respondents prioritize festival bonuses among the types of bonuses provided to employees

- ❖ 44% of the respondents perceive fostering good relationships as a key aspect of welfare measures.
- ❖ 52% of the respondents prioritize a vehicle allowance among the types of engagement allowances provided to employee

SUGGESTIONS

- ❖ From the study the researcher have found that few employees are not fully satisfied with the welfare measures provided by the company. The management should consider this and necessary arrangements should be made to provide adequate facilities to improve the efficiency of the workers.
- ❖ The management should pay kind attention to improve the medical facilities to their employees.
- ❖ The management shall adopt appropriate communication system to ensure that all the future plans and company policies being reached to all the employees in the organization.
- ❖ The company can also establish a council constituting of members from all the departments to device the welfare measures and to make the employees much more satisfied.
- ❖ Recreation facilities can be improved to increase the morale of the employees and reduces the stress of the employees.

CONCLUSION

The welfare schemes are important aspects in every organization which plays a very important role and such welfare schemes effectively improve the performance of the employees and workers and help the company in capturing the good marketing in present day competition.

Labour welfare awareness meetings and presentations must be carried out periodically, this in turn helps to improve the labour satisfaction and it will show in the improvements of productivity. Labour welfare is very important to run the company successfully so the company should follow the welfare activities regularly to improve the labour satisfaction in their working environment.

Thus from this study it found that though the company has provided various welfare measures, some of them seems to be not useful to the workers. The company has to get constant feedback from the workers in regard of the welfare activities provided to them. It is



found that all the basic needs of the workers are met. Though their basic needs are met various welfare measures or schemes can be provided that can further motivate the employees, which can benefit them and also the organization in terms of increased efficiency and productivity.

BIBLIOGRAPHY

BOOK REFERENCE

- Alice, Regina (2016), "Effect of welfare programmes on employee satisfaction in the public sector: A case of the public service commission", The strategic Journal of Business & Change Mangament, vol. 11, issue 3
- Aguilar (2016), "Importance of Employee Welfare and Performance: The Case of the UASU at Egerton University, Kenya", European Journal of Business and Management, vol.6, issue No.7.

WEBSITES

- www.bhelceramics.com
- <https://www.owler.com>
- <https://www.bhelisg.com>
- www.cleverism.com
- www.naukrihub.com

THE ENHANCING EMPLOYEE PERFORMANCE THROUGH MONETARY INCENTIVE

K. Rajakani Christina and C. S Purnima

Department of Human Resource Department, St. Mary's College (Autonomous),
Thoothukudi Affiliated to Manonmaniam Sundaranar University, Tirunelveli,
Tamilnadu, India

ABSTRACT

This study explores the impact of monetary incentives on employee performance within organizations. It develops into various types of monetary incentives, such as bonus, commissions, and profit-sharing, and their effectiveness in motivating employees to achieve higher levels of performance. Additionally, it examines the role of intrinsic and extrinsic motivation in shaping employees' response to monetary incentives. By synthesizing existing research findings, this paper aims to provide insights into designing effective incentive programs that align with organizational goals and fosters a culture of high performance. These incentives serve as tangible rewards for employees' efforts and accomplishments, providing a clear link between performance and compensation.

**KEYWORDS: EMPLOYEE PERFORMANCE, MONETARY INCENTIVE,
COMPETITIVE WORK**

INTRODUCTION

Monetary incentive or financial rewards for employee performance lead a crucial role to motivate employee toward their work in a competitive work environment. As per the economic report, monetary incentive is a very common way to enhance employee performance in an organization or company through using financial rewards. Monetary reward is important to increase employee performance due to various reasons. This particular study paper analyzes properly monetary incentives, and the importance of monetary incentives to enhance performance in a competitive business environment.

Monetary incentive come in various forms, including, bonuses, commission, profit-sharing, and performance-based pay. These incentive provide tangible rewards for employee who exceed expectations, meet targets, or contribute significantly to the

company's goals. Such rewards not only recognize and appreciate employee's efforts but also encourage continuous improvement and commitment to excellence.

FEATURES

Motivation: Offering bonuses, commissions, or performance-based pay motivates employees to work harder and achieve better results to earn more money.

Attraction and Retention: Competitive salaries and financial rewards attract top talent to the organization and encourage them to stay, reducing turnover rates.

Goal Alignment: Monetary incentives tied to specific goals or Key Performance Indicators (KPIs) align employees' efforts with organizational objectives, fostering a results-driven culture.

Recognition: Monetary rewards serve as tangible recognition of employees' contributions, boosting morale and job satisfaction.

Productivity: Financial incentives can drive productivity by encouraging employees to be more efficient and focused on tasks that contribute directly to their performance objectives.

Innovation: Incentives tied to innovation or problem-solving initiatives can stimulate creativity and initiative among employees.

Fairness: When implemented transparently and equitably, monetary incentives promote a sense of fairness and equity among employees, fostering a positive work environment.

SCOPE OF THE STUDY

- Monetary rewards serve as powerful motivators, encouraging employees to strive for excellence and achieve organizational objectives.
- Financial incentives can lead to increased productivity as employees are driven to perform at their best to attain the associated rewards.
- Offering monetary rewards contributes to employee satisfaction and retention by recognizing and valuing their contributions, reducing the likelihood of turnover.

- Monetary incentives create a competitive yet positive work environment, where employees are inspired to outperform their peers, driving overall team success.

REVIEW OF LITERATURE

Milkovich & Newman (2005): They emphasized the need for organizations to align reward systems with their overarching goals and individual performance metrics. By discussing various approaches to compensation design and implementation, they provide valuable insights into how organizations can effectively utilize monetary incentives to drive desired employee behaviours and outcomes.

Luthans &Stajkovic (1999):Luthans and Stajkovic argued for a broader approach to reinforcement beyond monetary rewards in their article. They suggest that while monetary incentives are essential, they should be complemented with non-monetary forms of recognition and feedback. By incorporating a variety of reinforcement mechanisms, organizations can create a more holistic approach to motivating employees and sustaining high levels of performance.

OBJECTIVES OF THE STUDY

1. To know about monetary incentive of employee.
2. To analyse the quality of work and business productivity through an incentive system.
3. To review the relationship between employee and customers to increase the company's productivity.
4. To study the various incentive method that has been followed in the company.
5. To learn on monetary incentive, employee satisfaction, motivation and performance.

CONSTRUCTION OF TOOLS: Questionnaire

The researcher constructed a questionnaire and was circulated to the sample of 50 respondents.

Sample design:

By adopting random sampling method, 50 sample respondents was selected from Hero Karunya Motors. The questionnaire was distributed to get the primary data.

FINDINGS

- ✓ 48% of the respondents effective the overall effectiveness of monetary incentives at workplace.
- ✓ 48% of the respondents strongly agree the motivate employees to perform better at work.
- ✓ 40% of the respondents performance-based raises the type of monetary incentives most motivating.
- ✓ 28% of the respondents accuracy the aspects of work quality.
- ✓ 96% of the respondents individual performance they believe on individual performance, team performance or a combination of both.
- ✓ 72% of the respondents no the impact the quality of work produced by organization.
- ✓ 66% of the respondents team-building activities the improve the relationship between employee and increased productivity.
- ✓ 100% of the respondents review the relationship between employee and customers to ensure productivity.
- ✓ 44% of the respondents training and development programs the promoting a positive attitude toward the performance.
- ✓ 76% of the respondents the maintain a positive attitude among employee toward their performance.
- ✓ 56% of the respondents somewhat increase my motivation the monetary incentive affects your level of motivation at work.
- ✓ 74% of the respondents positive the overall attitude toward your performance in the organization.
- ✓ 44% of the respondents important the incentives in shaping tour attitude toward your performance.
- ✓ 68% of the respondents transparent the criteria for receiving monetary in organization.
- ✓ 54% of the respondents very important the important of monetary incentives in motivating at work.
- ✓ 44% of the respondents neutral and agree are the monetary incentive directly impacts your performance.

- ✓ 100% of the respondents the preference to receive monetary incentives for performance.
- ✓ 40% of the respondents the overall quality of work produced by organization.

TABLE 1.1

HYPOTHESIZED ASSOCIATION BETWEEN THE GENDER AND THE MOTIVATION LEVEL TO PERFORM BETTER AT WORK

HO: There is no significant association between the gender and the motivate employees.

H1: There is significant association between the gender and the motivate employees.

Chi-Square			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.990 ^a	2	0.224
Likelihood Ratio	3.571	2	0.168
Linear-by-Linear Association	2.858	1	0.091
N of Valid Cases	50		
a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is .64.			

INFERENCE:

The motivation level of employee to perform better is accepted with the gender in which inferential testing p-value is more than 0.05 which is statistically accepted of the significance.

TABLE 1.2

$P > 0.05$ is no significant at the 0.05 level (2-tailed).

P value 0.05 there is no significance and no difference between the gender and the overall attitude towards performance in the organization.

HO: There is no significance association between the gender and the overall attitude towards performance in the organization.

HI: There is significance association between the gender and the overall attitude towards performance in the organization.

S.NO	PARTICULAR	GENDER	MEAN	STD	t value	P value
1	THE OVERALL ATTITUDE TOWARD YOUR PERFORMANCE IN THE ORGANIZATION	Male	4.2381	0.57634	1.159	0.252
		Female	4.0000	0.00000		

INFERENCE:

There is no significance difference in the overall attitude towards performance in the organization company based on the gender.

TABLE 1.3

HYPOTHESIZED ASSOCIATION BETWEEN THE EXPERIENCE AND THE INCENTIVES SHAPING ATTITUDE TOWARDS EMPLOYEES PERFORMANCE

HO: There is no significant association between the experience and the incentives shaping attitude towards employees performance.

H1: There is significant association between the experience and the incentives shaping attitude towards employees performance.

Chi-Square			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.535 ^a	6	0.146
Likelihood Ratio	10.266	6	0.114
Linear-by-Linear Association	0.947	1	0.331
N of Valid Cases	50		
a. 9 cells (75.0%) have expected count less than 5. The minimum expected count is .04.			

INFERENCE:

The attitude towards performance is accepted with the experience which is inferential testing p-value more than 0.05 that is statistically accepted of the significance.

TABLE 1.4

HYPOTHESIZED ASSOCIATION BETWEEN THE MARITAL STATUS AND THE CRITERIA FOR RECEIVING MONETARY INCENTIVE IN ORGANIZATION

HO: There is no significant association between the marital status and the criteria for receiving monetary incentive in organization.

H1: There is significant association between the marital status and the criteria for receiving monetary incentive in organization.

ANOVA							
TABLE SHOWING THE CRITERIA FOR RECEIVING MONETARY INCENTIVE IN ORGANIZATION							
			Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	(Combined)		.309	1	0.309	0.557	0.459
	Linear Term	Unweighted	.309	1	0.309	0.557	0.459
		Weighted	.309	1	0.309	0.557	0.459
Within Groups			26.571	48	0.554		
Total			26.880	49			

INFERENCE:

The criteria are based on merit rather than accepted which is implied by inferential testing and p value is 0.001 that is statistically accepted value at given percent level of satisfaction.

TABLE 1.5

$P > 0.05$ is no significant at the 0.05 level (2-tailed).

P value 0.05 there is no significance and no difference between marital and importance of monetary incentives motivating at work.

HO: There is no significance associated between the between marital and importance of monetary incentives motivating at work.

HI: There is significance associated between the between marital and importance of monetary incentives motivating at work.

S.NO	PARTICULAR	MARITAL	MEAN	STD	t value	P value
1	THE IMPORTANT OF MONETARY INCENTIVES IN MOTIVATING AT WORK	Married	4.2727	0.76730	-2.076	0.043
		Unmarried	4.6429	0.48795		

INFERENCE:

There is no significant difference in the importance of monetary incentives motivating at work based on the marital status.

TABLE 1.6

HYPOTHESIZED ASSOCIATION BETWEEN THE GENDER AND THE MOTIVATION LEVEL TO PERFORM BETTER AT WORK

HO: There is no significant association between the gender and the directly impacting the performance.

H1: There is significant association between the gender and the directly impacting the performance.

ANOVA							
TABLE SHOWING THE MONETARY INCENTIVE DIRECTLY IMPACTING THE PERFORMANCE							
			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		1.813	3	0.604	1.320	0.279
	Linear Term	Unweighted	0.451	1	0.451	0.984	0.326
		Weighted	0.430	1	0.430	0.939	0.338
		Deviation	1.383	2	0.692	1.510	0.232
Within Groups			21.067	46	0.458		
Total			22.880	49			

INFERENCE:

The impact is based on merit rather than acceptance which is implied by inferential testing and p value is 0.001 that is statistically accepted value at given percent level of satisfaction.

SUGGESTIONS

- Provide a percentage of sales or profits as an incentive for sales teams or departments.
- Reward exceptional performance with salary increases or promotions.
- Offer bonuses to attract talented candidates to join the company.
- Provide bonuses to employees who stay with the company for a certain period, encouraging loyalty and commitment.
- Offer employees the opportunity to own a stake in the company, aligning their interests with the company's success.
- Encourage employees to refer qualified candidates by offering monetary rewards for successful hires.

CONCLUSION

In conclusion, monetary incentives can be powerful tools for enhancing employee performance and motivation. By implementing a variety of incentives such as performance-based bonuses, profit-sharing plans, and merit-based pay raises, companies can effectively align employee efforts with organizational goals. However, it's crucial to design incentive programs that are fair, transparent, and tailored to the needs of employees. Regular evaluation and adjustment of these programs based on feedback and performance outcomes are essential for maximizing their effectiveness in driving employee engagement and productivity. Ultimately, a well-crafted system of monetary incentives can contribute significantly to a positive and dynamic work culture while also fostering employee loyalty and commitment.

In addition to driving performance and motivation, monetary incentives can also serve as effective tools for talent retention, attracting top talent, and promoting a culture of continuous improvement within an organization. By offering incentives such as stock options, education reimbursement, and travel rewards, companies can not only recognize and reward exceptional performance but also invest in the long-term growth and development of their employees.

REFERENCES

- ❖ "Human Resource Management: Gaining a Competitive Advantage" by Raymond A. Noe, John R. Hollenbeck, Barry Gerhart, and Patrick M. Wright
- ❖ "The HR Scorecard: Linking People, Strategy, and Performance" by Brian E. Becker, Mark A. Huselid, and Dave Ulrich (Year: 2001)
- ❖ "Effective Human Resource Management: A Global Analysis" by Edward E. Lawler III and John W. Boudreau (Year: 2015)

REFERENCE WEBSITE

- ❖ <https://www.forbes.com>
- ❖ <https://www.worldwidejournals.com>
- ❖ <https://www.airo.co.in>
- ❖ <https://www.ijnrd.org>

A SOCIO-ECONOMIC CONDITIONS OF RENTED HOUSE HOLDS IN MUTHUKRISHNAPURAM OF THOOTHUKUDI DISTRICT

N. Angel Mary and A. Sudha

PG Department of Economics, St. Mary's College (Autonomous), Thoothukudi
Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT

The socio-economic conditions of rented houses can present various challenges. Renters often face issues such as housing afford ability, limited access to quality housing, and vulnerability to changes in the economy. High rental costs relative to income can strain household budgets, leading to financial stress. Additionally, issues related to housing conditions, inadequate amenities, and lack of tenant rights protection can contribute to socio-economic disparities. Addressing these problems requires a holistic approach, including policies to ensure affordable housing, tenant rights advocacy, and initiatives to improve overall socio-economic conditions. Most of the families choose to rent houses based on their income and family situations; unfortunately there may not be enough good quality rental housing for these families. This study focus on identifying the rent house problem.

Keywords: Rent house, Rental house management, Affordable price, Affordable housing, Standard of living, Market rate rental housing, House owner, Tenant.

Introduction

The various factors responsible for this shortage in supply, and majorly it will deal with the present concept of urban rental housing which is being recently introduced in the Indian real estate. With these schemes the pressure on the existing urban areas in also increasing. With increasing opportunities in these urban areas the pace of urbanization has touch its all-time high. This shift in rural to urban population has raised the demand of housing and the existing housing lot is either insufficient or is not affordable due to many factors. The latest official Economic Survey says there is a shortage of nearly 20 million homes in India.

Housing problem is one of the major issues normally discussed in the world for a today. This was due to the dire shortage of accommodation; the demands for it far surpass the number available for human living.

There rental housing came into play due to the seriousness of housing problems. Not

most people can afford building houses due to several factors such as poor income hence there was a need for the rental houses. Outlines four sources of demand for the rental housing needs:

- Graduates: They require rental housing since they are from different levels of schooling and hence entering the labor market for the first time.
- Transfers: For several reasons, some people may have to relocate from their previous settlements to different of urban areas. This may be due to reasons like work transfer, promotion or social reasons such as marriage.
- Rural-Urban migration
- Expatriate population.

Rental house management has become important factor in modern society hence the need to have a rental house management system. This chapter will provide a brief understanding about background of study, definition of the project problem statement, its objectives, scopes, project justification, risks, project deliverables and project budget and schedule. Housing has a central importance to quality of life with considerable economic, social, cultural and personal significance.

Types of Rental Housing

Apartment, Assisted Living Facility, Boarding House, Condominium, Duplex/Double/2-Family, Efficiency/Studio, Fixed Below-Market Rate Rental Housing, Halfway Houses, Income-Based Rental Housing, Lease/Purchase Housing, Market Rate Rental Housing, Public Housing, Shared Living Facility, Shelter Plus Care, Veteran or VASH, Shelters, Single-Family Home, Single Room Occupancy (SRO), Sober Living Facilities, Subsidized Housing, Project Based Vouchers, Tax Credit Properties, Transitional Housing.

Objectives of the study

1. To study the renting house conditions and problem of the study area.
2. To know the mode of payments of the renting house of the sample respondents.
3. To analyze the socio-economic conditions of the sample respondents.
4. To analyze the rules and regulations of the house owners.
5. To know the housing types of study area.

Review of literature

Y. F. Wang & Liu, 2015 The proportion of the two effects depends on the impact of different types of fiscal expenditure on household consumption. If the impact intensity of consumer fiscal expenditure is greater than that of productive

fiscal expenditure, residents' consumption will be crowded out, otherwise, residents' consumption will be increased.

Yan & Wang, 2016 In addition, the influence of fiscal expenditure on residents' consumption exists across differences in time and region, which is beneficial to residents' consumption in the short term but will crowd out residents' consumption in the long term.

L. Liu 2017 showed that an increase in housing rent has a negative impact on labor supply and found that gender and village type play a moderating role in the relationship between housing rent and labor supply.

Salim et al. 2017 took China sample and found that there is a significant negative correlation between human capital and energy consumption in China. Specifically, a 1% increase in human capital will reduce energy consumption by 0.18% to 0.45%. The positive impact of the inflow of the regional labor force on residents'

Zhao and Zhu 2017 In terms of the impact of housing rent on residents' consumption concluded that the consumption income elasticity of households with a heavier rent burden is lower than that of households with a lighter rent burden.

Katya & Ben, 2017; S.W. Liu, 2018 Scholars have mainly discussed the impact of housing price, fiscal expenditure, human capital and labor mobility on household consumption. In terms of the impact of housing price on residents' consumption, on review holds that housing price fluctuation is conducive to increases in residents' consumption through wealth effects. Others hold the view that the fluctuation of housing prices will crowd out residents' consumption.

Methodology

Nature of the study

The study is descriptive as well as analytical in nature. A multiple mixed research method that involves collection of qualitative and quantitative data was used. Quantitative data were subjected to inferential and descriptive statistics while qualitative data was subjected to content analysis.

Nature of data

This is the procedures employed to gather data relevant to the study. For the nature of this study, both primary and secondary data were used for the study.

Source of data

- Primary data were collected through well structured questionnaire. From such studies, the basic issues and household survey questionnaire was compiled. The socio- economic characteristics of ownership households and tenants were focused upon for the understanding of specific characteristics of both. However, we faced much difficulty in maintaining this method for selecting samples as during the survey, many households turned out to be locked with its members out for work, or many times, households refused to answer our questions.

Example

- Reconnaissance survey
- Questionnaire Administration
- Oral interview

The secondary data collected helped in the planning for the survey sample size, as well as a tentative slum selection. The secondary data were collected from various websites, journal, books, etc.

Method of sampling

Simple random sampling was used in this survey.

Size of the Samples

In order to have a successful result, only a small portion of the population was taken out of the total population of the study area. So, randomly chosen one hundred and twenty (120) house households respondents were picked as the sample size of the study area.

Tool for analysis

1. Simple Percentage analysis
2. Correlation
3. Table, Charts and diagrams

Limitations of the study

1. Level of freedom: The study is limited to a lease expires usually after one year and the renter is free to move on to another location with no penalty or less.
2. Very little maintenance: More free time is available to pursue other interest.
3. Up–front cash: Dramatically less than is necessary in the purchase of a home.

Data analysis

Table 1

Age wise of the respondents

S. No	Age	No of the Respondents	Percentage
1	20-30	26	22%
2	30-40	32	26%
3	40-50	23	19%
4	50-60	27	23%
5	Above 60	12	10%
	Total	120	100

Source: Primary data

This table shows that age wise classification of the respondents. Majority 27%of the respondents belong to the age group of 30-40 years, 23%of the sample respondents are belong to the age group of50-60, 22% of the sample respondents are belong to the age group of 20-30 years 19% of the sample respondents are belong to the age group of 40- 50 years, 10% of the sample respondents are belong to the age group of above 60 respectively.

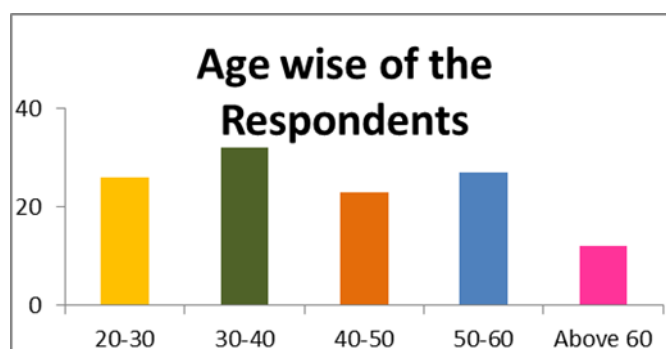


Table 2
Types of rent houses

S. No	Types of rent houses	House of the respondents	Percentage
1	Single family house	44	37%
2	Town house	12	10%
3	Duplex	14	12%

4	Apartment	4	3%
5	Lease	3	9%
6	Market rate rental housing	7	6%
7	Shelter	5	4%
8	Fully furnished house	6	5%
9	Compound house	25	14%
	Total	120	100

Source: Primary data

It is revealed that the type of the rented house among the sample respondents. In this study are totally nine types of rented houses available. According to their income they have chosen houses respectively.

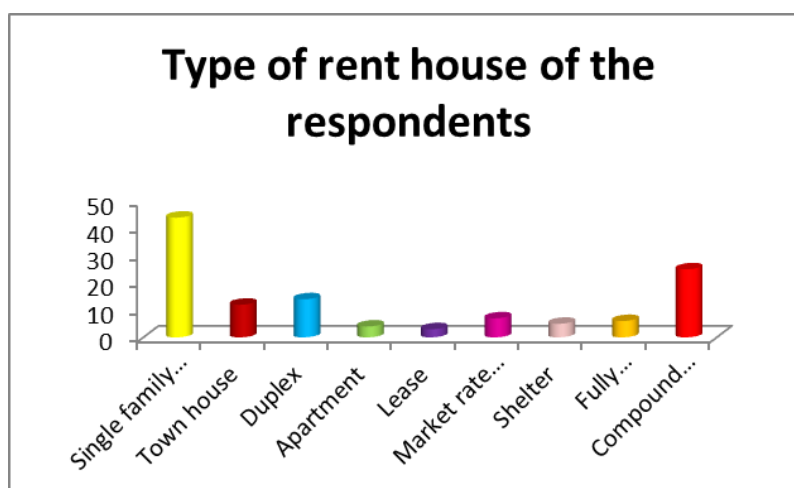


Table 3

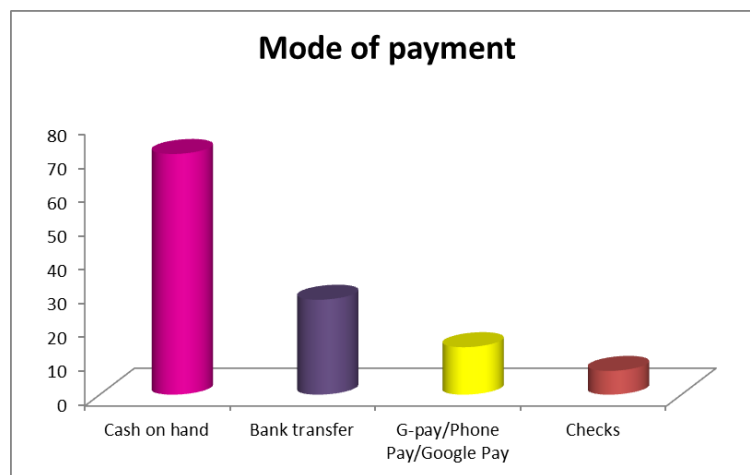
Mode of payment

S. No	Payments	Mode of payment	Percentage
1	Cash on hand	71	59%
2	Bank transfer	28	23%
3	G-pay/ Phone Pay/ Google Pay	14	12%

4	Checks	7	6%
	Total	120	100

Source: Primary data

This table clears that mode of payment of the rented houses. As per the statistical data 59%of the respondents they paid in cash on hand, 23%of the respondents mode is bank transfer,12%of the respondents they paid in G-Pay/ Phone Pay/ Google Pay 6%oftherespondentsmodeisbankcheckrespectively.



Findings, suggestions and conclusion

Findings

1. Majority 26 percentage of the respondents is belonging to the age group of 30-40 years.
2. Majority 37%of respondents rent house is single family house.
3. 59%of the respondent's mode of payment is cash on hand.

Suggestions

1. Discuss and formalize all additional costs, fee structures, utility and maintenance policies upfront before signing the rent agreement.
2. Several rental properties always find away to accumulate holes in the wall.
3. Damaged roof shingles can be as a result of wind or trees. However, you do not need to change the entire roof to fix this.
4. Negotiate and lock in fixed all inclusive monthly rental payments with limited or no separate maintenance bills.
5. Threaten to legally withhold future rent payments until the land lord completes essential repairs.

Conclusion

In India, households have strong preferences for ownership housing. A large part of the demand for rental housing emerges out of the inability of people to afford ownership housing. A successful ownership housing programme can help ease the situation in the rental housing market by reducing pressure on the demand for housing. The demand and supply of ownership and rental housing are linked in other ways also. Since a significant part of renting of houses, the increase in the number of households acquiring homes would automatically improve the availability of rental housing. In fact, the possibility of renting out part of the house improves the affordability of households to own a house. Thus improvement in the rental housing programmes can materialize if the increased accessibility of households to ownership housing is supplemented by reforms in two other areas. First one is design of houses so that part renting is feasible, and second one is rationalization of the rent control Act so that renting is remunerative. These measures however will solve only a part of the problem. If the increasing need for rental housing is growing in metropolitan areas is to be satisfied, institutional supply of rental housing will have to be augmented in a big way.

Bibliography

1. Sayyad, N., & Roy, A. (2003). Urban Informality. Berkeley: Lexington Books, Ballesteros, M. M. (2004).
2. Rental Housing for Urban Low Income Households in the Philippines. Philippines: Philippines Institute for Development Studies. Ballesteros, M. M. (2004, December).
3. Rental Housing for Urban Low-Income Households in the Philippines, Discussion Paper Series No. 2004-47. Philippine Institute for Development Studies, p. 1. Dev, S. (2006).

SOCIO ECONOMIC CONDITION OF MIGRATE PEOPLE IN PONNAGARAM THOOTHUKUDI

B. Mahesh Vanitha and M. Nanthini

PG Department of Economics, St. Mary's College (Autonomous), Thoothukudi
Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

Introduction

Migration is the geographic movement of people across specified boundary for the purpose of establishing a new permanent or semi permanent residence. Human migration is one of the most important aspects of social sciences. Migration is the barometer of changing socio- economic and political condition at the national and international levels. It is also a sign of wide disparities in economic and social conditions between the origin and destination. Uneven distribution of resources and population, unbalanced utilization of resources and variation in economic and cultural development has influenced the mobility of man from one region to another. In the developing country like India, masses of the poor, landless, illiterate and unskilled agricultural laborers and petty farmers from backward state migrate towards big metropolises. Such massive rural to metropolitan migration of distressed people is a typical characteristic of migration in India. Most of the out-migration of male population to other district occurs in district like Madurai Coimbatore, Chennai, Dindigul Viruthunagar, Ramanadu, particularly North Indian people experienced more number of migration mostly because of higher job opportunities, high daily wages, better quality of life and other economic and social reasons. This mobility of man has favorably or adversely influenced not only the socioeconomic condition of the area as well but also influenced the socioeconomic condition of human life. The migration aspects and socio- economic condition of slum in Thoothukudi district found that migrants are settled there for generation and having bad socio-economic condition and have come to this particular area because of cheap accommodation. The majority of the migrant workers working under the unhygienic conditions and these migrants prefer to live collectively by taking a room/house and share the rent. An analysis of migrants workers in found that 45 percent migrants workers are not in a position to pay rent of a room and they are bound to live under sheds, open spaces or in go downs, this clearly depicts their miserable condition of living, and economic factor is the real serious matter of concern for them.

Causes of Migration

The leading causes of migration are environmental, political, social, or economic. These factors may overlap; often, a reason for migration is a combination of factors. Some people argue that all migration is ultimately economically motivated, whether it's to improve one's status, escape poverty, or flee from a disaster. This is often true, but there are other aspects to migration as well. According to the United Nations International Organization for Migration (IOM), in 2020, 281 Million people, or 3.6 percent of all people in the world, were migrants. Many of these migrants embark on dangerous and sometimes fatal journeys to escape poverty or oppression in hopes of a better life.

The causes of migration generally are categorized as push and pull factors. Push factors cause a person to leave a place, whereas pull factors draw someone to a particular area. Push and pull factors usually have some relation to one another and can be thought of as two sides of the same coin. For example, if someone is leaving an area due to conflict (push factor), they are presumably going to a peaceful area (pull factor).

Environmental Reasons for Migration

Environmental factors that lead an area to be inhospitable or undesirable include natural disasters, famine, drought, or anything caused by nature that would drive someone to leave a place or go to another one. Environmental factors such as natural beauty, a safe place, or a favorable climate pull people to a particular environment.

Political Causes of Migration

Political causes of migration can include conflict, war, oppression, lack of liberty, and loss of human rights. Pull factors, on the other hand, could be things such as more human rights, social services provided by the government, a desire for liberty and equality, and the presence of strong institutions that protect rights and do not tolerate corruption.

Social Causes of Migration

Social causes can be easily mixed with political causes, and they often share many similarities, but social causes have to do more with the culture or people of a place rather than the government. However, the government can often be a reflection of the culture and people of a place. Social push factors may include discrimination or

oppression, especially when political protection is legally guaranteed but not practiced socially or culturally

Economic Causes of Migration

Economic causes of migration are a big reason for voluntary migration. Economic factors can be anything that would improve someone's economic status, such as leaving an area because of high unemployment or relocating to a country or area that has opportunities in a certain industry. Broader reasons for migrating that improve socioeconomic status might be access to better education, personal connections, or leaving the corrupt business culture of an area.

Scope of the Study

The subject matter of this study of rural out migration. The characteristics of migrants are discussed in this study. The causes of migration are analysed to find out which cause influence mostly the migration. The impact of migration on household in terms of asset creation and better standard of living is explored thoroughly. Further this study analyses the effect of migration such as personal changes, occupational changes and physical changes in the migration. The data will be collected one time examining what takes part their decision of migration and factors that pull and push from their place of origin.

Objectives

1. To analyse the specific reasons for migration of the sample respondents.
2. To study the socio - economic conditions of the migrant workers. (after/before)
3. To find out the major problems of the migrant workers of the study area.
4. To study about their income after migration.
5. To analyse the difficulties of languages after migration.

Review of Literature

Krishnakumar & Indumathi, 2014 Lack of public services like transportation, safety, seeking better environment and employment opportunities at destination.

Bijwaard, et.al, 2014 The unemployment and re-employment durations at the destination has an impact on the migration patterns of immigrants.

Wang, Rada et.al, 2014 Other studies also include the assessment of impact on agricultural production due to the migration of farmers from rural to urban area, impact on left behind children's welfare, their education, health among short term migrants

Methodology

The methodology adopted for the present investigation including selection of the household respondent and objectives of the study together with source of data, sample, selection, period of study, scope and significance of the study and statistical tools used for data analysis. The research work depends, mainly on primary data collected through survey, personal interviews and questionnaire.

Primary data

To collecting primary data, questionnaires have been distributed to the sample respondents to get information regarding the case study.

Secondary data

The secondary data also collected from various journals, books, newspaper, etc.

Sample size

For the present study from the migration in Ponnagaram. Totally 120 sample respondents selected by using simple random sampling method. The data was collected by interview using structured questionnaire.

Tools for analysis

Based on the nature of data and relevance of information required, statistical tools like percentage, bar diagram and averages were used for the analysis of data.

Period of the study

This study period is November 2023 to February 2024.

Table1

Gender of the Respondents

S. No	Gender	No of the Respondents	Percentage
1.	Male	62	52
2.	Female	58	48
	Total	120	100

Source: Primary data

This table clear that gender wise classification of the respondents. 52% of the respondents are male and 48% of the respondents are female respectively.

Gender of the Respondents

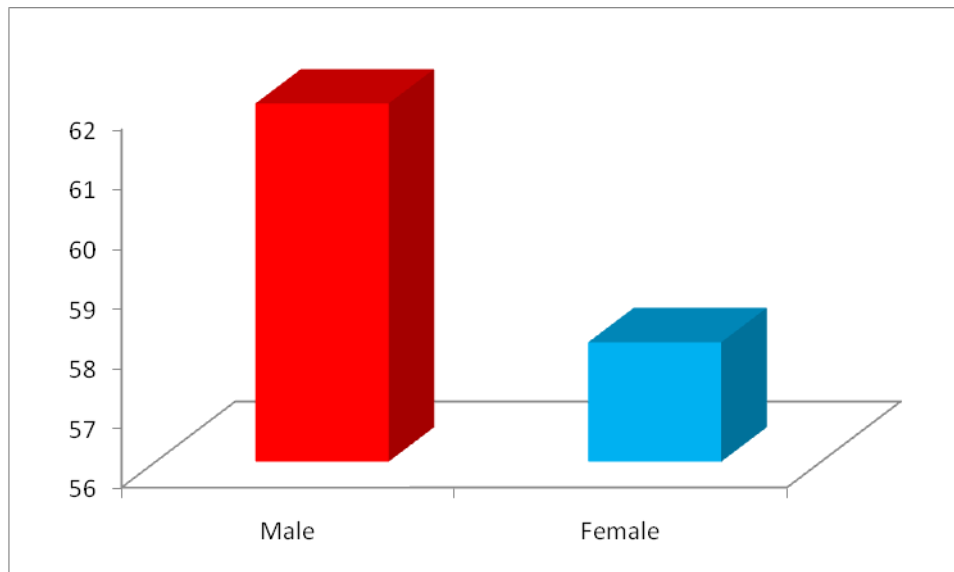


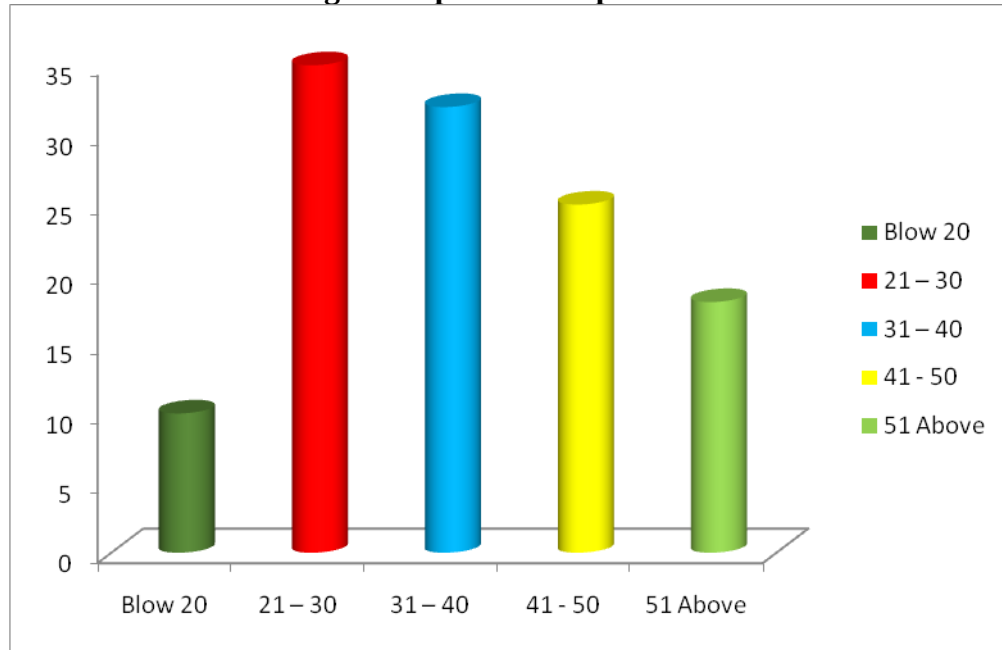
Table -2
Age Group of the Respondents

S. No	Age Group	No of the Respondents	Percentage
1.	Below 20	10	8
2.	21 – 30	35	29
3.	31 – 40	32	27
4.	41 - 50	25	21
5.	51 Above	18	15
	Total	120	100

Source: Primary data

This table clear that age wise of the respondents. 8% of the respondents belong to the age group of below 20 years, 29% of the respondents are belong to the age group of 21 – 30 years, 27% of the respondents are belong to the age group of 31 – 41years, 21% above of the respondents are belong to the age group 41 – 50years, and 15% of the respondents are of above 51years respectively.

Age Group of the Respondents

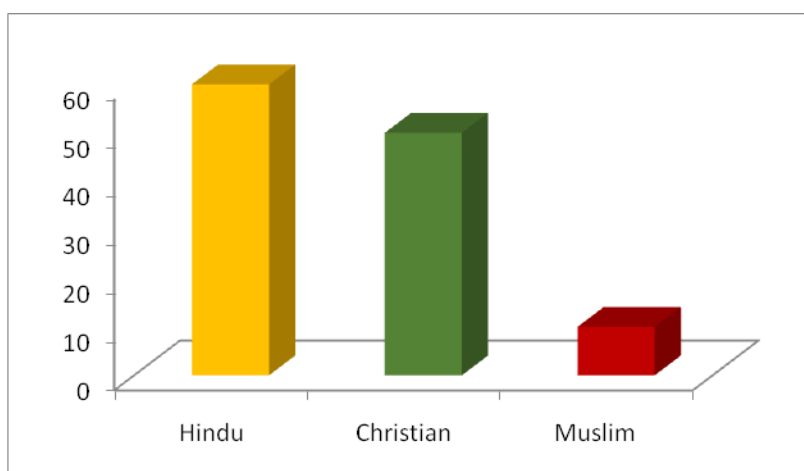


Religion of the Respondents

S. No	Religion	No of the Respondents	Percentage
1.	Hindu	60	50
2.	Christian	50	42
3.	Muslim	10	8
	Total	120	100

Source: Primary data

This table explains religion wise of the respondents. 50% of the sample respondents are Hindu, 42% of the sample respondents are Christian, 8% of the sample respondents are Muslim respectively.



Religion of the Respondents

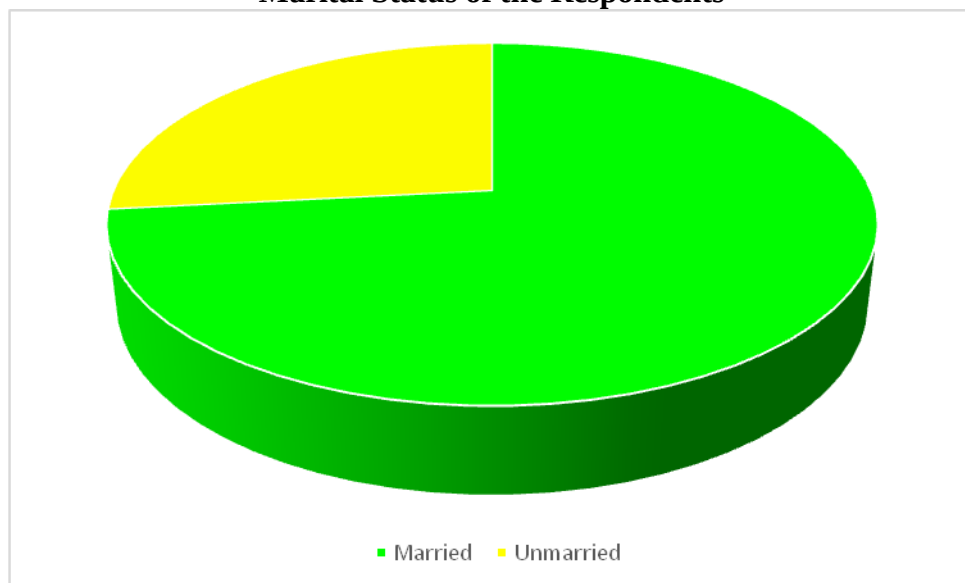
Marital Status of the Respondents

S. No	Marital Status	No of the Respondents	Percentage
1.	Married	88	73
2.	Unmarried	32	27
	Total	120	100

Source: Primary data

This table clear that marital status of the respondents. 73% of the sample respondents are married, 27% of the sample respondents are unmarried respectively.

Marital Status of the Respondents



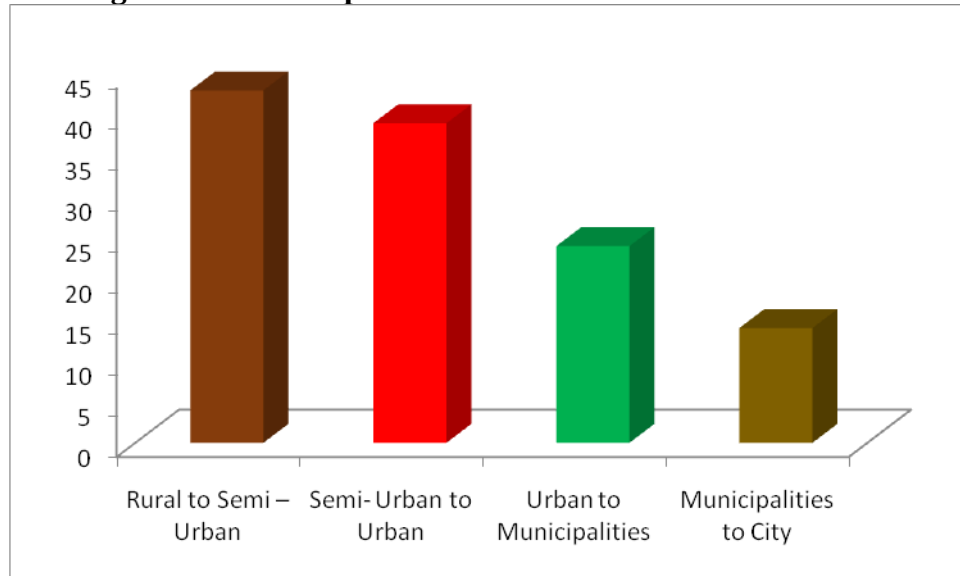
Place of migration of the respondents

S. No	Place of Migration	No of the Respondents	Percentage
1.	Rural to Semi – Urban	43	36
2.	Semi- Urban to Urban	39	32
3.	Urban to Municipalities	24	20
4.	Municipalities to City	14	12
	Total	120	100

Source: Primary data

This table clear that place of migration of the respondents. 36% of the respondents are migrated from rural to semi - urban, 32% of the respondents are semi - urban to urban, 20% of the respondents are urban to municipalities, and 12% of the respondents are municipalities to city.

Place of migration of the respondents



Findings:

1. Majority 52% of the respondents are male.
2. Majority of the sample respondents are belonging to the age group 21-30years.
3. 50% of the respondents are Hindu.
4. The majority 73%of the respondents were married.
5. 36% of the respondents are migrated from rural to semi – urban.

Suggestions

- The majority of the poor in India are found in the rural areas. Policies promoting rural development, establishing micro – enterprises, developing microfinance, and improving road infrastructure, are expected to decrease rural urban migration by improving the standard of living of people living in the rural areas.
- Developing productive capacity is synonymous to developing people's capacity by addressing health, education, sanitation and housing.
- The existing inter-state migration workman act should be effectively implemented to minimize the exploitation of innocent, and illiterate workers by the contractors, if not, fully prevented. The act is entitled to displacement allowances and journey allowances in addition to the fair wages.

Conclusion

Migration is stimulated by rational economic considerations of relative benefits and costs. The decision to migrate depends on expected rather than actual urban-rural wage differentials. The probability of obtaining an urban job is directly related to urban employment rate. High rates in excess of urban job opportunity

growth rates are possible and likely. This is due to imbalance of economic opportunities between urban and rural areas in most developing countries.

Migration is a process of social, cultural and psychological changes where an individual leaves one geographical area and settles down in a new geographical area. The reasons behind migration can be different, such as economic betterment, political upheaval, and education.

References

- Abu S. Shonchoy (2011), Seasonal Migration & Micro Credit in the Lean Period: Evidence from Northwest Bangladesh; IDE Discussion Paper No. 294.
- Priya Deshingkar & Matteo Sandi (December 2011), Migration & Human Development in India: New Challenges & Opportunities; Workshop Papers, Vol. 2, pp. 48-85, UNICEF in collaboration with ICSSR, New Delhi.
- Anupam Hazra (February 2012), Rural India: Still Floating Towards Cities; Kurukshatral Rural on Rural Development, Vol. 60, No. 4. pp. 3-5.

BIO - POTENTIALS OF GELIDIELLA ACEROSA

Joicy and Joys Selva Mary Albert

Department of Microbiology, St. Mary's College (Autonomous), Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India

ABSTRACT:

Seaweeds are considered as marine renewable sources and medicinal food of 21st century. The macrophytic algae known as seaweeds are very helpful and typically develop in shallow seas. *Gelidiella acerosa* is a member of the rhodophyta division and is found in the upper subtidal zone and shallow intertidal waters. It produces the highest-quality agar and is also a staple in ice cream, jelly candy, organic soap, and milk products. The phytochemical analysis of *Gelidiella acerosa* extracts revealed the presence of alkaloids, carbohydrates, phytosterols, tannins, quinones, sterols, coumarins, and cardiac glycosides, potentially contributing to antimicrobial, antioxidant, anti-inflammatory, and antiulcer activities. Aqueous extract displayed maximum antimicrobial activity against *Bacillus subtilis* and *Pseudomonas*, while acetonetic extract showed enhanced activity against *Staphylococcus aureus*, *Pseudomonas* and *Mucor*. Ethanolic extract exhibited broad-spectrum antimicrobial activity, notably against *Staphylococcus aureus*, *Pseudomonas* and *Aspergillus*. Scavenging activity increased with concentration, with ethanolic extract demonstrating superior activity compared to the control, approaching standard vitamin C levels, possibly due to flavonoid presence. Highest scavenging activity (75.02%) was observed at 100µg/ml concentration, highlighting the potential antioxidant benefits of *Gelidiella acerosa*. Polysaccharides, phenols, and flavonoids have demonstrated extensive utility within the pharmaceutical sector. Numerous pharmacological actions, including antibacterial, antioxidant, and anti-inflammatory properties, have been found for *Gelidiella acerosa*. It was concluded that marine macro algae from the south coast of Tamil Nadu are potential sources of bioactive compounds and should be investigated for natural antibiotics.

KEYWORDS: *Gelidiella acerosa*, Rhodophyta, Taxonomy, Phytochemicals, Antimicrobial, Well Diffusion, Antioxidant.

INTRODUCTION

Algae are a group of plants collectively known as seaweeds. Seaweeds, sometimes referred to as marine algae, are divided into three groups based on their chemical composition, pigments, and nutritional content phaeophyta (brown algae), chlorophyta (green algae), and rhodophyta (red algae). Almost 841 species of marine algae are found in both inter-tidal and deepwater regions of the Indian coast (Oza RM, Zaidi HS.A., 2000). They are full of organic and inorganic materials that are beneficial to human health. According to recent research, seaweeds have long been used as a traditional medicine to cure a wide range of illnesses.

The emergence and spread of resistant microbes continue to be a major public health concern. Effective treatment alternatives, particularly from traditionally used medicinal seaweeds, are needed. The main objective to be a global and incisive review of how seaweed can be a next generation material for drug manufacturing, reducing pressure in a terrestrial environment and promoting a healthier solution using the larger ecosystem in the planet Earth. seaweed would bring greater benefits with the continuous development and improvement of applications in various fields. It is an effective breakthrough to alleviate future resource crises. Terrestrial plants have yielded a variety of materials and applications. Food, medicine, fertiliser, colours, and many more areas are seeing an increase in these. Nonetheless, compared to terrestrial plants, marine algae are less frequently shown to have pharmaceutical and therapeutic applications.

At the moment, seaweed is the subject of numerous investigations. The research specifically describes investigations on the red seaweed *Gelidiella acerosa*'s ability to inhibit the growth of microorganism. *Gelidiella acerosa* (Forsskal) is a genus of red algae with high economic value found in sub tidal areas in many parts of India and other countries. (Figure 1).

The current study is to conduct phytochemical screening, antimicrobial activity and antioxidant, evaluation of selected traditionally used medicinal seaweed in gulf of mannar region. In the present study, beneficial aspects of marine red algae of *Gelidiella acerosa* have been discussed.

Taxonomic Hierachy Of *Gelidiellaacerosa*:

Kingdom	-	Plantae
Subkingdom	-	Biliphyta
Division	-	Rhodophyta
Subdivision	-	Eurhodophytina
Class	-	Florideophyceae
Subclass	-	Rhodymeniophycidae
Order	-	Gelidiales
Family	-	Gelidiellaceae
Genus	-	<i>Gelidiella (Forsskal)</i>
Species	-	<i>Gelidiella acerosa</i>



Figure1:*Gelidiella acerosa*

in its original marine habitat

Distribution and Habitat :

Gelidiella acerosa is found in the Indo-pacific and Atlantic oceans, growing at a depth of 0-47m. It grows in exposed or shaded areas, inhabited in shallow waters of intertidal and upper sub tidal zone, attached to calcareous substrates such as rocks covered by crustose algae, coralline rocks, and on sandstones or shells of molluscs. It is also found in tide pools with relatively high changes in water temperature, pH, salinity, and degree of exposure to air are influenced by tides. It is an abundantly growing seaweed in Coastal areas of south India. It occurs in inter tidal region of Gulf of Mannar, Southeast coast of India. Tropical climate is favorable for its growth.

Morphological Characteristics

The plants of *Gelidiella acerosa* are elastic, cartilaginous or prostrate, which grow along shorelines on dead corals or rocks in the intertidal zones with strong wave activity. These plants are of reddish to purple colour in shaded upper and lower intertidal regions

while greenish brown to yellowish brown in upper intertidal areas and shallow waters. The branches are decumbent, erect and prostrate and are pinnately arranged. Ramuli are the filiform lateral branchlets which are 1-6 mm long, acuminate and upcurved. Second degree ramuli may develop from the few lateral branches.

MATERIALS AND METHODS:

Sample Collection:

Collection of sea weed materials from keelakarai coast, Tamil Nadu, India and Certified by Department of Botany at St.Mary's College (Autonomous) Thoothukudi. Individually it was handpicked and washed thoroughly with seawater on the shore and washed again with a tap water to remove salt on the surface of the samples and under shade dried for 15-25 days. After drying it was ground thoroughly to powder and used for further analysis.

Preparation of solvent extraction:

The air dried powder of the red algae of *Gelidiella acerosa* was weighed and it was subjected to soxhlet extraction with aqueous, acetone and ethanol as solvent for up to 8 hrs the extraction process was continued. To 500 ml of the solvent 50 gm of dried powder was added to obtain 10% concentration of the extract. The solution after 8hrs with mixture of *Gelidiella acerosa* seaweed powder and solvent was evaporated at room temperature in a flat tray for 24-48hrs. The crude extract was collected and stored at 4°C for further analysis after it evaporated.

Phytochemical Activity:

The sea weed of *Gelidiella acerosa* was shade dried then powdered and subjected to soxhlet extraction with aqueous, acetone and ethanol as solvents. *Gelidiella acerosa* with aqueous, acetone and ethanol were subjected to various qualitative test for the identification of seaweed constituent present in the species.

Qualitative analysis of phytochemicals:

1.Test for Alkaloids

To 1ml of the seaweed extract, drop of Major's reagent was added on the side of the test

tube. Acreamy or white precipitate indicates the test is positive.

2.Test for Carbohydrates:

To 2 ml of the seaweed extract, 1ml of Molish reagent and few drops of conc.H₂SO₄were added. Presence of purple or reddish brown colour indicate the presence of carbohydrates.

3.Test for Saponins:

To 2ml of seaweed extract, 2ml of distilled water was added and gently shaken for 10 mins. length wise. Formation of 1cm layer of foam indicate the presence of saponins.

4.Test for Phytosterols:

To 2ml of seaweed extract 1ml of 2N acetic hydroxide was added. To this 1 or 2 drop of concentrated sulphuric acid added slowly along the sides of the test tube. An array of colour change indicate the presence of phytosterols.

5.Test for Ferric Chloride:

A few drops of 1ml of seaweed extract, 2ml of FeCl₂ was added. Formation of dark blue or greenish black color indicate presence of phenolic compounds.

6.Test for Tannins:

About 0.25 gram of dried powdered sample was boiled in 20ml of water in test tube then filtered. A few drops of 0.1ml of ferric chloride was added and observed the brownish green or blue back colouration.

7. Test for Flavonoids:

To 2ml of seaweed extract 1ml of 2N sodium hydroxide was added. Presence of yellow colour indicate the presence of flavonoids.

8. Test for Terpenoids:

To 0.5 ml of extract ,2ml chloroform was added along with concentrated sulphuric acid carefully. Formation of reddish brown colour at the interface indicate presence of terpenoids.

9. Test for Phlobatannins:

Formation of red precipitate when seaweed extracts of the sample was boiled with 1% aqueous hydrochloric acid indicates the presence of phlobatannins.

10. Test for Quinones:

To 1ml of extract 2ml of distilled water and few drops of 10% FeCl_2 was added. Formation of blue or green colour indicate the presence of quinones.

11. Test for Sterols:

5ml of extract was mixed with 2ml of chloroform and 3ml of conc. H_2SO_4 was carefully added to form a layer. A reddish brown coloration is observed at the interface in presence of sterols.

12. Test for Coumarins:

To 1ml of extract and 1 ml of 10% NaOH was added. Formation of yellow colour indicate the presence of coumarins.

13. Test for Cardiac Glycosides:

To 0.5ml of the seaweed extract 2ml of glacial acetic acid and few drops of FeCl_2 was added. It was layered with 1ml conc. H_2SO_4 . Formation of brown color indicate the presence of cardiac glycoside.

14. Test for Anthraquinones:

To 1ml of seaweed extract, few drops of 10% ammonia solution were added. Appearance of pink colour precipitate indicate the presence of anthraquinone.

Antimicrobial Activity- Well Diffusion Method:

Well diffusion assay was carried out to check the antimicrobial activity of *Gelidiella acerosa* against *Staphylococcus aureus*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Enterobacter* and fungal species of *Aspergillus* and *Mucor*. The antibacterial activity was done using Muller Hinton Agar and the antifungal activity was done using Sabouraud Dextrose Agar. Overnight bacterial culture was added to the surface of agar plates. Culture was spread to form a uniform bacterial lawn. 5mm diameter hollow tube was used to prepare the wells on each plate, and then the aqueous, acetonic and ethanolic extracts of *Gelidiella acerosa*, positive (Streptomycin antibiotic) and negative control (DMSO) were added into the respective wells. The plates were then incubated for 18-24 hrs at 37°C in an incubator. After incubation observed as zones of inhibition and measured the diameter.

Antioxidant Activity:

Chemicals and reagents:

2,2-Diphenyl-1-picrylhydrazyl (DPPH) and ascorbic acid was purchased from Sigma-Aldrich. Phosphate buffer (pH-7.4) and Methanol. All the chemicals and solvents used were of analytical grade.

DPPH free radical scavenging activity:

DPPH solution (0.004 %), sample extracts and standard (vitamin C) was prepared in methanol. Sample extract and standard (vitamin C) solution were prepared in different concentrations 20, 40, 60, 80 and 100 µg/ml. 0.5ml of different concentrations of standard solution or sample extracts was taken in different test tubes and then 0.5ml of DPPH (0.004%) solution was added and kept in dark for 30 min. and absorbance was recorded at 517 nm. The decrease in absorbance of the DPPH radical caused by antioxidant was due to the scavenging of the radical by hydrogen donation. It was visually noticeable as a colour change from purple to yellow. (Majo., 2008) The percentage inhibition activity was calculated using the formulae below:

$$\% \text{DPPH free radical scavenging} = \frac{(\text{Absorbance of control} - \text{Absorbance of test})}{\text{Absorbance of control}} \times 100$$

RESULT AND DISCUSSION:

Table1. Presence of phytochemicals in aqueous, acetone and ethanolic extracts of *Gelidiella acerosa*.

The presence of alkaloids, saponins, flavonoids, carbohydrates, phytosterols,

S.NO	PHYTOCHEMICAL TEST	AQUEOUS EXTRACT OF <i>GELIDIELLA ACEROSA</i>	ACETONE EXTRACT OF <i>GELIDIELLA ACEROSA</i>	ETHANOLIC EXTRACT OF <i>GELIDIELLA ACEROSA</i>
1	ALKALOIDS	-	+	+
2	CARBOHYDRATE	+	+	+
3	SAPONINS	-	-	+
4	PHYTOSTEROL	+	+	+
5	FERRIC CHLORIDE	-	+	-
6	TANNINS	-	+	+
7	FLAVONOIDS	+	-	+
8	TERPENOIDES	-	+	+
9	PHLOBATANINIS	-	-	-
10	QUINONES	+	+	+
11	STEROLS	+	+	+
12	COUMARINES	-	+	+
13	CARDIAC GLYCOSIDES	+	+	+
14	ANTHRAQUINONE	-	-	-

quinones, sterols, coumarines, cardiac glycosides and tannins in the ethanolic extract of *Gelidiella acerosa* in the present study indicated that the secondary metabolites of these sea weed may be used for the treatment of various diseases. mFlavonoids are also known as vitamin which were present in high quantities. Carbohydrate is reported to have numerous role in living things, such as the storage and transport of energy and structural components. Saponins present in seaweed, have been suggested as possible anticarcinogenic. Steroids may bestow cytotoxic activity against a wide range of organisms, ranging from bacteria and fungi.

Antimicrobial Activity-Well Diffusion Method:

After incubation of agar plates, zone of inhibition was shown by Aqueous, Acetonic and Ethanolic extract of *Gelidiella acerosa* against the bacterial pathogens of *E.coli*, *Staphylococcus aureus* and *Pseudomonas aeruginosa* and *Enterobacter* and the fungal pathogens of *Aspergillus* and *Mucor*.

Table 2. Invitro antimicrobial activity of the ethanolic extract of theseaweed *Gelidella acerosa* against the selected pathogens.

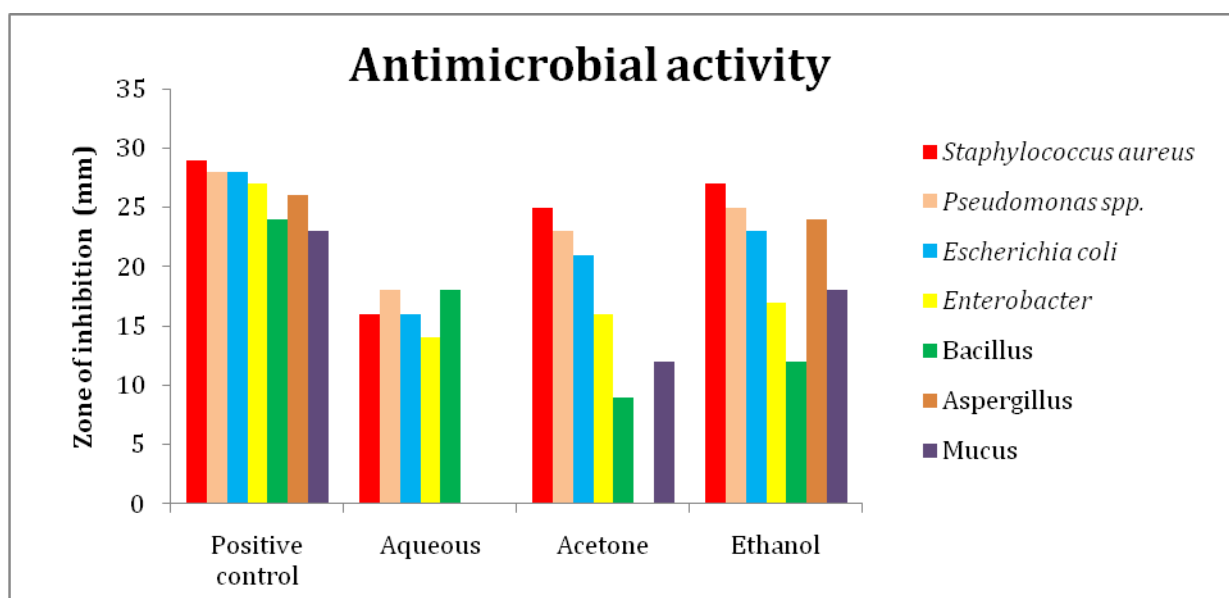
Human Pathogen			Zone of inhibition (mm)			
			Negative control	Positive control	Aqueous	Acetone
Gram positive bacteria	<i>Staphylococcus aureus</i>	-	29mm	16mm	25mm	27mm
	<i>Bacillus</i>	-	24mm	18mm	09mm	12mm
Gram negative bacteria	<i>Pseudomonas</i>	-	28mm	18mm	23mm	25mm
	<i>Escherichia coli</i>	-	28mm	16mm	21mm	23mm
	<i>Enterobacter</i>	-	27mm	14mm	16mm	17mm
Fungi	<i>Aspergillus</i>	-	26mm	0	0	24mm
	<i>Mucus</i>	-	23mm	0	12mm	18mm

Bacteria - Positive control(Streptomycin)

Fungi - Positive control(Ketoconazole)

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ve control for bacteria and fungi

In the present study, the antimicrobial activity was analysed in the seaweed extracts of *Gelidiella acerosa*. These extracts demonstrated bactericidal and bacteriostatic and fungaistatic activities against microbial isolates, with the ethanolic extract displaying maximum inhibition against *Staphylococcus aureus* and *Aspergillus* sp. Ethanolic extract of *Gelidiella acerosa* showed maximum activity against gram positive *Staphylococcus aureus* (27mm), gram negative *Pseudomonas* (25mm) and *Aspergillus* (24mm), minimum activity against gram positive *Bacillus subtilis* (12mm), gram negative *Enterobacter* (17mm) and *Mucus* (18mm).

Antioxidant Activity:

Table3. Antioxidant effect of sample-(*Gelidiella acerosa* extract) on

DPPH

Treatment	Dose(µg/ml)	Absorbance @ 517 nm	%activity against DPPH radicals
Control	---	DPPH control = 0.993	---
Vit C	100	0.188	80.36
Sample2	20	0.452	54.48
Sample2	40	0.394	60.32
Sample2	60	0.302	69.58
Sample2	80	0.262	73.61
Sample2	100	0.248	75.02

Suganthy *et al.*, (2013), evaluated in vitro antioxidant potential and metal chelating activity of various solvent fractions of *Gelidiella acerosa*. In the present study the scavenging activity was increasing concentration from 20-100 µg/ml but the scavenging activity of the ethanolic extract of *Gelidiella acerosa* showed good result than the control but more or less to standard. The result indicates that the experiment reduce the radical to the corresponding hydrazine exhibiting better free radical scavenging activity near to the standard vitamin C.

The highest scavenging was observed in the 100µg/ml concentration of ethanolic extract 75.02% and the lowest activity was observed in 20µg/ml concentration of ethanolic extract 54.48% respectively. The anti-oxidant activity may be due to presence of flavonoids. The effect of antioxidant on DPPH radical scavenging is through to be due to their hydrogen denoting ability. Phyto constituents like tannins, flavonoids, terpenoids have been implicated as antioxidants in the scavenging radical.

CONCLUSION:

The comprehensive analysis of *Gelidiella acerosa* extracts unveiled a rich array of secondary metabolites with potential therapeutic benefits. The potential for using marine resources for human benefit is enormous. Rhodophyta *Gelidiella acerosa* is said to contain a wide range of phytoconstituents, such as phenols, flavonoids, alkaloids, tannins, and terpenoids, among others, which help to explain its potent pharmacological effects. The demonstrated antimicrobial and anti-oxidant suggest its promising role in pharmaceutical and agricultural industries. The potential for using marine resources for human benefit is enormous.

Further research should be done to identify and confirm additional possible phyto constituents and pharmacological properties from various solvent extracts of the seaweed *Gelidiella acerosa*, such as anti-diabetic, anti-obesity, anti-viral, and wound-healing properties.

REFERENCES:

1. Barbosa JP, Pereira RC, Abrantes JL, Dos Santos CCC, Rebello MA, Frugulhetti ICPP *et al.* In vitro antiviral diterpenes from the Brazilian brown alga *Dictyota paffii*. *Planta Medica* 2004; 70:856-860.

2. Bernecker A, In Whertmann IS and Cortes J. Marine benthic algae. Marine Biodiversity of Costa Rica, Central America Springer 2009; 538:109-118.
3. Blunden G. Marine algae as sources of biologically active compounds. Interdisciplinary Science Reviews 1993; 18:73– 80.
4. Di Majo, D., Giammanco, M., La Guardia, M., Tripoli, E., Giammanco, S., & Finotti, E. (2008). The antioxidant capacity of red wine in relationship with its polyphenolic constituents. Food Chemistry, 111(1), 45-49.
5. Kuda T, Taniguchi E, Nishizawa M, Araki Y. Fate of watersoluble polysaccharides in dried Chorda filuma brown alga during water washing. Journal of Food Composition and Analysis 2002; 15:3-9.
6. Manivannan K, Thirumaran G, Karthikai Devi G, Anantharaman P and Balasubramanian T. Proximate Composition of Different Group of Seaweeds from Vedalai Coastal Waters (Gulf of Mannar): Southeast Coast of India. Middle-East Journal of Scientific Research 2009; 4 (2):72- 77.
7. MD Guiry in Guiry MD & Guiry GM. AlgaeBase. Worldwide electronic publication, National University of Ireland, Galway. [Updated 2017 March 28; cited 2017 March 30].
8. Miyashita K. Seaweed carotenoid fucoxanthin with highly bioactive and nutritional activities. Journal of Marine Biosciences and Biotechnology 2006; 1:48–58.
9. Oumaskour K, Boujaber N, Etahiri S, Assobhei O. Screening of antibacterial and antifungal activities in green and brown algae from the coast of Sidi Bouzid (El Jadida, Morocco). African Journal of Biotechnology 2012; 11(104):16831- 16837.
10. Oza RM, Zaidi HS. A Revised Checklist of Indian Marine Algae. Central Salt and Marine Chemicals Research Institute, Bhavanagar India; 2000:296.
11. Sachindra NM, Airanthi MKWA, Hosokawa M, Miyashita K. Radical scavenging and singlet oxygen quenching activity of extracts from Indian seaweeds. Journal of Food Science and Technology 2010; 47(1):94–99.
12. Smit AJ. Medicinal and pharmaceutical uses of seaweed natural products. A review. Journal of Applied Phycology 2004; 16(4):245–262.
13. Suganthi N, Nisha SA, Pandian SK, Devi KP. Evaluation of Gelidiella acerosa, the red algae inhabiting south Indian coastal area for antioxidant and metal chelating

potential. *Biomedicine and Preventive Nutrition*.2013;3-4:399-406.

14. Syad Nisha A, Pandima Devi K. Assessment of mutagenic effect of *G. acerosa* and *S. wightii* in *S. typhimurium* (TA 98, TA 100, and TA 1538 strains) and evaluation of their cytotoxic and genotoxic effect in human mononuclear cells: a nonclinical study. *BioMed Research International* 2014;1-14.
15. Taskin E, Ozturk M, Taskin E, Kurt O. Antibacterial activities of some marine algae from the Aegean Sea (Turkey). *African Journal of Biotechnology* 2007; 6 (24):2746-2751.
15. Trono GC Jr. Seaweeds. In: Carpenter KE, Neim VH (eds.). *The living marine resources of the western central pacific*. Vol. 1. FAO species identification guide for fishery purposes, Food and Agricultural Organization, Rome 2001; 19-99.
16. Yuan YV, Walsh NA. Antioxidant and anti proliferative activities of extracts from variety of edible seaweeds. *Food and Chemical Toxicology* 2006; 44:1144–1150.

**A STUDY ON SEPARATION, ANTIBACTERIAL, ANTIOXIDANT AND
PHYTOCHEMICAL ANALYSIS OF BETALAIN PIGMENT FROM RED DRAGON
AND PRICKLY PEAR FRUIT AND USED AS A NATURAL COLORANT FOR
LIPSTICK**

Joselin Starina.D* and C.Siluvai Kirubagari Aneeshia

Department of Microbiology, St.Mary's College (Autonomous), Thoothukudi.

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT :

Synthetic dyes were mostly utilised in the production of commercial lipsticks. However, the usage of synthetic dye has been associated with many health problems. Natural colorant might offer a promising solution to this problem. The betalains which are found in Red dragon fruits (*Hylocereus polyrhizus*) and Prickly Pear (*Opuntia stricta*) have drawn attention as a potential source of natural colorant to synthetic dye. The Phytochemical and Antioxidant activity were performed for the extracts of *Hylocereus polyrhizus* and *Opuntia stricta*. The Antibacterial activity was done against *E. coli*, *Pseudomonas aeruginosa* and *Staphylococcus aureus*. The purpose of this study was to formulate lipsticks with betalains. In this research, Betalains was extracted from flesh of red dragon fruit and Prickly bear fruit using ethanol at ratio of 1: 3 and the concentrated betalains extract were used for the production of Lipstick. The betalains pigment were then used to formulate lipsticks with basic lipstick formula and the formulated lipsticks were store under light or dark condition. The physico-chemical properties of the synthesised lipstick such as spreadability, skin irritation test, surface anomalies, melting point and colour were determined. This study has proven that betalains could replace synthetic dye in cosmetics industry for lipstick application.

KEYWORDS : Lipstick, Betalains, *Hylocereus polyrhizus*, *Opuntia stricta* .

INTRODUCTION :

Nowadays, the whole world is turning towards the use of traditional products and adopting more natural way of life through increased use of herbal products in their daily life. People are more interested in natural food, herbal medicines and traditional practices for healthy life. Higher demands were seen for the natural products cultivated through biological/organic farming without any used of chemicals and pesticides. Recently, herbal cosmetics are pushing

through the cosmetics industry in the world and the demand for the herbal cosmetics is rising and quite significant .

Herb is known as a symbol of safety in contrast to synthetic products which portray negativity especially on human health. Currently, consumers not only care for their outer appearances but they are also aware of their health. The herbal users give priority to their health care needs, making them opt for herbal products than synthetic lipsticks. (N. N. Azwanida *et.al.*, 2014).

Health Defects from Commercial lipsticks :

In this modern time and age, lipstick has diversified to moisturising, glossy, matte, sheer, satin, frosted, and pearl, just to mention but a few. The characteristic sign of lipsticks is mainly their colour, which is a result of the pigmentation drawn from minerals or organics, for instance, from lead, cadmium, chromium, cobalt, and nickel, among others. Lipsticks that contain dyes are obtained from lead, suggests that the metallic properties in these lipsticks could also be attributable to their process of manufacture by the machines used. Lipsticks present in the market sometimes contain the heavy metals mentioned above, which are harmful to consumers in the long run. The average woman is said to ingest up to 4.5 pounds of lipstick in a life time since wearing lipstick; there are possibilities of licking, drinking or eating the lipstick ; hence accumulation of heavy metals in the body. Lead accumulation causes disorders of the central nervous system, reproductive system (infertility and miscarriage), hepatic and renal system, and decreased learning and hearing. Furthermore, cadmium is associated with atherosclerosis, hypertension, and cardiovascular diseases. In addition, cadmium and lead are carcinogenic in nature (WHO, 2004). (Rose Obate *et.al.*, 2022).

Betalains as Alternate Dye for Lipstick Production :

Betalains are the plant pigments. Its purple-red colour is due to the presence of betalain pigments. Betalains are water-soluble nitrogenous pigments and are divided into two classes: red-violet betacyanin and yellow betaxanthin, which provide beet roots with their typical colour. The chemical structure of betalains has no toxic effects on the human body and are seen as a natural and safe alternative to synthetic red dyes. Natural pigments such as betalains may therefore become increasingly used in food products. Betalains are pigments of about 17 families of plants belonging to the order Caryophyllales. Dietary betalains may play an important role in

maintaining human health because of their many beneficial activities. There are numerous data on the health effects of betalains.

For natural source, we selected the betalain contained *Hylocereus polyrhizus* fruits and *Opuntia stricta* fruits.

***Hylocereus Polyrhizus* :**

The red pitaya is known as a red dragon fruit (*Hylocereus polyrhizus*). It is one of the tropical fruits in the cactus family, Cactaceae. Dragon fruit plants were first discovered in Mexico and then have been developed mostly in tropical countries such as Malaysia, the Philippines, and Indonesia. In general, there are four types commonly found in Indonesian markets, i.e., red dragon fruit (*H. polyrhizus*) and white dragon fruit (*Hylocereus undatus*).

***Opuntia Stricta* :**

Opuntia stricta is a species of large cactus that is endemic to the subtropical and tropical coastal areas of the America, especially around the Caribbean. Common names include erect prickly pear and nopal estricto .It producing lemon yellow flowers in the spring and summer, followed by purplish-red fruits. It is quick to colonize hot, open environments with sandy soils.

MATERIALS AND METHODS :

Sample Collection :

The *Hylocereus polyrhizus* fruits (Red dragon fruits) were purchased from the markets of Pondichery. The *Opuntia stricta* fruits (Prickly Pear) were collected from the region of Kalakad, Tirunelveli district. The Fruits were taken to the laboratory as soon as they were collected.

Extraction and Purification of Betalains from *Hylocereus polyrhizus* and *Opuntia stricta* :

Fresh Red dragon fruits (*Hylocereus polyrhizus*) and fresh Prickly pear fruits (*Opuntia stricta*) were collected and washed with tap water to remove the dirt and dust on the surface of the fruits. Then, both the fruits were cut and the flesh was blended for 30 seconds in a blender. After that, the blended flesh was homogenized at a ratio of 1:3 with ethanol (95 % v/v). The solution was kept for 15 min for betalains to leach out from the red dragon fruit juice and prickly pear fruit juice. After that, the fruit juices were sieved separately to remove the seeds that found in the fruits. The solutions obtained were stored in two separate containers in a dark place.

Phytochemical Activity :

To identify the chemical constituents of fruit extracts by standard procedures have been followed. The crude extracts were qualitatively tested for the presence of chemical constituents using the following reagents and chemicals.

Test for Terpenoids :

Chloroform test: To 5 ml of the extract few drops of chloroform and concentrated H₂SO₄ was added carefully along the sides of the test tube. Formation of brown color at interface was a positive indicator.

Test for Anthraquinones :

0.5 ml of extracts were boiled in 10% hydrochloric acid and filtered hot. To this, 2 ml chloroform and 10% ammonia solution each were added. Formation of pink color in the aqueous layer indicated presence of anthraquinones.

Test for Saponins :

Foam test: To 1 ml of the extracts 5 ml distilled water was added and shaken vigorously. Formation of foam indicated presence of saponins.

Test for Tannins :

Lead acetate test: The sample were treated with 10% lead acetate solution; appearance of white precipitate indicated the presence of tannins. When the extract was treated with aqueous bromine solution, appearance of white precipitate indicated the presence of tannins.

Test for Phenols :

Ferric chloride test: A fraction of the extracts were treated with 5% ferric chloride solution and observed for the formation of deep blue or black colour.

Test for Flavanoids :

Shinoda test: Sample extracts were treated with 5 ml of 95% ethanol; few drops of concentrated Hydrochloric acid and 0.5g of magnesium turnings were also added. Pink colour was observed.

Test for Steroids :

Salkowski's test: Sample (2 ml) was mixed with 2 ml of concentrated Sulphuric acid, it was well shaken then chloroform layer appeared red and acid layer shown greenish yellow fluorescence.

Test for Alkaloids :

Mayer's test: Sample (2-3 ml) was treated with few drops of Mayer's reagent. Appearance of white precipitate indicated the presence of alkaloids.

Antibacterial Activity - Well Diffusion Method :

Well diffusion assay was carried out to check the antibacterial activity of *Hylocereus polyrhizus* extract and *Opuntia stricta* extract against *Staphylococcus aureus*, *Escherichia coli*, *Pseudomonas aeruginosa*. The sterile cotton swab was then dipped into the inoculum and the surface of the agar plate was swabbed. 5mm diameter hollow tube was used to prepare the wells on each plate, and then the fruit extracts were added into the respective wells. Four wells were made, one is for *Hylocereus polyrhizus* fruit extract, second well is for *Opuntia stricta* fruit extract, the third well is for positive control (Streptomycin antibiotic) and the last well is for negative control (DMSO). The plates were then incubated for 18-24 hr at 37°C in an incubator.

Antioxidant Activity :

Chemicals and reagents:

2,2-Diphenyl-1-picrylhydrazyl (DPPH) and ascorbic acid was purchased from Sigma-Aldrich. Phosphate buffer (pH- 7.4) and Methanol. All the chemicals and solvents used were of analytical grade.

DPPH free radical scavenging activity:

DPPH solution (0.004 %), sample extracts and standard (vitamin C) was prepared in methanol. Sample extract and standard (vitamin C) solution were prepared in different concentrations 20, 40, 60, 80 and 100 µg/ml. 0.5ml of different concentrations of standard solution or sample extracts was taken in different test tubes and then 0.5 ml of DPPH (0.004 %) solution was added and kept in dark for 30 min. and absorbance was recorded at 517 nm. The decrease in absorbance of the DPPH radical caused by antioxidant was due to the scavenging of the radical by hydrogen donation. It was visually noticeable as a colour change from purple to yellow. (Majo ., 2008) The percentage inhibition activity was calculated using the formulae below:

$$\% \text{ DPPH free radical scavenging} = \frac{(\text{Absorbance of control} - \text{Absorbance of test})}{\text{Absorbance of control}} \times 100$$

Preparation Of Lipstick :

The formulation of *Hylocereus polyrhizus* and *Opuntia stricta* lipsticks with betalains pigment was based on the formula informed below.

Table 1: Ingredients for Lipstick Formulation

Ingredients	Composition Per Lipstick	Importance
Bees wax	0.32 g	Provide hardness and glossy.
Carnauba wax	0.15 g	Provide hardness.
Candelilla wax	0.38 g	Provide hardness.
Shea Butter	1 g	Used as emollient.
Castor oil	1.4 g	Aid in blending.
Jojoba oil	0.5 g	Used as moisturizer.
Sweet Almond Oil	0.5 g	Used as moisturizer.
Fragrance	Few Drops	Used to provide fragrance.
Vit E	Few Drops	Used as anti – oxidant.
Betalains Extract	5 ml	Used as natural colorant.

Formulation Of Lipstick :

The betalains extracts were mixed with swemond oil and jojoba oil in a small beaker (beaker A) and stir continuously to ensure the pigment well dispersed in the mixture. All waxes, shea butter, and castor oil were measured in another small beaker (beaker B) and heated in water bath at 80°C with gentle stirring until beeswax melts completely. Both mixtures were then mixed together with spatula in water bath until uniform colour was achieved. Then, the mixture was

remove from heat source. A few drops of vitamin E and fragrance oil were added to the mixture and the mixture was stirred again to ensure evenly blending of all ingredients.

A little amount of oil was applied on the surface of the lipstick mould to ease the process of removing lipstick from the mould. After blending vitamin E and fragrance oil into the lipstick formula, the mixture was poured into lipstick mould. The mould was chilled immediately in the fridge for 15 minutes to solidify the lipstick mixture. When demoulding, the lipstick were lift upwards carefully. At this point, the lipstick was done. The betalains lipsticks were stored at room temperature with the storage concept under light or dark condition.

Evaluation of Lipstick :

The formulated lipsticks were tested with its spreadability, melting point, surface anomalies and skin irritation test.

Spreadability Test :

Spreadability test were conducted for the lipsticks at room temperature. The lipsticks were applied at least 3 cm onto a paper in order to visually observe the smoothness and uniformity of a protective layer formation from the lipsticks.

Melting Point :

The melting point of lipsticks were determined by heating lipsticks using double boiler method in water bath. A thermometer was immersed in the water bath to determine to melting point of the lipsticks. The melting point was determined by the thermometer at the moment when the lipsticks started to melt.

Surface Anomalies :

Surface anomalies analysis was used to determine the surface defect by visual observation. Surface defects such as crystal and fungi formation, wrinkles formation indicated that the lipsticks were contaminated.

Skin Irritation Test:

The lipsticks were applied on skin and left for 5 minutes. The lipsticks were tested with few respondents with skin conditions.

Colour : The colour of the prepared lipsticks were analysed.

RESULT AND DISCUSSION :

Table 2. Results for Phytochemical activity of *Hylocereus polyrhizus* and *Opuntia stricta*

PHYTOCHEMICAL ANALYSIS	<i>HYLOCEREUS POLYRHIZUS</i>	<i>OPUNTIA STRICTA</i>
TERPENOIDS	POSITIVE (Presence of Brown Colour)	POSITIVE (Presence of Brown Colour)
ANTHRAQUINONES	POSITIVE (Presence of Pink colour in aqueous layer)	POSITIVE (Presence of Pink colour in aqueous layer)
SAPONINS	POSITIVE (Presence of Foam)	POSITIVE (Presence of Foam)
TANNINS	POSITIVE (Presence of White Precipitate)	POSITIVE(Presence of White Precipitate)
PHENOLS	POSITIVE (Presence of Black colour)	POSITIVE (Presence of Black colour)
FLAVANOIDS	POSITIVE (Presence of Pink colour)	NEGATIVE (Absence of Pink colour)
STERIODS	NEGATIVE (Absence of Greenish yellow fluroscence)	NEGATIVE (Absence of Greenish yellow fluroscence)
ALKALOIDS	NEGATIVE (Absence of White precipitate)	NEGATIVE (Absence of White precipitate)

In the present study, Both the extracts show positive results for Terpenoids, Anthraquinones, Tannins, and Phenols. For the test of Flavanoids, *Hylocereus polyrhizus* shows a positive result but *Opuntia stricta* shows a negative result. Both the extracts shows a negative result for Saponins, Steroids and Alkaloids.

Antibacterial activity – Well diffusion assay:

After incubation of Muller Hinton agar plate, zone of inhibition was shown by *Hylocereus polyrhizus* fruit extract and *Opuntia stricta* fruit extract against *E.coli*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*.

Table 3. Antibacterial activity of *Hylocereus polyrhizus* and *Opuntia stricta*

Test Bacterial Strains	Zone of inhibition (mm)			
	<i>Hylocereus polyrhizus</i>	<i>Opuntia stricta</i>	Positive Control (Streptomycin)	Negative control (DMSO)
<i>Escherichia coli</i>	2mm	nil	9mm	nil
<i>Staphylococcus aureus</i>	5mm	3mm	8mm	nil
<i>Pseudomonas aeruginosa</i>	4 mm	3mm	8mm	nil

In the present study, the antimicrobial activity was analysed in both the fruit extracts of *Hylocereus polyrhizus* and *Opuntia stricta*. The fruit extracts shows more inhibition against *Pseudomonas aeruginosa* and *Staphylococcus aureus* than *Escherichia coli*.

Antioxidant Activity :

Table 4. Antioxidant effect of sample-1(*Hylocerus polyrhizus*) on DPPH

Treatment	Dose (µg/ml)	Absorbance @517 nm	% activity against DPPH radicals
Control	---	DPPH control= 0.993	---
Vit C	100	0.188	80.36
Sample 1	20	0.645	35.04
Sample 1	40	0.482	51.46
Sample 1	60	0.320	67.07
Sample 1	80	0.252	73.92
Sample 1	100	0.196	80.26

Table 5. Antioxidant effect of sample-2 (*Opuntia stricta*) on DPPH

Treatment	Dose(µg/ml)	Absorbance @ 517 nm	% activity against DPPH radicals
Control	---	DPPH control = 0.993	---
Vit C	100	0.188	80.36

Sample 2	20	0.680	30.82
Sample 2	40	0.545	44.41
Sample 2	60	0.452	53.78
Sample 2	80	0.368	62.24
Sample 2	100	0.295	69.59

The antioxidant activity of *Hylocereus polyrhizus* and *Opuntia stricta* were analysed. *Hylocereus polyrhizus* shows high antioxidant activity than *Opuntia stricta*.

Evaluation Parameters :

Table 6: Evaluation of Lipstick

EVALUATION PARAMETERS	RESULTS
Spreadability	Excellent
Melting point (°C)	Above 60 °C
Surface Anomalies	No
Skin Irritation	No
Colour	Dark Pinkish colour

In the present study, The spreadability test all lipsticks were excellent as no fragment upon spreading with no deformation of lipstick was observed. The melting point of a lipsticks indicates the safe limit of storage. The standard melting point of a commercial lipstick is above 50 °C in order to remain its rigid structure and do not melt in room temperature. For surface anomalies test, no fungi and crystallization were detected in the surface of lipsticks. Lastly, the synthesized lipsticks were applied on skin of the hands for 5 minutes to test for skin irritation. The results showing no skin irritation was observed as all ingredients used in the formulation are natural ingredients.

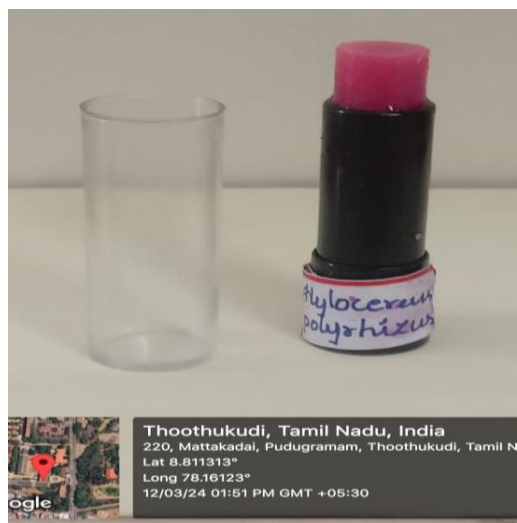


Figure1:Hylocereus polyrhizus Lipstick

Figure 2: Opuntia stricta Lipstick

CONCLUSION :

In the comparison of *Hylocereus polyrhizus* and *Opuntia stricta*, *H.polyrhizus* shows a great inhibitory action against microorganisms like *E.coli*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*. *H.polyrhizus* also have a good antioxidant potential with various phytochemical constituents like terpenoids, anthroquinons, tannins, phenols, flavonoids and alkaloids. For the production of Lipstick, various tests were conducted like spreadability test, Melting point, Surface Anomalies and Skin Irritation Test. Thus, I conclude that both the *Hylocereus polyrhizus* and *Opuntia stricta* fruits are the good source for the production of lipsticks.

REFERENCES :

1. Azwanida N.N., Normasarah, and Asrul Afandi., 2014. Utilization and Evaluation of Betalain Pigment from Red Dragon Fruit (*Hylocereus Polyrhizus*) as a Natural Colorant for Lipstick. *Jurnal Teknologi (Sciences & Engineering)*.**69**(6):139–142.
2. Rose Obat and Claire Bosire.,2022. Formulation and evaluation of herbal lipstick using *Beta vulgaris* and *Lawsonia inermis* as natural colorants. *Journal of Physical and Applied Sciences*. **1**(1):28-37.
3. Diah Arum Sari., Indah Sulistyarini., Muhammad Ryan Radix Rahardian., 2021.Anti-Bacterial Activity Of Ethanol Extract, N-Hexane Fraction, Ethyl Acetate Fraction And Water

- Fraction From Dragon Fruit Stem (*Hylocereus Polyrhizus*) Against Methicillin-Resistant *Staphylococcus aureus* (MRSA). *Jurnal Ilmu Kesehatan*. **9**(2):162-171.
4. Chalermpong Saenjum., Thanawat Pattananandecha and Kouichi Nakagawa.,2021. Antioxidative and Anti-Inflammatory Phytochemicals and Related Stable Paramagnetic Species in Different Parts of Dragon Fruit. *Journal of multidisciplinary digital publishing institute*.**26**(3565):1-14.
 5. Chetana D. Patil., Ritesh Kadam and Smita P. Bedis.,2019. Formulation and Evaluation of Sugar Cane Wax Based Lipstick. *International Journal of Trend in Scientific Research and Development* .**3**(5):827-829.
 6. Elaheh Madadi.,Sahand Mazloun-Ravasan., Jae Sik Yu.,Ji Won Ha., Hamed Hamishehkar, and Ki Hyun Kim.,2020. Therapeutic Application of Betalains: A Review. *Journal of multidisciplinary digital publishing institute*. **9**(1219):1-27.
 7. Arpitaben Desai and Pranjali Gupta.,2023 . Formulation and evaluation of natural lipstick prepared from java plum extract. *World Journal of Pharmaceutical Research*. **12**(4) :1947-1958.
 8. Gayatri Parida.,Samir Ebson Topno.,and Vijay Bahadur.,2022. Different Methods of Betalain Extraction from Red Beetroot (*Beta vulgaris L.*) for Preparation of Solid Food Colour and Preparation of Beetroot Leather. *International Journal of Plant & Soil Science*. **34**(22): 705-715.
 9. Asrul Afandi., Azwan mat lazim., Azwanida, N.N., Mumtaz Abu Bakar., Othman B. Airianah and Shazrul Fazry.,2017. Antibacterial properties of crude aqueous *Hylocereus polyrhizus* peel extracts in lipstick formulation against gram-positive and negative bacteria. *Journal of Malaysian Applied Biology*. **46**(2) :29-34.
 10. Nassim Naderi., F.C. Stintzing.,H.M. Ghazali., Yazid A. Manap and S.D. Jazayeri.,2010. Betalain extraction from *Hylocereus polyrhizus* for natural food coloring purposes. *Journal of the Professional Association for Cactus Development*.**12**:143–154.
 11. Siti Nurul Huda Mohammad Azmin., Nurshafieera Idayu Mat Jaine and Mohd Shukri Mat Nor.,2020. Physicochemical and sensory evaluations of moisturising lip balm using natural pigment from *Beta vulgaris*. *Cogent Engineering*.**7**:1-14.

**AN APPROACH TO UNDERSTAND AND CHARACTERIZE CYANOBACTERIA,
CAUSING HARMFUL ALGAL BLOOM AND ITS EFFECT IN FRESH WATER POND
AND CONTROL BY SOIL BACTERIUM**

Jefa Sherlin.B* and C. Edward

Department of Microbiology, St.Mary's College (Autonomous), Thoothukudi.

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT:

The widespread distribution of cyanobacteria in the aquatic environment is increasing the risk of water pollution caused by cyanotoxins. which possess a serious threat to human health. Biological methods of algal blooms control are environmentally friendly and may provide a cost-effective alternative strategy to physical and chemical method. Hence, in this present study the algicidal effect of soil bacterium was tested, initially the algal populated fresh water was collected then cyanobacterial causing HABs was identified microscopically and confirmed as *Anabaena* and *Microcystis*. Next the isolation and identification of algicidal bacteria from soil was done and it was identified as *Pseudomonas* sps. Then physical and chemical analysis of fresh water pond contaminated with HABs results indicated the changes when compared to control. Then isolated cyanobacterial species was grown in BG-11 selective medium and invitro control efficiency of soil bacterium was tested by inoculating the bacterial culture in the algal medium, along with KMnO₄ and rice straw at different concentration and the result indicated the efficiency of soil bacterium in controlling algal growth. Then the effect of cyanotoxin in the fresh water fish *Oreochromis niloticus* (Tilapia) was studied by injecting cyanotoxin (100µl) and the total serum IgM and IgA was analyzed by ELISA test, and the result indicated the strong rise in the Igs level compared to control.

KEYWORDS: cyanobacteria, water pollution, cyanotoxins, biological methods, freshwater fish *Oreochromis niloticus* (Tilapia), *Pseudomonas* sps, rice straw and KMnO₄.

INTRODUCTION:

Cyanobacteria (blue-green algae) are a diverse group of bacteria that, in comparison to other bacterial communities, can uniquely perform photosynthesis and modulate the environmental oxygen content. Prolific growth under eutrophic conditions leads to the accumulation of cyanobacterial biomass and the formation of algal blooms in freshwater ecosystems, Freshwater algal blooms mainly comprise one or more of *Aphanizomenon*, *Cylindrospermopsis*,

Dolichospermum, *Microcystis*, *Nodularia*, *Planktothrix*, and *Trichodesmium*. Which have regulatory impacts on the ecological processes of aquatic ecosystems. The predominant density of cyanotoxigenic species in water bodies leads to the formation of harmful algal blooms (HABs). Microcystins, cylindrospermopsins, anatoxins, and saxitoxins are the most common cyanotoxins produced by harmful algal blooms, and doses as low as parts per billion can induce acute toxicity. Toxigenic health effects of HAB cyanotoxins can manifest directly through ingestion or indirectly through consuming contaminated food products, including fish, mollusks, and agricultural produce. A broad classification of harmful algal blooms distinguishes two groups of organisms: the toxin producers and the high-biomass producers. Some harmful algal blooms have characteristics of both. (Barathan Balaji-Prasath et.al 2022). Identification of blue-green algae When examined with the unaided eye, blue-green algae are non filamentous and often have the appearance of blue or green "scum of paint on or under the surface of the water. Numerous algal species, such as dinoflagellates, flagellates, chrysophytes, and diatoms, can produce toxins that are toxic to humans and other organisms and can result in harmful blooms.

Types of algal toxins

1. Hepatotoxins:

It is known that several strains of *Anabaena flos-aquae*, *Microcystis aeruginosa*, *Microcystis viridis*, and *Oscillatoria agardhii* produce microcystins. Hepatotoxins can enter the body through oral consumption, inhalation, or skin absorption just like other cyanotoxins do.

Types of hepatotoxins are: Microcystins and Nodularins.

2. Neurotoxins:

Anabaena, *Aphanizomenon*, *Oscillatoria*, and *Trichodesmium species* strains are known to produce neurotoxins. When exposure to *Anabaena flos-aquae*, *Aphanizomenon flos-aquae* may cause acute neurotoxicoses, with respiratory failure being the most likely cause of death. It is known that cyanobacteria produce three chemically defined neurotoxins are:

(i). Anatoxin-a (ii). Anatoxin-a(s). (iii). Saxitoxin and Neo saxitoxins
of these, cyanobacteria are the only source of anatoxin-a and anatoxin-a(s), while marine dinoflagellates are the source of saxitoxin and neo saxitoxin.

3. Cytotoxins:

Cylindrospermopsins is a cyanobacterial cytotoxin that is highly toxic via both oral consumption and injection.

4.Irritant Toxins (Lipopolysaccharides):

Lipopolysaccharides are irritant toxins that are found in the outer membrane of Gram- negative bacteria's cell walls, including Cyanobacteria, where they form complexes with proteins and phospholipids.

5.Dermatotoxins:

Toxins causing severe dermatitis in swimmers who came into contact with benthic cyanobacteria. The organisms involved are *Lyngbya*, *Oscillatoria*, and *Schizothrix*.

Methods of controlling algal bloom:

Physical Method:

- Most physical methods are slow and expensive, making them difficult to use for massive blooms
- They are utilized mostly as algal bloom emergency measures rather than as a preventative strategy.

Biological Method;

- In Biological methods such as the use of algicidal bacteria have been widely studied in the control of HABs
- They are less harmful to the environment and may be a more cost-effective alternative to physical and chemical solutions.

Chemical Method

- In the chemical approach refers to use of foreign additives such as chemical Reagents.
- Chemical algaecides should be chosen with extreme careful regard for their potential toxicity

Hence, considering the critical impacts of algal blooms and cyanotoxins on fresh water ecosystem , in this present study an attempt has been made to isolate and characterise invitro control efficiency of algicidal bacterial from the soil was evaluated.

MATERIALS AND METHODS:

Collection of water sample:

For the present study, fresh water pond populated with cyanobacteria causing (HAB) was selected near the Tharuvaikulam (Thoothukudi). The water sample was collected and brought to the lab for further analysis.

Water quality analysis:

The algal populated fresh water sample was given for the following analysis:

(i).**Physical Parameters:** Colour, Odour, pH, Electrical Conductivity, TDS, Total Hardness.

(ii).**ChemicalParameters:**Total Alkalinity, P-Alkalinity, Chloride, Calcium, Magnesium, Sulphate, Silica.

Cultivation of cyanobacteria in the lab:

To examine the growth pattern, morphological identification and controlling method, the cyanobacteria was collected from fresh water was cultivated in the lab under suitable environment.

Sample preparation:

An 50ml of water sample was inoculated in Erlenmeyer flask containing 250 ml of BG-11 algal culture medium and incubated at room temperature under continuous dark and sunlight period for 15-20 days.

Morphological identification of blue green algae:

To identify the cyanobacteria by morphology, microscopic observation was done by spreading isolated culture on glass slide using forceps, culture was covered with glass cover slips and observed under compound microscope.

Isolation of algicide bacteria from soil sample:

The soil sample was collected from the garden soil and serially diluted. The diluted soil sample was spreaded on nutrient agar medium and the selected isolates were spreaded on cetrimide agar medium and it was incubated for 48 hours.

Identification of soil bacteria:

The identification of bacteria was performed on the basis of microscopic, macroscopic examination and biochemical tests according to Bergey's manual of determinative bacteriology.

Preparation of bacterial crude bacterial broth for FTIR and GC-MS analysis:

Bacterial isolate was inoculated in an Erlenmeyer flask containing nutrient broth and incubated for 12 -16 hrs. After incubation the cultured containing flask was kept in the rotary shaker at room temperature for 2-3 days, and then broth was centrifuged and the supernatant was collected and added with equal volume of hexane (1:1), hexane added culture broth formed two layers; the solvent layer was separated using separating funnel and stored in sterile vials. Hexane added

culture broth was retained as aqueous extract. Then the organic phase containing the eluted compounds given for FTIR Spectroscopy and GCMS analysis. (Anantha Padmanabhan S et.al.,2016).

Separation of cyanotoxin by column chromatography:

A dry burette was clamped vertically, with a small bit of cotton pressed down to the bottom as a pad. A thick slurry of adsorbent (silica) in a suitable solvent (ethanol) was poured into the open and allowed to settle under gravity until a column of the desired height was formed. The mixture was put into the column with a pipette. The burette stopper was gently opened to allow the solvent to elute through the column until a solution of the mixture remained in the column, covering the top of the packing material. The eluting solvents were then injected and allowed to easily flow through the column. When the eluent percolated through the column, distinct substances in the sample were separated.

Toxin study by HPLC:

To understand and identify the nature of cyanotoxin present in the water sample, the HPLC method was done as follows: (Priscila S. Corrêa et.al., 2021).

study on effect of cyanotoxin in freshwater fish *Oreochromis niloticus* (Tilapia):

The fresh water fish *Oreochromis niloticus* (Tilapia) was caught from fresh water pond in a trap and brought to the lab and maintained in fish tank. After 5 days of acclimatization, all fishes were injected intraperitoneally, with 0.1-0.2ml of previously isolated cyanotoxin sample and kept for observation (1-2 days). Subsequent to this period 2 fishes per treatment were anesthetized in benzocaine (0.1 g L⁻¹) and blood was drawn for serum isolation. (BillerTakahashi, JD et.al 2014).

Serum collection:

The blood was allowed to coagulate for overnight at 40C. Next the blood was centrifuged by centrifuge tubes at 7000 rpm for 15 mins. The serum (upper clear supernatant layer) was collected and then the serum was transferred to a new sterile tube and it was stored at –20°C for future analysis.

Isolation and purification of fish Igs:

Serum immunoglobulins (Igs) were precipitated with 50% saturated ammonium sulphate (SAS) for 6 hours at 4°C. The precipitate was centrifuged at 9000g for 15 min at 4°C. Then, the

precipitate was suspended in 1 ml of PBS (1x) and dialyzed for 24 hours at 4°C.(Azadeh Yektaseresht et.al.,2018).

Quantitative assay of IgM and IgA by ELISA:

To evaluate the total IgM and IgA in fish serum after the injection of cyanotoxin the sandwich ELISA method was done using (Biomad – Fish serum IgM and IgA ELISA kit).

Study on invitro control of cyanobacteria

Invitro control of cyanobacterial growth by potassium permanganate (kmno4)

In 250ml of cyanobacterial culture flasks 1 and 2 mg/L concentrations of KMNO₄ were added separately. Further, an un-inoculated control containing 250 mL of cyanobacteria was also maintained. Then the flasks were placed on shelves for incubation. The control of growth was measured by changing in the colour of the medium and turbidity (S. Dia et.al.,2016).

Invitro control of cyanobacterial growth with kmno4 and pseudomonas culture

In the 250 mL of the cyanobacterial culture flasks 50mL of *pseudomonas* culture and 1mg, 2mg /L of KMNO₄ were added separately and the total volume was adjusted to 300 mL and incubated at 26°C. Further, an un-inoculated control containing 250 mL of cyanobacteria was also maintained. The control of growth was measured by changing in the colour of the medium and turbidity. (Xiulin Wang et.al., 2005).

Invitro control of cyanobacterial growth with rice straw and pseudomonas culture:

1kg of rice straw was collected and pre sterilized then sprayed with 300ml of *pseudomonas* broth culture and then dried on hot sun for 2-3 days. Then rice straw treated with broth culture was introduced in a conical flask containing cyanobacterial culture. The control of algal growth was measured by changing in the colour of the medium and turbidity. (Rubeena et.al.,2014)

RESULT:

Collection of cyanobacteria from fresh water pond:

The cyanobacterial populated (HABs) water sample was collected from fresh water pond and stored in the lab until further analysis.

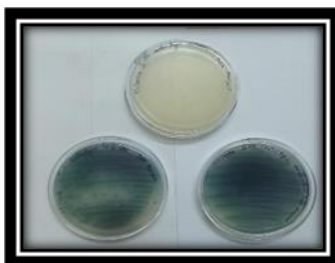
Water quality analysis:

Then physical and chemical analysis of fresh water pond contaminated with HABs was done and results indicated the changes in physical and chemical profile like pH , Odour, Taste, TDS, Calcium, chloride etc compared to control.

Cultivation of cyanobacteria in bg-11 medium and morphological identification:

The cyanobacteria causing HABs were collected from fresh water pond and cultivated in the lab by using BG-11 medium. Next the morphological examination of cultivated cyanobacteria was conducted through microscopic observation which confirmed the presence of *Anabaena sps* and *Microcystis sp*.

Microcystis sp



Isolation and identification of algicidal bacteria from soil sample:

The isolation of algicidal bacteria from garden soil was done using spread plate method, and then based on Bergey's manual classification, microscopic observation, biochemical characterization and cultural characteristics were done and the suspected organism confirmed as *Pseudomonas sp*.

Preparation of crude extract for bacterial metabolite analysis:

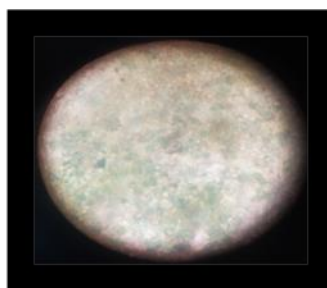
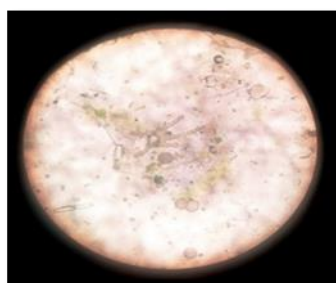
In order to analyze the bacterial metabolites in the crude broth the sample was centrifuged and the supernatant was treated with equal amount of hexane and the organic phase containing eluted compounds were separated.

Analysis of bacterial metabolites by FTIR & GC-MS analysis

From the GC-MS and FTIR analysis. The results of analytical technique clearly proved the presence of different compounds.

Cyanotoxin separation by column chromatography and characterization by hplc:

- The separation of cyanotoxin from the water sample was done by column chromatography.
- In (High Performance Liquid Chromatography- HPLC) the results of chromatography confirmed the presence of toxin compounds from the water sample.





Study on effect of cyanotoxin in freshwater fish *Oreochromis niloticus* (Tilapia):

The effect of cyanotoxin in fresh water fish. (*Oreochromis niloticus*) Tilapia was studied, by injecting toxin in to the fish peritoneally and the serum was collected to examine immunoglobulin profiles.

Collection of blood through peritoneal cavitySerum



Quantitative assay of IgM and IgA by ELISA:

Based on ELISA result there was a clear increase in the IgM and IgA antibodies compared to normal one.

ELISA plate with fish serum antibodies (cyanotoxin injected)

Study on invitro control of cyanobacteria:

Finally, the invitro control study of cyanobacteria causing HABs was done using KMNO₄ at a different concentration, Rice straw and *Pseudomonas* bacterial broth, the invitro control efficiency was found to be higher in *Pseudomonas* culture broth followed by KMNO₄ and rice straw.



***Pseudomonas* broth and KMnO₄ KMnO₄rice straw &*Pseudomonas* culture**

CONCLUSION:

Based on the results of above study, it is clearly concluded that metabolite of bacterial culture (*Pseudomonas* spp) isolated from the garden soil, have direct impact in controlling cyanobacteria that causing algal bloom in fresh water, and also it might be used with rice straw and organic chemical like KMnO₄ to control the growth in short period of time. So high importance must be given to monitor and control HABs through physical and biological methods which will keep the fresh water bodies useful and problem free.

REFERENCE:

1. Barathan Balaji-Prasath. Ying Wang., Yu ping su. David P. Hamilton., Hong Lin., Luwei Zheng., Yong Zhang. 2022. Methods to control harmful algal blooms: A review. *Environmental chemistry letters*:1-21
2. Anantha Padmanabhan S., Deventhiran., Saravanan P., Anand D., Rajarajan S. 2016. A comparative GC-MS analysis of bacterial secondary metabolites of *pseudomonas* sp. *The pharma innovation journal*. 5(4):84-89.
3. Priscila S. Correa., Wilson G. Morais junior., Antonia A. Martins., Nidia S. Ceretano., Teresa. M. Mata. 2021. Microalgae Biomolecules: Extraction, Separation and Purification Methods. *Processes*. 9(10):1-43.
4. Biller-Takahashi., Montassier., Takahashi., Urbinati. 2014. Proposed method for agglutinating antibody titer analysis and its use as indicator of acquired immunity in pacu, *Piaractus mesopotamicus*. *Braz. J. Biol* 74 (1): 238-242.
5. Azadeh Yektaseresht., Zahra Hemati., Amin Gholamhossein. 2018. Marine science and technology bulletin. *mar. sci. tech. bull.* 7(1):1-3.
6. Dia S., I. Alameddine., D. Salam., M. El-Fadel. 2016. Controlling *Microcystis aeruginosa* blooms in a freshwater system: a comparative assessment across three chemical algaecides. *WIT Transactions on Ecology and The Environment*. 209: 140-149.
7. Xiulin Wang., Liangyu Gong., Shengkang Liang., Xiurong Han., Chenjian Zhu., Yanbin Li. 2005. Algicidal Activity of Rhamnolipid Biosurfactants Produced by *Pseudomonas aeruginosa*. *Harmful Algae*. 4:433–443

8. Rubeena., Savitha ulavi., Dr B. Manoj Kumar. 2014.Algae control using rice straw. *International journal of civil engineering and technology (IJCIET)*.5(9):43-48.
9. Yoon-Ho Kang., Chong-Sung Park., Myung-Soo Han. 2007.*Pseudomonas aeruginosa* UCBPP-PA14 a useful bacterium capable of lysing *Microcystis aeruginosa* cells and degrading microcystins. *Journal of Applied Phycology*.19(1):1-12.
10. Natalia Vilariño., M. Carmen Louzao., María Fraga., Laura P. Rodríguez., Luis M. Botana. 2013.Innovative detection methods for aquatic algal toxins and their presence in the food chain. *Anal Bioanal Chem*405:7719-7732.
11. Shishirv., Mendhekar. 2023.Cyanobacteria Isolation, Purification and Principle *International Journal of Current Science Research and Review*.6(4):1-13.
12. Sivonen. K 2009.Cyanobacterial toxins. *Encyclopedia of microbiology*.4:290-307.
13. Mike Collins. 1978.Algal Toxins. *Microbiological Reviews*.42(4):726-746.
14. Robert A. Andersen. 2005. Algal Culturing Techniques. *Phycological Society of America*:1-578.
15. Annalisa Zaccaroni and Dino Scaravelli., 2008.FreshWater Toxins. *Toxicity of Fresh Water Algal Toxins to Humans and Animals*:1-46.



A STUDY ON SOCIAL MEDIA MARKETING WITH SPECIFIC REFERENCE TO INSTAGRAM

M. Aisha Banu and D. Daisy Bai

PG and Research Department of Commerce, St. Mary's College (Autonomous), Thoothukudi
Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu.

ABSTRACT

Social media has revolutionized how individuals and businesses interact and engage with one another. Addressing concerns related to authenticity, transparency, and consumer trust in the context of influencer marketing, sponsored content, and paid promotions on Instagram. The objectives of the study are to analyze the importance of Instagram & its improvisation towards E-Commerce, to examine the user satisfaction towards Instagram and to identify the degree of positive and negative impacts of using Instagram. The study was carried out from November 2023 to April 2024. The study is complied with the aid of both primary and secondary data. For collection of data, 120 copies of questionnaires were collected. The data collected through questionnaire were analysed through the statistical tools. The statistical tools used are, Percentage Analysis, Pie-chart, Likert's scale, Garrett Ranking and Chi-Square. The suggestions based on the research work: The social networking strategy sufficiently be flexible to allow it to adapt to new development and to determine what works and what does not work. Brand name is the most important attributes as expected by respondents. Therefore manufacturers should try to build brand image. In conclusion, Instagram offers businesses a powerful platform for connecting with their audience, building brand awareness, and driving sales.

Key words: Social Media, Instagram, E-Commerce, Social Media Marketing, Online Marketing.

INTRODUCTION

Social media has revolutionized how individuals and businesses interact and engage with one another. It has provided a powerful medium for people to stay connected with friends, family, and colleagues, regardless of geographical barriers. Additionally, social media has become a vital tool for businesses, offering avenues for marketing, advertising, customer engagement, and brand building.

Social media, users can share their thoughts, opinions, photos, videos, and other multimedia content with their network of followers. This sharing of content has facilitated the rapid dissemination of information, making social media a potent tool for news dissemination, activism, and social movements. The widespread adoption of social media has also raised concerns about privacy, security, misinformation, cyberbullying, and its impact on mental health. As social media continues to evolve, it is essential to address these challenges while harnessing the potential benefits it offers for communication, collaboration, and community building.

STATEMENT OF THE PROBLEM:

Instagram has emerged as one of the most influential platforms for social media marketing, offering businesses unprecedented opportunities to reach and engage with their target audience. However, amidst the proliferation of brands and content on Instagram, businesses face several challenges and uncertainties in effectively harnessing the platform's potential for marketing success.

The evolving dynamics of user behavior and preferences on Instagram, including content consumption habits, engagement patterns, and receptivity to marketing messages. Identifying the most effective strategies and tactics for organic content creation, audience targeting, and community engagement on Instagram to drive meaningful outcomes such as brand awareness, customer acquisition, and loyalty.

Evaluating the impact of Instagram's algorithmic changes, feature updates, and competitive landscape on the visibility, reach, and performance of marketing efforts. Assessing the role and efficacy of various Instagram marketing tools and features, such as Stories, Reels, IGTV, influencer collaborations, and advertising options, in achieving marketing objectives and delivering measurable ROI.

Addressing concerns related to authenticity, transparency, and consumer trust in the context of influencer marketing, sponsored content, and paid promotions on Instagram. Exploring emerging trends, best practices, and innovative approaches in Instagram marketing, including the integration of user-generated content, interactive experiences, and shoppable features to enhance engagement and drive conversions.

OBJECTIVES OF THE STUDY:

- To analyze the importance of Instagram & its improvisation towards E-Commerce.
- To examine the user satisfaction towards Instagram.
- To identify the degree of positive and negative impacts of using Instagram.

RESEARCH METHODOLOGY

Sampling Design	Simple random sampling
Period of the study	December 2023 - March 2024
Data used	Primary and Secondary data
Test for analysis	Percentage Analysis, Pie-chart, Likert's scale, Garrett Ranking and Chi-Square

LIMITATIONS OF THE STUDY

- Time is one of the major constraints, which limits the effectiveness of data collection.
- The sample size is restricted to 120. Due to time constraint, the most essential information has been taken for the study.
- Some of the respondents could not answer, hence we had to use the interview schedule method.

RESULTS AND DISCUSSION**ROLE OF INSTAGRAM INSIGHTS FOR BUSINESSES**

Particulars	No. of Respondents	% of Respondents
Post creation	31	26
Audience analytics	35	29
Messaging platform	39	32
Hash tag recommendation	15	13
Total	120	100

Inference:

From the above table it is known that 26% of respondents use Instagram Insights primarily for post creation, 29% of respondents utilize Instagram Insights for audience analytics, 32% of respondents use Instagram Insights for the messaging platform and 13% of respondents rely on Instagram Insights for hashtag recommendation.

Thus, it is known that the majority (32%) of respondents use Instagram Insights for the messaging platform.

ROLE OF INSTAGRAM ADS IN TARGETING SPECIFIC AUDIENCE

Particulars	No. of Respondents	% of Respondents
Based on post frequency	22	18
By geographic location, demographics and interest	63	53
By post engagement	21	17
Random targeting	14	12
Total	120	100

Inference:

From the above table it is known that, 18% of respondents target their audience based on post frequency, 53% of respondents target their audience based on geographic location, demographics, and interests, 17% of respondents target their audience based on post engagement and 12% of respondents employ random targeting methods.

Thus, it is known that the majority (53%) of respondents target their audience based on geographic location, demographics, and interests.

MOST EFFECTIVE AD-FORMAT ON INSTAGRAM

Particulars	No. of Respondents	% of Respondents
Photo ads	25	21
Video ads	43	36
Carousel ads	44	37
Story ads	8	6
Total	120	100

Inference:

From the above table it is known that, 21% of respondents find photo ads to be the most effective on Instagram, 36% of respondents find video ads to be the most effective, 37% of respondents find carousel ads to be the most effective and 6% of respondents find story ads to

be the most effective.

Thus, it is known that the majority (37%) of respondents find carousel ads to be the most effective.

LEVEL OF SATISFACTION OF INSTAGRAM USERS

Particulars	SA	A	N	D	SD	Total score	% of score	Rank
Instagram analytics is refining your marketing strategy	390	44	18	8	21	481	18.70	I
Instagram for your professional or business Activities	35	264	60	46	4	409	15.90	II
Privacy issues on instagram	60	244	39	56	6	405	15.75	III
Instagram enhance brand visibility and Recognition	25	36	291	12	3	367	14.27	IV
Provide feedback on new features or Changes	30	60	240	30	4	364	14.15	V
Confidence in measuring instagram campaign success using diverse metrics and analytics tools	15	92	33	156	5	301	11.70	VI
Instagram is effective promoting in products/service	120	12	9	26	77	244	9.49	VII

Inference:

From the above table it is known that, "Instagram analytics is refining marketing strategy" ranks first with a total score of 481 and accounts for 18.70% of the total score, "Instagram for professional or business activities" ranks second with a total score of 409 and accounts for 15.90% of the total score, "Privacy issues on Instagram" ranks third with a total score of 405 and accounts for 15.75% of the total score, "Instagram enhances brand visibility and recognition" ranks fourth with a total score of 367 and accounts for 14.27% of the total score, "Provide feedback on new features or changes" ranks fifth with a total score of 364 and accounts for 14.15% of the total score, "Confidence in measuring Instagram campaign success using diverse metrics and analytics tools" ranks sixth with a total score of 301 and accounts for

11.70% of the total score and "Instagram is effective in promoting products/services" ranks seventh with a total score of 244 and accounts for 9.49% of the total score.

CHI-SQUARE TEST

NULL HYPOTHESIS (H₀):

There is no significant relationship between the gender and the time spent instagram.

ALTERNATIVE HYPOTHESIS (H₁):

There is a significant relationship between the gender and the time spent instagram.

$$X^2 = \sum (O-E)^2 / E$$

Observed frequencies (O)

Time spent Gender	0-3 hrs	3-5 hrs	5-10 hrs	More than 10 hrs	Total
Male	9	22	15	8	54
Female	12	17	20	17	66
Total	21	39	35	25	120

Rows and Columns	O	E	O-E	(O-E) ²	(O-E) ² /E
R1C1	9	9.45	-0.45	0.20	0.02
R1C2	22	17.55	4.45	19.8	1.12
R1C3	15	15.75	-0.75	0.56	0.03
R1C4	8	11.25	-3.25	10.5	0.93
R2C1	12	11.55	0.45	0.20	0.01
R2C2	17	21.45	-4.45	19.8	0.9
R2C3	20	19.25	0.75	0.56	0.02
R2C4	17	13.75	3.25	10.5	0.73
Total					X² = 3.79

Degrees of freedom:

$$= (r-1) (c-1)$$

$$= (2-1) (4-1)$$

$$= 1 \times 3$$

$$= 3$$

The table value of X^2 for 3 degree of freedom at 5% level of significance is 7.815. The calculated value i.e., 3.79 is less than the table value. Thus the result is dependent. Hence it is concluded that there is no significant relationship between gender and time spent in instagram. Hence null hypothesis is accepted.

MAJOR FINDINGS

The following are the findings in regard to various responses from the respondents regarding the study on social media marketing with reference to instagram:

- ❖ The largest portion (32%) of respondents utilize Instagram Insights within the messaging platform.
- ❖ The predominant approach (53%) among respondents involves tailoring their audience outreach according to geographic location, demographics, and interests.
- ❖ Carousel ads were deemed the most effective by the majority (37%) of respondents.
- ❖ It is evident from the ranking table that instagram analysis is refining your marketing strategy highest ranked facility with a mean score of 18.70.
- ❖ It is observed from the chi-square test that there is a significant relationship between gender and time spent on instagram.

SUGGESTIONS

Following are the suggestions based on the research work:

- The social networking strategy sufficiently be flexible to allow it to adapt to new development and to determine what works and what does not work.
- Brand name is the most important attributes as expected by respondents. Therefore manufacturers should try to build brand image.

- The reviews and complaints raised by the customers on the Social Media should be effectively managed and proper actions should be taken and the action taken should be communicated to the customer.
- The promotional offers during on season should be displayed on the Social Media on regular basis, so that the customers will know about the products offered.
- Online marketing in instagram must focus on providing extra facilities like goods exchange policy to online shoppers so that shoppers will easily purchase products over online.

CONCLUSION

In conclusion, Instagram offers businesses a powerful platform for connecting with their audience, building brand awareness, and driving sales. By implementing effective strategies, staying adaptable to change, and prioritizing authentic engagement, businesses can harness the full potential of Instagram marketing to achieve their goals in an increasingly digital and interconnected world. Social media marketing, Instagram stands out as a dynamic and influential platform that offers businesses unique opportunities to connect with their audience, build brand awareness, and drive engagement. Through this study, we have delved into the various facets of Instagram marketing and its implications for businesses.

Instagram's visual-centric nature and diverse range of features, including feed posts, stories, IGTV, and Reels, provide businesses with versatile tools to showcase their products or services creatively. By leveraging captivating visuals, compelling storytelling, and interactive content, businesses can effectively capture the attention of their target audience and foster meaningful connections. Furthermore, Instagram's robust advertising platform enables businesses to reach specific demographics, target niche markets, and track the performance of their campaigns with precision. By utilizing advanced targeting options, strategic ad placements, and compelling call-to-actions, businesses can maximize their return on investment and achieve their marketing objectives effectively.

WEBSITES

<https://www.ijrar.org/papers/IJRAR19J3558.pdf>



<https://core.ac.uk/download/pdf/38128395.pdf>

<https://core.ac.uk/download/pdf/294817570.pdf>

<http://www.diva-portal.org/smash/get/diva2:859218/fulltext01.pdf>

<https://www.researchgate.net/publication/331481795> In a World of Social Media A Case Study Analysis of Instagram



A STUDY ON CONSUMER BEHAVIOUR TOWARDS ECO-FRIENDLY PRODUCTS IN THOOTHUKUDI CITY

A.ANUSIYA and T. PRIYANKA

PG and Research Department of Commerce, St. Mary's College (Autonomous), Thoothukudi
Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu.

ABSTRACT

Eco-friendly products are also termed as environmental products or ecological products. Consumers are becoming more conscious of environmental issues, health-conscious, safe life, and interest to purchase all types of eco-friendly products. Eco-friendly products are the best solution for all environmental problems like climatic change, global warming, and natural disaster. Consumers who buy eco-friendly products are called green consumers. Eco-friendly producers are called green entrepreneurs. Buying and selling of eco-friendly product transactions called green marketing or eco-friendly business. The present research paper is an attempt to investigate buying behaviour towards eco-friendly products among the consumers in Thoothukudi city. The research is conducted with probing questions on the concept of eco-friendly products, mode of awareness, various reasons for purchasing eco-friendly products, and perception of consumers with eco-friendly products. The data has been collected from 120 respondents of different areas in Thoothukudi. Both primary and secondary data have been used for this research paper. Data has been analysed using excel sheet. Research findings reveal that eco-friendly products are more effective than non-eco-friendly products.

KEY WORDS: Eco-friendly product, Green consumer, Green marketing, Green consumer perception, Eco-friendly business.

INTRODUCTION:

Environmental friendly products are market-oriented products that cause minimal environmental degradation and their production is linked to a product development process that



is structured in a way that considers the impacts that can be caused to the environment throughout their life cycle. Environment-friendly processes also referred to as eco-friendly, nature-friendly, and green are sustainability and marketing terms referring to goods and services, laws, guidelines, and policies that claim reduced, minimal, or no harm upon ecosystems or the environment. Green marketing or environmental marketing refers to eco logical products such as healthy food, Phosphate free, Recyclable/Refillable, Ozone friendly, and eco-friendly. Green marketing is an attempt to characterize a product as being environmental friendly (ecofriendly). It holds the view that marketing which is a part of business not only has to satisfy customers in particular, but also has to take into account the interests of society in general. That is, all those who are affected by the activities of a business should be kept in mind when setting the objectives and the policies of an organization. This has already helped to increase the recent trend towards the “greening” of the In general, green marketing is a much broader concept that can be applied to consumer goods, industrial goods and even services. Green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes and advertising. Consumers expect green companies to engage in a broad set of actions, particularly reducing toxics, recycling and managing water. Many consumers prefer to spend more on green products, especially in developing economies. While globalization process continues in its full speed across the world, this process has also brought some problems with it. Leading one of these problems is environmental problems that affect all living beings negatively. These aforementioned environmental problems have started to come to the agenda more and more in the recent years and people have started to talk these negativities. Consumers now have worries about the future of the world and as results of this mostly prefer environment friendly products. Consumption decisions have changed towards products that are greener, more suitable and more environmentally friendly due to the rise in consumer awareness of current environmental matters. In developed countries, the green consumption movement has existed for a long time and now has become increasingly popular. With higher incomes and consumption awareness, green consumption has been improved in developing economies. Green consumption is an important part of sustainable consumption - a pillar of green growth, which is a development strategy that many countries are pursuing. However, green consumption practice in Bangladesh in many facets - from consumers to

enterprises to government - is in its early stages. Research activities in this field are still not adequately addressed by experts.

Objectives of the study:

1. To explore the personal profile of the consumers using eco-friendly products and assess the factors considered in buying eco-friendly products.
2. To assess the attributes considered while purchasing eco-friendly products among the consumers.
3. To examine the awareness of eco-friendly products among the consumers and its impact on environmental sustainability.
4. To find out the satisfaction level of consumer towards eco-friendly products.

RESEARCH METHODOLOGY:

Sampling Design	Convenience Sampling
Period of Study	January – March 2024
Data Used	Primary and Secondary
Test for analysis	Percentage Analysis Method Garrett Ranking Techniques Likert Scaling Techniques Chi – Square Test

RESULTS AND DISCUSSIONS:

AWARENESS LEVEL OF ECO-FRIENDLY PRODUCTS

SERIAL NUMBER	CLASSIFICATION	NUMBER OF RESPONDENTS	PERCENTAGE
1.	Aware	59	49
2.	Partly aware	52	43
3.	Unaware	9	8
	Total	120	100

Source: Primary data

Interpretation

When the researcher asked people about the awareness of eco-friendly products then 49% of them said they have awareness and 43% of then said they are partly aware only 8% of them said they are unaware of eco-friendly product. Therefore majority (49%) of the respondents are aware of the eco-friendly product.

ECO-FRIENDLY PRODUCTS KNOWN BY THE RESPONDENTS

SERIAL NUMBER	CLASSIFICATION	NUMBER OF RESPONDENTS	PERCENTAGE
1.	Family /relatives	18	15
2.	Friends	27	23
3.	Peers/colleague	11	9
4.	TV advertisements	16	13
5.	Social media	40	33
6.	News paper/printed media	8	7
	Total	120	100

Source: Primary data

Interpretation

When the researcher asked the people how you came to know about the eco-friendly products 33% of then said through social media they are aware about eco friendly product, 23% of them said friends, 15% of then said family/relatives, 13% of them said TV advertisements, 9% of them said peers/colleague, 7% of them said news paper/printed media. Therefore majority of the respondents (33%) are aware of the eco-friendly products through social media.

REASONS FOR BUYING ECO-FRIENDLY PRODUCTS

SERIAL NUMBER	CLASSIFICATION	NUMBER OF RESPONDENTS	PERCENTAGE
1.	Product features	22	18
2.	Packaging	18	15
3.	Environmental issues	31	25
4.	Promotion and campaigns	11	9
5.	Acceptable price	20	17
6.	Designer/company image	7	6
7.	Appearance	9	8
8.	Durable	2	2
	Total	120	100

Source: Primary data

Interpretation

When the researcher asked people reasons for buying eco-friendly products out of 120 people 25% of the respondents purchase due to environmental issues and 17% of them purchase due to the product price and 18% of them because of product features and 15% of them because of packaging and 9% of them because of promotion /campaigns and 8% of them because of appearance, 6% of them because of designer/company image only 2% of the people because of durability. Therefore majority (25%) of the respondents purchase eco-friendly products, because of environmental issue.

NCE TOWARDS ECO-FRIENDLY PRODUCTS

SERIAL NUMBER	CLASSIFICATION	NUMBER OF RESPONDENTS	PERCENTAGE
1.	Yes	95	79
2.	No	25	21
	Total	120	100

Source: Primary data

Interpretation

Table 3.23 shows that 79% of respondents first consider eco-friendly products, 21% of respondents do not first consider eco-friendly products. Therefore majority (79%) of respondents first consider eco-friendly products.

SOLUTION FOR ACHIEVING ENVIRONMENTAL SUSTAINABILITY

Sustainability level	Rank- 1	Rank- 2	Rank - 3	Rank - 4	Rank - 5	Total
Planting trees	4875	198	700	80	150	7785
Reduce the usage of plastic and other harmful products	1650	3480	1250	400	125	6905
Recycle and reuse	675	1440	3600	440	100	6255
Reducing energy consumption	450	1800	900	2200	275	5625
Using of green fuels and vehicles	975	1020	1550	600	1100	5245

Sustainability level	Average	Rank
Planting trees	64.8	I
Reduce the usage of plastic and other harmful products	57.5	II
Recycle and reuse	52.1	III
Reducing energy consumption	46.8	IV
Using of green fuels and vehicles	43.7	V

Source: Primary data

Interpretation

The above table reveals that respondents have been given top priority for planting trees ranked as I with score 64.8 followed by reduce the usage of plastic and other harmful products ranked as II with the score of 57.5. Recycle/reduce ranked as III with score of 52.1. Reducing energy

consumption ranked as IV with the score of 46.8 and using of green fuels and vehicles ranked as V with score of 43.7 for the solutions for achieving environmental sustainability.

CHI-SQUARE TEST OF SIGNIFICANCE RELATIONSHIP BETWEEN AGE AND PERCEPTION TOWARDS ECO-FRIENDLY PRODUCT

Ho: There is no significant relationship between age and perception towards eco-friendly products.

Hi: There is significant relationship between age and perception towards eco-friendly products.

$$X^2 = \sum [(O-E)^2 / E]$$

Observed frequencies (O)

Age Factor	price	Environmental impact	Brand Reputation	All of the above	Total
13-20	1	5	11	2	19
21-30	9	30	8	18	65
31-40	0	10	7	2	19
41-50	1	6	1	5	13
Above 50	0	1	2	1	4
Total	11	52	29	28	120

Expected frequencies (E)

Age Factor	price	Environmental impact	Brand Reputation	All of the above	Total
13-20	1.74	8.23	4.59	4.43	18.99
21-30	5.95	28.16	15.70	15.1	64.91
31-40	1.74	8.23	4.59	4.43	18.99
41-50	1.19	5.63	3.14	3.03	12.99
Above 50	0.36	1.73	0.96	0.96	3.98
Total	10.98	51.98	28.98	27.92	120

Chi-square test: Relationship between age and perception towards eco-friendly products.

O	E	O-E	(O-E) ²	(O-E) ² /E
1	1.74	0.74	0.54	0.31
9	5.95	3.05	9.30	1.56
0	1.74	1.74	3.02	1.73
1	1.19	0.19	0.036	0.030
0	0.36	0.36	0.129	0.358
5	8.23	3.23	10.43	1.26
30	28.16	1.84	3.38	0.120
10	8.23	1.77	3.13	0.38
6	5.63	0.37	0.136	0.024
1	1.73	0.73	0.532	0.307
11	4.59	6.41	41.08	8.94
8	15.70	7.7	59.29	3.77
7	4.59	2.41	5.80	1.26
1	3.14	2.14	4.57	1.45
2	0.96	1.04	1.081	1.126
2	4.43	2.43	5.90	1.33
18	15.1	2.9	8.41	0.55
2	4.43	2.43	5.90	1.33
5	3.03	1.97	3.88	1.28
1	0.93	0.07	0.0049	0.0052
Total				$\sum[(O-E)^2/E]=$ 27.12

Source: Primary data

Degrees of freedom = (r-1) (c-1)

$$= (5-1) (4-1)$$

$$= 4 \times 3$$



$$= 12$$

Table value = 21.026

Calculated value = 27.12

INTERPRETATION

The table value for 12 degrees of freedom at 5% level significance is 21.026. It is found that the calculated value i.e., 27.12 is greater than table value. Therefore, the Null Hypothesis (H_0) is rejected. Hence it is concluded that there is a significance relationship between age and perception towards eco-friendly products.

FINDINGS:

- Most of the (49%) respondents are aware of the eco-friendly products.
- Most of the (33%) respondents know about the eco-friendly products through social media.
- Majority (25%) of the respondents purchase eco-friendly products, because of environmental issue
- Majority (79%) of respondents first consider eco-friendly products while purchasing.
- It is evident that respondents have been given top priority for planting trees ranked as I with the Garrett mean score of 64.8
- It is observed from the Chi-square test that there is a significant relationship between age and perception towards eco-friendly products.

SUGGESTIONS:

- To enhance it, you could consider focusing on specific factors influencing consumer preferences, such as the perceived environmental impact, social responsibility, health benefits, or even the influence of marketing strategies in promoting eco-friendly

products.

- Additionally, exploring any cultural or societal norms that shape consumer attitudes towards sustainability could provide valuable insights.
- Conducting surveys, interviews, or analyzing consumer data could help in understanding the depth of consumer preferences and behaviours in this area
- Investigate how awareness campaigns and educational initiatives influence consumer understanding and adoption of eco-friendly products. Explore how pricing strategies affect consumer willingness to pay for eco-friendly alternatives compared to conventional products.
- Examine the role of sustainable packaging in attracting environmentally conscious consumers and reducing overall environmental impact. Analyze the importance of brand reputation and corporate sustainability practices in shaping consumer trust and loyalty towards eco-friendly brands.

CONCLUSION

In conclusion, the study of consumer behaviour towards eco-friendly products unveils a complex interplay of factors shaping purchasing decisions in today's market. From heightened environmental awareness to the influence of social, cultural, and psychological dynamics, consumers are increasingly prioritizing sustainability in their consumption choices. Brands and policymakers alike can leverage insights from this research to tailor strategies that effectively promote eco-friendly products, foster consumer trust, and drive positive environmental impact. By understanding the multifaceted nature of consumer preferences and motivations, stakeholders can collectively work towards a more sustainable future while meeting the evolving needs and values of consumers worldwide. In summary, the examination of consumer behaviour towards eco-friendly products underscores a growing trend towards sustainability-conscious consumption. As consumers become more informed and conscientious about the environmental impact of their purchases, they are increasingly inclined to choose products that align with their values of environmental stewardship and social responsibility. This shift in consumer preferences reflects not only a desire to minimize personal ecological footprints but also a broader commitment to supporting



brands and initiatives that prioritize sustainability. Moreover, the research highlights the intricate web of influences that shape consumer attitudes and behaviours in this domain, including factors such as pricing, branding, social influences, and cultural norms. By delving into these influences, businesses and policymakers can gain valuable insights into the drivers of consumer demand for eco-friendly products, enabling them to develop targeted marketing strategies, innovative product offerings, and supportive policy measures. Ultimately, the study of consumer behaviour towards eco-friendly products serves as a call to action for businesses to embrace sustainability as a core value and integrate it into all aspects of their operations. By meeting consumer demand for eco-friendly alternatives, companies can not only drive sales and enhance brand reputation but also contribute to meaningful environmental conservation efforts. As consumers continue to prioritize sustainability in their purchasing decisions, businesses that embrace this shift stand to not only thrive in the marketplace but also make a positive impact on the planet.

REFERENCES:

- Aparna, K. (2017). A study on green marketing practices of selected FMCG manufacturers in India.
- Ball, L. a. (2003). <https://shodhganga.inflibnet.ac.in/handle/10603/72697>. Retrieved from shodhganga.inflibnet.ac.in: <https://shodhganga.inflibnet.ac.in/handle/10603/72697>Chen. (2001). <https://shodhganga.inflibnet.ac.in/handle/10603/72697>. Retrieved from shodhganga.inflibnet.ac.in: <https://shodhganga.inflibnet.ac.in/handle/10603/72697>
- Chen, c. (2005). <https://shodhganga.inflibnet.ac.in/handle/10603/72697>. Retrieved from shodhganga.inflibnet.ac.in: <https://shodhganga.inflibnet.ac.in/handle/10603/72697>
- D.M Kodituwakku, D. K. (2017). Green marketing concept and consumer purchasing intention with special reference to consumer goods.
- Darnton, S. a. (2005). <https://shodhganga.inflibnet.ac.in/handle/10603/72697>. Retrieved from shodhganga.inflibnet.ac.in: <https://shodhganga.inflibnet.ac.in/handle/10603/72697>



Dr.Suma. (2013). Study on Green Marketing. Retrieved from https://shodhganga.inflibnet.ac.in/bitstream/10603/72697/7/07_chapter%201.pdf. (2020). Fast

Moving consumer goods sector analysis report. Equitymaster.

Fernando, J. (2021). Green Marketing. Investopedia.

Figge. (2002). <https://shodhganga.inflibnet.ac.in/handle/10603/72697>. Retrieved from shodhganga.inflibnet.ac.in: <https://shodhganga.inflibnet.ac.in/handle/10603/72697>

Fisk. (1998). <https://shodhganga.inflibnet.ac.in/handle/10603/72697>. Retrieved from shodhganga.inflibnet.ac.in: <https://shodhganga.inflibnet.ac.in/handle/10603/72697>

Fisk, G. a. (1996). <https://shodhganga.inflibnet.ac.in/handle/10603/72697>. Retrieved from shodhganga.inflibnet.ac.in: <https://shodhganga.inflibnet.ac.in/handle/10603/72697>



A MODERN DAY GADGETS AND THEIR IMPACT ON ACADEMIC PERFORMANCE OF THE YOUTH

R. Asheera and P. Maria Sahaya Rossiyana

PG and Research Department of Commerce, St. Mary's College (Autonomous), Thoothukudi
Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu.

ABSTRACT

This study aims to Gadgets and their impact on academic performance of the youth in thoothukudi city. In this fast-moving world, gadgets and electronic devices play an essential role; with the help of science and technology, anything is possible in this world. The study will explore the extent of gadget usage among the youth and its integration into their daily lives. This includes examining the amount of time spent on devices, the types of activities engaged in, and the potential distractions posed by these gadgets.

KEYWORDS: Impact on academic performance, Reason, Satisfactory level of modern day gadgets, traditional methods, productivity apps.

INTRODUCTION:

In our modern era, gadgets have become an integral part of our daily lives, seamlessly integrating with various aspects of our routines. A "gadget" is a term used to describe a small technological device designed to perform specific functions, making tasks easier and more efficient. These devices come in various shapes and sizes, ranging from handheld gadgets like smart phones and tablets to more specialized tools like fitness trackers, smart watches, and computer etc. The evolution of gadgets has been driven by advancements in technology, and the increasing demand for convenience. Gadgets, encompassing smart phones, tablets, and laptops, have integrated into educational environments, offering both opportunities and challenges. It explores the fundamental relationship between gadgets and academic performance, examining how these technological tools influence students' learning experiences.

The advent of gadgets has revolutionized the way students access information, collaborate, and engage with educational content. Smart phones equipped with diverse applications offer



instant access to a big collection of information. Laptops and tablets facilitate note-taking, research, and multimedia presentations. These gadgets, while convenient, raise concerns about potential distractions and their impact on concentration during lectures and study sessions.

Gadgets go beyond the classroom, influencing students' study habits. While digital resources offer flexibility, there are concerns about the quality of information they provide.

STATEMENT OF THE PROBLEM:

The pervasive use of modern-day gadgets among the youth raises concerns about its potential impact on academic performance. As students increasingly rely on smart phones, tablets, and other electronic devices, there is a need to investigate the correlation between gadget usage and academic outcomes. The statement of the problem for this study aims to address several key issues.

The study will explore the extent of gadget usage among the youth and its integration into their daily lives. This includes examining the amount of time spent on devices, the types of activities engaged in, and the potential distractions posed by these gadgets.

It clearly outlines the purpose of the study, emphasizing the investigation into the potential negative effects of constant gadget accessibility on concentration and focus during academic activities. The aim to identify the impact of information accessibility on multitasking behaviors and academic engagement is well articulated.

Moreover the research will examine the influence of social media on the students' academic performance. The pervasive nature of social media and entertainment platforms may divert attention from educational pursuits, potentially leading to a decline in study habits and overall performance.

The investigation will explore potential gender and demographic profile disparities in gadget usage and its impact on academic outcomes. Understanding these nuances is essential for developing targeted interventions and support systems.

OBJECTIVIES:

- To familiarize the youth about the different gadgets available and their effect of

usage.

- To find out the reason for preference of various modern day gadgets.
- To analyze the impact of gadget on their academic performance.
- To focus on the satisfactory level of youth towards addiction gadgets.
- To promote better learning with the use of modern technologies.
- To study the influence of modern gadgets on the health of youth.

RESEARCH METHODOLOGY:

Sampling Design	Simple Random Sampling
Period of Study	November-April 2024
Data used	Primary and Secondary Data
Test of Analysis	• Percentage analysis • Pie chart • Bar diagram • Garrett Ranking method
	• Likert scale technique method • Chi- square test

LIMITATIONS:

- The study was limited to Thoothukudi city only.
- Time is the major constraint while doing surveys.
- Some respondents would not have given their true information; this may not give us accurate results also.

Table 1:

RESULT AND DISCUSSION:**Respondents using Electronic gadgets**

Using Electronic gadgets	No. of respondents	Percentage
Yes	120	100
No	0	0
Total	120	100

Source :Primary Data

INTERPRETATION:

From the above table it is inferred that. 100% of the respondents (120 out of 120) use electronic gadgets. There are no respondents who do not use electronic gadgets. The data suggests that electronic gadgets are prevalent among the respondents, with all of them using them.

Table 2:

Gadgets liked by the respondents

Gadgets liked by respondents	No. of respondents	Percentage
Smartphone	33	28
Laptop	28	23
Tablet	18	15
power bank	2	2
Computer	22	18
Printer	3	3
Smart watch	10	8
Projector	4	3
Total	120	100

Source:Primary Data

INTERPRETATION:

From the above table it is inferred that 28% respondents like Smartphone, 23% like Laptop, 18% like computer, 15% like Tablet, 8% Smart watch, 3% like projector\Printer, 2% like Power bank.

Thus, it is inferred that the majority (28%) of the respondents like Smart phones.

Table 3:
Most efficient for studying and note taking

Efficient for studying and note taking	No. of respondents	Percentage
Laptop	28	23
Smartphone	33	28
Tablet	18	15
Computer	22	18
Smartwatch	10	8
Printer	3	3
Power bank	4	3
Projector	2	2
Total	120	100

Source :Primary Data

INTERPRETATION:

From the above table it is inferred that 28% respondents like Smartphone, 23% like Laptop, 18% like computer, 15% like Tablet, 8% Smart watch, 3% like power bank\Printer 3% , like Projector 2%.

Thus, it is inferred that the majority (28%) of the respondents like Smart phone.

SUGGESTIONS

- It provides regular software updates for improved performance and security. Enhance battery life for longer usage without frequent recharging. Camera features for better

photography experiences.

- Youth may spend more time on the internet searching for study resources or watching YouTube lesson videos.
- Encourage students to use productivity apps that block distracting websites and notifications during study sessions.
- Students may frequently listen to the lecture given by their teacher during the online class using video recordings provided to them by their individual schools.
- They may utilize electronic gadgets to watch news, read electronic books, read electronic newspapers, and so on.
- They are suggested to use educational apps online resources and digital tools to enhance your learning research and organization skills.
- Youth may set specific goals for gadget usage focusing on productive and educational tasks.
- The respondents prefer modern gadgets rather than traditional methods such as the usage of boards, hardcopy drawings, and old school black. They are suggested to use gadgets in the classroom; they are white projectors, audio-visual and media presentations became not only available but portable for students.
- Youth may use the devices like Amazon Echo and Google Home can assist with homework reminders and basic research tasks

CONCLUSION

The main purpose of doing this project is to address the modern gadgets and their impact on academic performance of the youth. In the era of technological advancement, modern-day gadgets have become an integral part of daily life, especially for the youth. These gadgets encompass a wide range of devices such as smart phones, tablets, laptops, and wearable tech. While these gadgets offer numerous benefits, their impact on academic performance among the youth is a subject of discussion."One of the significant impacts of gadgets on academic performance is the potential for distraction. With access to social media, games, and endless entertainment options, students often find it challenging to stay focused on their studies. This distraction can lead to



decreased productivity and poor academic outcomes. However, it's essential to recognize that modern-day gadgets also offer valuable educational resources. With access to the internet, students can easily find information, collaborate with peers, and engage in online learning platforms.

Educational apps and software can supplement traditional learning methods and cater to individual learning styles. Additionally, gadgets enable students to stay organized with digital calendars, note-taking apps, and productivity tools. These digital aids can enhance time management skills and improve overall academic performance. Despite the potential drawbacks, the impact of gadgets on academic performance varies depending on how they are used. Responsible usage, guided by parental supervision and educational institutions, can mitigate the negative effects and maximize the benefits of technology in education.

“Gadgets are the windows to the digital realm, where anything is possible.”

WEBSITES:

[Research Title Effects of Different Electronic Gadgets on Students Academic Performance](https://www.academia.edu/39008090/)

[The Impact of Electronic Gadget Uses with Academic Performance among youth](https://www.researchgate.net/publication/338791252)

[academic-perfomance-of- youth](https://www.studocu.com/ph/document/misamis-university/effects-of-electronic-gadgets-in-the-academic-perfomance-of- youth)

[senior](https://jurnal.peneliti.net/index.php/IJEIT/article/download/3140/2398/)<https://jurnal.peneliti.net/index.php/IJEIT/article/download/3140/2398/>

<https://studymoose.com/the-effects-of-gadgets-in-students-performances>



INFLUENCE OF XENOCENTRISM ON PURCHASE INTENTIONS OF THE CUSTOMERS IN THOOTHUKUDI CITY

J.Cathrine Shamma and T.Priyanka

PG and Research Department of Commerce, St. Mary's College (Autonomous), Thoothukudi
Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu.

ABSTRACT:

As globalization continues to shape customer preferences and behaviours, the phenomenon of xenocentrism emerges as a significant factor influencing purchase decisions. Consumer segments in different countries have generated a propensity to prefer imported products regardless of price and accessibility. This tendency of foreign products can be found in developing and emerging countries as well as in developed countries. When customers exhibit xenocentrism, they may more likely to choose products or services from foreign countries over local options and may perceive products from other countries as having higher quality compared to local one. This perception can develop from various factors like reputation, brand image or even cultural biases. This study aims to explore the impact of xenocentrism on customers' perception of product quality, brand image and prestige associated with foreign products. Understanding xenocentrism allows the domestic businesses to develop their products, create effective marketing strategies, enter into new markets and gain a competitive advantage. The aim of this research is to find out the influence of Xenocentrism which affects the customers buying behaviour. This study also analyses the Xenocentric mindset of the customers and the reason for this Xenocentric buying behaviour. This study will examined how Xenocentrism influence customers' choice, preference, purchase behaviour towards country origin products.

KEYWORDS: Xenocentrism, Customers' purchase behaviour, Foreign products preference, Foreign culture, Customers intentions.

INTRODUCTION:

Xenocentrism is derived from the greek root word Xeno, pronounced, “Zee-No” which means “Stranger” or “Foreign guest”. Xenocentrism is the opposite of ethnocentrism, referring to the preference for or idealization of foreign cultures, values, and products over one's own. It involves valuing external perspectives and often involves a critical view of one's own culture. Xenocentrism can influence various aspects of society, such as consumer choices, aesthetics, and societal norms. Xenocentrism can influence customers' purchase intentions in several ways. Individuals affected by xenocentrism may be drawn to foreign products or brands due to a perceived superiority or uniqueness associated with goods from other cultures. The appeal might be rooted in the belief that foreign products possess higher quality, style, or innovation compared to those from their own culture. Additionally, the desire to adopt foreign trends or conform to global standards can drive customers influenced by xenocentrism to choose products aligned with international preferences. Marketing strategies emphasizing the exotic or sophisticated nature of foreign offerings can further enhance the impact of xenocentrism on consumer choices. Xenocentrism shapes purchase intentions by fostering a preference for foreign products perceived as superior, stylish, or aligned with global trends. This study examines of how individuals' preferences for foreign cultures, values, and products impact their decision-making process when making purchases. This study seeks to explore the psychological and socio cultural factors underlying xenocentrism and its potential implications on consumer behavior. By investigating the ways in which xenocentrism shapes perceptions of product desirability, quality, and appeal, the research aims to contribute valuable insights to the field of marketing and consumer studies. Understanding the dynamics between xenocentrism and purchase intention is crucial for businesses and marketers aiming to navigate the complexities of a globalized marketplace.

OBJECTIVES:

- To identify the xenocentric factors which influence the customers’ purchasing behaviour.
- To know the customers’ expectations towards Indian products.
- To analyse the reasons for the failure of Indian origin brands.
- To offer various suggestions for the improvement of domestic brands.
- To figure out the strategies adopted by the foreign brands.



- To examine the relationship between influence of origin of product and frequency of their purchase.
- To know the relationship between foreign products superiority and level of support towards local products.

RESEARCH METHODOLOGY:

Sampling Design	Convenience Sampling
Period of Study	January – March 2024
Data Used	Primary and Secondary
Test for analysis	Percentage Analysis Method Garrett Ranking Techniques Likert scaling Techniques Chi –Square Test

LIMITATIONS OF THE STUDY:

Though best efforts were taken to minimise the limitations, still the study is not free from limitations. Therefore limitations are

1. The study covers only the city of Thoothukudi. So the results may not applied to other areas.
2. The whole population of respondents could not be approachable.
3. While collecting primary data biasedness of respondents in answering the questions was abarrier.
4. Reliability and accuracy of the study depends on the respondents’ openness and trueness towards answering each question in the questionnaire.

RESULTS AND DISCUSSION:**Frequency of purchase influenced by foreign culture**

Opinion	No .of Respondents	Percentage (%)
Rarely	22	18
Occasionally	56	47
Frequently	24	20
Always	18	15
Total	120	100

Source: Primary Data

Inference: It is inferred from the above table that 18% of the respondents are rarely purchase products from foreign brands influenced by foreign culture, 47% occasionally, 20% frequently and 15% always.

Thus the majority of the respondents i.e.,47% are occasionally purchase products from foreign brands influenced by foreign culture.

Opinion about foreign products superiority

Opinion	No. of Respondents	Percentage (%)
Not at all	9	7
A Little	26	22
Moderately	60	50
A Lot	25	21
Total	120	100

Source: Primary Data

Inference: The above table infers that 7% of the respondents are not at all believe that foreign made products are superior to local products, 22% little, 50% moderately, 21% a lot.

Thus the most of the respondents i.e., 50% moderately believe that foreign made products are superior to local products.

Opinion about perceived product quality of certain countries

Opinion	No .of Respondents	Percentage (%)
Yes	108	90
No	12	10
Total	120	100

Source: Primary Data

Inference: It is inferred from the above table that 90% of the respondents associate certain countries with high product quality and 10% of the respondents are not.

Thus the majority of the respondents i.e., 90% associate certain countries with high product quality.

Ranking of Reasons for the failure of Indian origin brands

Reasons	1	2	3	4	5	6	7	8	9
Lack of marketing and promotions	4050	690	1240	560	350	176	152	62	247
Outdated technology	1620	4209	1364	224	250	-	190	31	38
Lack of standard quality	2349	1725	2852	336	200	220	38	124	-
Lack of customer service	405	552	682	3192	550	352	304	155	133

Wrong market positioning	162	276	372	784	2850	528	342	186	190
Inadequate market research	81	207	124	616	650	2552	342	465	152
High prices	162	207	372	336	500	792	2242	279	133
Not addressing actual customer needs	486	276	248	168	250	484	570	1829	247
Refurbished Products	405	138	186	504	400	176	380	589	1140

Source: Primary Data

Total Score	Mean Score	Rank
7527	62.73	III
7926	66.05	I
7844	65.37	II
6325	52.71	IV
5690	47.42	V
5189	43.24	VI
5023	41.86	VII
4558	37.98	VIII
3918	32.65	IX

Inference: The above table infers that the respondents ranked outdated technology as I followed by Lack of standard quality, Lack of marketing and promotions, Lack of customer service, Wrong market positioning, Inadequate market research, High Prices, Not addressing actual customer needs, Refurbished products.

Thus, Outdated Technology is ranked as I for the failure of Indian Origin Brands.

Chi-squareTest of Significance between Perceived superiority and Level of support towards local products

Null Hypothesis (Ho):

There is no significant relationship between perceived superiority and level of support towards local products.

Alternative Hypothesis (H1):

There is a significant relationship between perceived superiority and level of support towards local products.

$$\chi^2 = \Sigma ((O - E)^2 / E)$$

Perceived Superiority /Level of support	Very Likely	Neutral	Very Unlikely	It depends on the product	Total
Not at all	5	4	0	0	9
A little	6	11	1	8	26
Moderately	9	27	3	21	60
A lot	2	7	2	14	25
Total	22	49	6	43	120

Rows& Column	O	E	(O - E)²	((O - E)² / E)
R1C1	5	1.65	11.22	6.8
R1C2	4	3.68	0.102	0.028
R1C3	0	0.45	0.203	0.45
R1C4	0	3.23	10.43	3.23

R2C1	6	4.76	1.54	0.324
R2C2	11	10.6	0.16	0.015
R2C3	1	1.3	0.09	0.069
R2C4	8	9.32	1.74	0.19
R3C1	9	11	4	0.36
R3C2	27	24.5	6.25	0.255
R3C3	3	3	0	0
R3C4	21	21.5	0.25	0.01
R4C1	2	4.58	6.66	1.45
R4C2	7	10.21	10.30	1.01
R4C3	2	1.25	0.56	0.45
R4C4	14	8.96	25.4	2.83
				17.47

The Chi-Square Calculated Value = 17.47

Degree of freedom (df) = (c-1)(r-1)

$$= (4-1)(4-1)$$

$$= (3)(3)$$

$$df = 9$$

Table Value: $\chi^2_{0.05} = 16.9$

Inference: The table value for 9 degrees of freedom at 5% level of significance is 16.9. It is found that the calculated value i.e., 17.47 is greater than the table value. Therefore, the Null Hypothesis (Ho) is rejected. Hence it is concluded that there is a significant relationship between perceived superiority and level of support towards local products.

FINDINGS:

- From the data collected 47% of the respondents Occasionally purchase products from foreign brands influenced by foreign culture.
- The most of the respondents i.e., 61% of them have chosen a product specifically because it was associated with a foreign culture.

- From the data collected, 50% of the respondents are moderately believe foreign made products are superior to local products.
- It is evident that the respondents have indicated that “Outdated Technology” was the top priority among reasons for the failure of Indian Origin Brand and so has been ranked first with the highest Garrett mean score of 66.05.
- It is observed from the Chi-square test that there is a significant relationship between Foreign products superiority and level of support towards local products.

SUGGESTIONS:

- ✓ Domestic product manufacturers should focus on quality and should update with technological features . This is only possible with R&D.
- ✓ Customers perceived that foreign products are unique; Concentration should be given on product uniqueness and features that differentiate local products from foreign ones. At this juncture, Domestic seller should adopt suitable marketing strategies like customisation, sustainability and heritage.
- ✓ In order to break the influence of product origin on perceived quality, a clear correlation between price and quality for local products, showing that their higher prices reflect superior quality and craftsmanship.
- ✓ Local product Manufactures should invest in quality assurance measures to ensure that domestic products meet international standards, addressing concerns about perceived quality.
- ✓ Customers should educate about the benefits of supporting domestic industries, including the advantage on the economy, job opportunities and cultural identity.

CONCLUSION:

In this competitive business world, it is important for the businesses to understand the customer buying behaviour. Understanding the customer buying behaviour is challenging one. Understanding the factors that influence the consumer’s purchasing decisions will help the business to identify customers exact needs and wants and to create products and services that meet their needs and desires.

Perceived Quality, Technological features, Attractive advertisements, Social Status, Brand Loyalty influence customer and induce them to buy foreign origin products. Admiring other countries ideas, values, culture, beliefs than their own, resulted in



discouraging local manufacturing products, reduce interest in local origin products and degrading one own country's values, beliefs, ideas. Xenocentrism foster challenges to the local manufacturing industries and increase a healthy competition between local company and a foreign company in a Global business. Local businesses should improve products quality, update with latest technology in order to sustain their businesses in the long run.

It is important for the developing economies to maintain a balance between cross cultural understandings. The impact of Xenocentrism is both positive and Negative. It encourages openness to diversity and can lead to innovation. This research study can be concluded based on the idea that Xenocentrism influencing customer purchase intentions and explain their purchase behaviour towards foreign branded products influenced by foreign culture.

REFERENCES:

- ✚ <https://en.m.wikipedia.org>
- ✚ www.populismstudies.org
- ✚ <https://abhijeetpratap.medium.com>
- ✚ <https://courses.lumenlearning.com>
- ✚ <https://scholar.google.com>
- ✚ <https://www.researchgate>
- ✚ <https://study.com>
- ✚ <https://www.mdpi.com>



CUSTOMER’S PERCEIVED BEHAVIOUR TOWARDS ONLINE SHOPPING

S. Christy Darwin Dina and P. Maria Sahaya Rossiyana

PG and Research Department of Commerce, St. Mary’s College (Autonomous), Thoothukudi

Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu.

ABSTRACT:

Online shopping has become increasingly popular, with customers exhibiting various behaviors influenced by factors such as trust, convenience, and product variety. This study examines the perceived behavior of customers towards online shopping, aiming to provide insights into the drivers behind their decisions. Through a comprehensive analysis of these factors, businesses can develop strategies to enhance the online shopping experience and increase customer satisfaction.

KEYWORD: Trust, convenience, product variety, online shopping experience, customer satisfaction.

INTRODUCTION:

In recent years, the scenery of retail has undergone a profound transformation with the advent of online shopping platforms transforming the way consumers interact with business. For business looking to prosper in the fiercely competitive e-commerce market, it has become imperative to comprehend customers perceived behaviour towards online shopping. Early in the 1990s, the idea of online shopping first surfaced as a cutting-edge test in the field of electronic commerce. But as internet access has spread and technology has advanced, online shopping has become a powerful force in the retail industry.

Online platforms accessibility, ease of use and vast selection of options have changed customer preferences and purchasing behaviours. Online shopping has been increasingly popular due to its

convenience it allows people to browse and buy things either at home or on the road. Customer's propensity to conduct business online is greatly impacted by worries about the security of their personal and financial information as well as their confidence in the dependability of online merchants. For customers looking for variety and value in their shopping experience, having access to a wide selection of goods from many suppliers often at cheap prices is appealing.

Online reviews, social media endorsements and peer recommendations can have a big influence on what customers decide to buy and how they see online platforms. Customer loyalty and repeat business are influenced by the perceived enjoyment of the online purchasing experience which includes elements like the excitement of making a discovery, waiting for a delivery and feeling satisfied with the entire process. Additionally influencing consumer's attitudes and actions about internet purchasing are cultural norms, societal values and demographic traits. Different consumer categories and geographical locations may have different views towards the use of technology, individuality versus collectivism and general preferences. As a result, engaging diverse client bases may require customized techniques.

STATEMENT OF THE PROBLEM:

The advent of e-commerce has revolutionized the retail landscape providing consumers with unprecedented convenience and accessibility to products and services. This paper aims to explore the intricacies of customer perceived behaviour towards online shopping, examining factors influencing their decisions and the implications for businesses. By addressing the identified gaps in knowledge, this study aims to provide valuable insights for businesses to effectively navigate the dynamic landscape of e-commerce and cultivate long-term customer relationships. The rapid growth of e-commerce has transformed the retail landscape, offering consumers unparalleled convenience and choice.

Despite the increasing popularity of online shopping, there remains a gap in our understanding of customers' perceived behavior towards this mode of shopping. This study seeks to address this gap by investigating the factors that influence customer's perceptions and attitudes towards online shopping. To identify the key factors that influence customers' perceived behavior towards online shopping. Examine the impact of trust, convenience and security on customer's willingness to shop online. And analyze how demographic factors such as age,

gender and income influence customer's attitudes towards online shopping. Explore the role of online reviews and recommendations in shaping customers' perceptions of online shopping.

OBJECTIVES OF THE STUDY:

The following are the objectives focused in this study:

- ❖ To analyse the reason of preferences out of variety of goods available in online shopping.
- ❖ To study the customers satisfaction level towards online shopping.
- ❖ To understand the perception of the customers on online sites.
- ❖ To analyse the impact of purchasing behaviour towards online platforms.

RESEARCH METHODOLOGY:

Sampling design	Simple random sampling
Period of the study	January-March 2024
Data used	Primary and Secondary
Test for analysis	Simple percentage analysis Likert scale technique Garrett ranking technique Chi-square test

LIMITATIONS OF THE STUDY:

- ❖ An important limitation of the study was that the customers were not willing to disclose their views .
- ❖ Responses generated from the respondents are based on their experience, which might have caused errors.
- ❖ The other limitation was the non-cooperative nature of the employee's willingness to give information about their true selves.

RESULT AND DISCUSSION:

CUSTOMER'S FEELS TOWARDS ONLINE PURCHASES:

CUSTOMERS FEEL	FREQUENCY	PERCENTAGE
Highly Satisfied	12	10
Satisfied	59	49.2
Neutral	40	33.3
Dissatisfied	7	5.8
Highly Dissatisfied	2	1.7
TOTAL	120	100

Source: Primary Data

INFERENCE:

From the above table 10% of the respondents are highly satisfied with the online purchases, 49.2% of the respondents are satisfied with the online purchases, 33.3% residence of the respondents are feels neutral with the online purchases, 5.8% of the respondents are dissatisfied with the online purchases and 1.7% of the respondents are highly dissatisfied with the online purchases.

GARRETT RANKING:

ONLINE SITES BASED ON PREFERENCES

S. No	$100(R_{ij}-0.5/N_j)$	Calculated Value	Garrett Value
1	$100(1-0.5)/12$	4.2	84
2	$100(2-0.5)/12$	12.5	73
3	$100(3-0.5)/12$	20.8	66
4	$100(4-0.5)/12$	29.2	61
5	$100(5-0.5)/12$	37.5	56
6	$100(6-0.5)/12$	45.8	53
7	$100(7-0.5)/12$	54.2	49
8	$100(8-0.5)/12$	62.5	44
9	$100(9-0.5)/12$	70.8	40

10	$100(10-0.5)/12$	79.2	34
11	$100(11-0.5)/12$	87.5	27
12	$100(12-0.5)/12$	95.8	18

Particulars	1	2	3	4	5	6	7	8	9	10	11	12
Amazon	92	12	9	1	3	-	1	-	-	2	-	-
Swiggy	61	37	7	3	4	2	-	3	-	2	1	-
Meesho	62	19	28	2	4	-	1	-	1	1	1	1
Flipkart	63	19	11	17	4	2	-	1	-	2	-	-
Zomato	64	14	7	6	19	4	2	-	2	2	-	-
Shopify	56	16	9	3	6	19	4	3	1	1	-	2
BigCommerce	61	10	8	5	7	2	17	3	3	2	-	2
IndiaMART	57	16	9	4	5	3	-	17	3	4	-	2
Myntra	58	16	9	2	7	2	1	-	17	4	1	3
Nykaa	60	13	11	2	6	2	-	-	-	20	3	3
eBay	57	15	10	3	6	2	-	-	-	3	17	7
Others	57	17	8	4	3	4	-	-	1	1	3	22

Source: Primary Data

Particulars	Ranks given by Respondents												Total	Score	Rank
	1	2	3	4	5	6	7	8	9	10	11	12			
Amazon	7728	876	594	61	168	-	49	-	-	68	-	-	9544	79.5	I
Swiggy	5124	2701	462	183	224	106	-	132	-	68	27	-	9027	75.2	II
Meesho	5208	1387	1848	122	224	-	49	-	40	34	27	18	8957	74.6	III
Flipkart	5292	1387	726	1037	224	106	-	44	-	68	27	-	8911	74.2	IV
Zomato	5376	1022	462	366	1064	212	98	-	80	68	-	-	8748	72.9	V
Shopify	4704	1168	594	183	336	1007	196	132	40	34	-	36	8430	70.2	VI
BigCommerce	5124	730	528	305	392	106	833	132	120	68	-	36	8374	69.7	VII

IndiaMART	4788	1168	594	244	280	159	-	748	120	136	-	36	8273	68.9	VIII
Myntra	4872	1168	594	122	392	106	49	-	680	136	27	54	8200	68.3	IX
Nykaa	5040	949	726	122	336	106	-	-	-	680	81	54	8094	67.4	X
eBay	4788	1095	660	183	336	106	-	-	-	102	459	126	7855	65.4	XI
Others	4788	1241	528	244	168	212	-	-	40	34	81	396	7732	64.4	XII

INFERENCE:

From the above table Amazon ranked as I Garratt score 79.5%, Swiggy ranked as II with the score 75.2%, Meesho ranked as III with the score 74.6%, Flipkart ranked as IV with the score 74.2%, Zomato ranked as V with the score 72.9%, Shopify ranked as VI with the score 70.25%, BigCommerce ranked as VII with the score 69.7%, IndiaMART ranked as VIII with the score 68.9%, Myntra ranked as IX with the score 68.3%, Nykaa ranked as X with the score 67.4%, eBay ranked as XI with the score 65.4% and Others ranked as XII with the score 64.4%.

LIKERT SCALE METHOD:

PURCHASING BEHAVIOUR OF CUSTOMERS

Products	Always	Often	Sometimes	Rarely	Never	Total
Cosmetic items	96	6	10	2	6	554
Foods	62	37	12	4	5	507
Dry fruits	60	14	36	5	5	479
Electronic goods	64	14	17	22	3	474
Juice items	62	9	16	8	25	435
Grocery goods	56	15	18	21	10	446
Furniture	58	10	30	10	12	452
Medical items	57	23	15	17	8	464

Dresses	72	18	14	7	9	497
Study materials	64	28	17	6	5	500
Decoration items	62	17	30	6	5	485
Others	61	13	23	14	9	463

Source: Primary Data

Particulars	Average	Rank
Cosmetic Items	4.53	I
Foods	4.22	II
Dry fruits	3.99	VI
Electronic goods	3.95	VII
Juice items	3.62	XII
Grocery goods	3.71	XI
Furniture	3.76	X
Medical items	3.86	VIII
Dresses	4.14	IV
Study Materials	4.16	III
Decoration Items	4.04	V
Others	3.85	IX

INFERENCE:

From the above table 4.53% of the respondents prefer cosmetic items that is ranked as I, 4.22% of the respondents prefer Foods ranked as II, 4.16% of the respondents prefer Study materials ranked as III, 4.14% of the respondents prefer Dresses ranked as IV, 4.04% of the respondents prefers Decoration Items ranked as V, 3.99% of the respondents prefer Dry fruits ranked as VI, 3.95% of the respondents prefer Electronic goods ranked as VII, 3.86% of the respondents prefer Medical Items ranked as VIII, 3.85% of the respondents prefer Others ranked as IX, 3.76% of the respondents prefer Furniture and ranked as X, 3.71% of the respondents are prefers Grocery goods ranked as XI and 3.62% of the

respondents prefer Juice items and that's ranked as XII.

CHI-SQUARE TEST

NULL HYPOTHESIS (H₀): There is no significant relationship between educational level and engage in online shopping.

ALTERNATIVE HYPOTHESIS (H₁): There is a significant relationship between educational level and engage in online shopping.

RELATIONSHIP BETWEEN EDUCATIONAL LEVEL AND ENGAGE IN ONLINE SHOPPING

OBSERVED FREQUENCIES (O)

Educational Level	Engage in online shopping				Total
	Daily	Weekly	Monthly	Rarely	
SSLC	-	8	14	6	28
HSC	1	4	9	8	22
Bachelor's degree	1	9	20	5	35
Master's degree	-	5	10	2	17
Professional course	1	6	6	5	18
Total	3	32	59	26	120

EXPECTED FREQUENCIES (E)

Educational Level	Engage in online shopping				Total
	Daily	Weekly	Monthly	Rarely	
SSLC	-	7.46	13.76	6.06	27.5
HSC	0.55	5.86	10.81	4.76	22

Bachelor's degree	0.87	9.33	17.20	7.58	35
Master's degree	-	4.53	8.35	3.68	17
Professional course	0.45	4.9	8.82	3.9	18.07
Total	2	32.5	59	26	120

CHI-SQARE TEST

Rows and columns	O	E	O-E	(O-E)2	(O-E)2/E
R1C1	-	-	-	-	-
R2C1	1	0.55	0.45	0.20	0.36
R3C1	1	0.87	0.13	0.016	0.01
R4C1	-	-	-	-	-
R5C1	1	0.45	0.55	0.30	0.67
R1C2	8	7.46	0.54	0.29	0.03
R2C2	4	5.86	1.86	3.45	0.59
R3C2	9	9.33	0.33	0.10	0.01
R4C2	5	4.53	0.47	0.22	0.04
R5C2	6	4.9	1.1	1.21	0.24
R1C3	14	13.76	0.24	0.057	0.004
R2C3	9	10.81	1.81	3.27	0.30
R3C3	20	17.20	2.8	7.84	0.45
R4C3	10	8.35	1.65	2.72	0.32
R5C3	6	8.82	2.82	7.95	0.90
R1C4	6	6.06	0.06	0.003	0.0005

R2C4	8	4.76	3.24	10.49	2.20
R3C4	5	7.58	2.58	6.65	0.87
R4C4	2	3.68	1.68	2.82	0.76
R5 C4	5	3.9	1.1	1.21	2.69
Total					10.505

$$X^2 = 10.505$$

Degree of Freedom:

$$= (r-1) (c-1)$$

$$= (5-1) (4-1)$$

$$= 4*3$$

$$= 12$$

Table value = 21.02, Calculated value = 10.505

INFERENCE: The table value for 3 degree of freedom at 5% level of significance is 21.026. It is found that the calculated value 10.505 is less than the table value (21.026>10.505). Thus the result is independent. Hence it is concluded that there is no significant relationship between the education level and engage in online shopping. Therefore Null Hypothesis is accepted.

MAJOR FINDINGS:

- Majority of the respondents are Male.
- Majority of the respondents are from the age group between 18-30.
- Majority of the respondents are studied Bachelor's degree.
- Majority of the respondents are full time workers.
- Majority of the respondents have Rs 100001 to Rs 300000 as their annual income.
- Majority of the respondents are satisfied towards the online purchases.
- Majority of the respondents are monthly engage in online shopping

SUGGESTIONS:

- ❖ Customers are more likely to shop online if they trust the website and perceive it as credible.
- ❖ Customers are influenced by the reputation of the brand when making online shopping decisions.
- ❖ The shopping experience to individual preferences can positively influence customer behaviour.

CONCLUSION:

In conclusion, customer perceived behavior plays a crucial role in the success of online shopping. To succeed in the competitive online shopping environment, businesses must understand these factors and actively manage customer perceptions. By focusing on building trust, enhancing convenience, mitigating risk, leveraging social influence, delivering value, optimizing website design, maintaining brand reputation, personalizing the shopping experience, offering excellent customer service and providing attractive promotions, businesses can effectively influence customer behaviour and drive success in online shopping. Emotional Factors as excitement, trust and fear influence customer behaviour in online shopping. Mobile Shopping influences customer behaviour and perceptions of online shopping.

E-Commerce is a powerful means to connect the unconnected to global trade

-Arancha Gonzalez

WEBSITES:

<https://www.researchgate.net>

<https://www.emerald.com>

<https://en.m.wikipedia.org>

<https://www.academia.edu>

SATI PRATHA - HEAVEN IN THE HEREAFTER

N.Arockia Esther and S.M. Vimala

PG and Research Department of History, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu.

ABSTRACT

Hinduism, being the oldest religion, had many sacraments in it. *sati* also known as 'suttee', burning a woman alive with her husband's dead body, was the most influential and controversial sacrament. It was an old practice in some cultures, especially in ancient India. The term '*sati*' means the Hindu practice of widow burning or the burning of the living widow with the corpse of her husband. In Sanskrit, the word '*sati*' thus means feminine noun from '*sat*' which means goodness, virtue and truth. The concept of *sati* was tied to ideas of devotion and loyalty. People believed that a woman's life was not complete without her husband. By sacrificing herself, the widow showed her dedication to her husband and aimed for spiritual benefits for both in the afterlife. This was because many Hindu women considered fire as a sacred thing and *sati* as their duty. Their religious texts promised them an afterlife in heaven with their husband. Thus, they continued practicing *sati*, believing that fire will not harm them, and they will be with their husband's even after. It was abolished by William Bentinck, yet *Sati* continues to be a reality in parts of rural India. The socio - religious awakening or reform movements were the expression of the national awakening in India and aimed at a revision of the medieval social structure and religious outlook. In the religious sphere, there sprang up a movement which till 1885, in last half of nineteenth century, an awakening in India was seen in the time of Raja Ram Mohan Roy, who bridge the gap between ancient and modern India.

KEYWORDS: *sati*, *suttee*, widow burning, William Bentinck, socio – religious reform movements, social structure, religious outlook

Introduction

The *Sati* tradition was prevalent among certain sects of the society in ancient

India, who either took the vow or deemed it a great honour to die on the funeral pyres of their husbands. Raja Ram Mohan Roy gained more popularity through the activity of abolition of *Sati*. The abolition of *Sati* is one of the most significant turning points in the social history of modern India. He started a campaign for the abolition of *sati* system' in which wife of the dead burnt herself in the funeral pyre of her husband. He also condemned polygamy and child marriage, denounced casteism, advocated the right of Hindu widows to remarry, etc. With his active persuasion Lord William Bentinck, the then Governor General of British India passed the famous Bengal Sati Regulation XVII in 1829 stated *Sati* as illegal and punishable by courts. His social reforms made him the 'first Modern Man' in India.

Raja Ram Mohan Roy was not only a great social- religious reformer but was also a great educational thinker. He was a great scholar, independent thinker and a multilingual person. He believed that education was prime necessity for the uplift of Indian Society. His efforts to protect Hinduism and Indian rights by participating in British Government earned him the title 'The Father of the Bengal Renaissance'.

Early Life

Rajaram Mohan Roy, the first great modern Indian pioneer was born on 22nd May 1772 in an orthodox Brahmin family at Radhanagar a village in the Hooghly district in Bengal. He was the son of Ramakanto Roy and Tarini Devi who were devoted Hindus of the Vaishnava sect and socially conservative in outlook.

Education

During the Muslim rule in India, the language used was Persian. Proper knowledge of Persian and Arabic was also very essential to get employment or to correspond with the government. He was afterwards sent to Patna to learn Arabic and lastly to Banaras to obtain a knowledge of Sanskrit, the sacred language of the Hindus. His teacher at Patna set him to study Arabic translations of some of the writings of Aristotle and Euclid, besides Bengali and Sanskrit, he had mastered Arabic, Persian, Hebrew, Greek and Latin. Roy's familiarity with such diverse languages exposed him to a variety of cultural, philosophical and religious experiences. His comparative study of the various scriptures led him to discover the fundamental unity of all religions in their doctrines and principles, mainly the belief in monotheistic and universal brotherhood of man.

Career

In 1803, he began to work for the East India Company in the revenue department. He learned English under the guidance of Digby and read the works of contemporary European writers on politics, history, law and economics. In 1809, he was transferred to Rangpur as Dewan to the Collector of the district. After completed his studies, Ram Mohan Roy worked with the East India Company at various places in Bengal, before settling in Calcutta.

Eradicating Superstitious Beliefs

Raja Ram Mohan Roy lived in a period when child marriage and *sati* was highly practiced among the people in the society. Wives were burnt along with the dead husbands whether they were willing or not. Girls were married off when they were five or six years old. Ram Mohan was sick and tired of these practices. Though he had high regard for Hindu religion, but he felt that Hindus had yet to know about the religion correctly. He preached for equality among men and women and said people should also give up superstitious beliefs.

Efforts to Abolish Sati

In 1811, Roy witnessed his brother's widow being burned alive on her husband's funeral pyre. Three years later he retired and concentrated on complaining against the practice of woman dying as *sati*. Raja Ram Mohan Roy was the first Indian to protest against this custom. He advocated that this was completely against the women's right to live in the society as a human being. In 1818, Roy wrote his first essay on *sati*, in which he argued that the woman had an existence independent of her husband and hence, she had no reason to end her life on the demise of her husband. The society had no right over her life. Right to life of both men and women was equally important. He used his journal '*Sambad Kaumudi*', which began to appear from December 1821, 'as a regular weapon in this agitation'. In 1822, he published his 'Brief Remarks Regarding Modern Encroachments on the Ancient Rights of Females'. According to the 'Hindoo Law of Inheritance', wherein he noted: 'It is not from religious prejudices and early impressions only, that Hindoo widows burn themselves on the piles of their deceased husbands but also from their witnessing the distress in which the widows of the same rank in life are involved, and the insults and slights to which they are daily subjected, that they become in a great measure regardless of their existence after the death of their husbands; and this indifference, accompanied with the hope of a future reward held out to them, leads them to the

horrible act of suicide.’ It seems that Lord Hasting’s government recognized the importance of Ram Mohan’s campaign. By the year 1828, the company’s government also came to hold digenite opinions for the abolition of the *sati* rite.

Lord William Bentinck

The cruel custom of burning the widows had, the sanction of antiquity and the approbation of the Hindu people. The alien rulers did not venture to touch it lest thereby, they incurred the displeasure of the Hindus and stood the chance of losing their revenue and empire. The custom could have been stopped if the Nizamat Adalat had given rulings on the lines indicated by Rammohan Roy.

Lord William Bentinck was Governor of Madras from 1803 – 1807, but he was removed from his office on account of his failure to suppress the Mutiny at Vellore. He came back to India as the Governor-General in 1828. He was a conscientious man and felt it, his duty to promote the welfare of the Indians. On his arrival in India, he undertook an enquiry into the practice of *Sati* and on the basis of the information received he resolved to put a stop to the cruel system with an iron hand. He consulted many eminent persons including the Marquis of Hastings. Lord William Bentinck ascertained the views of the officers regarding the attitude of the troops.

Bengal Sati Regulation Act of 1829

The Bengal Sati Regulation, or Regulation XVII, A.D. 1829 of the Bengal Code was a legal act promulgated in British India under East India Company rule, by the then Governor-General Lord William Bentinck. The Act made the practice of *Sati* or *Sutteeor* the immolation of a Hindu widow on the funeral pyre of her deceased husband - illegal in all jurisdictions of British India and subject to legal prosecution.

The ban was the first major social reform legislation enacted by the British in India. It led to legislation against other old Hindu practices in the Indo-Aryan-speaking regions of India that limited the rights of women, especially those related to the inheritance of property. The Regulation was repealed and superseded by the Sati (Prevention) Act, 1987 when attempts to revive the custom in the 1980s brought further legislative focus on the practice.

In 1803, William Carey, a British missionary working in Bengal, set about collecting statistics on the number of women who burned to death in *Sati* rites, in order to urge the administration to stop the gruesome practice. According to his estimates, 438 widows had burned to death within a radius of thirty miles around

Calcutta in the span of a year. Lord Wellesley referred the matter to the Supreme Court in 1805.

February of that year, JR. Elphinstone, the Collector of Gaya, stopped a twelve year old widow from mounting the pile. In another incident, a girl named Ghoorna was being taken in a palanquin to the cremation ground for immolation when the Magistrate of Benares forbade her to proceed with the rite. The girl returned home. In the wake of an attempted immolation by another twelve year old widow, which the Magistrate of Bihar stopped, a letter was addressed to the Nizamat Adalat. As a result, the members of the council suggested that *Sati* burnings be banned by law.

These pressures on the Government to abolish *Sati* by law as the years passed. In the meantime, Rammohan Roy, a wealthy Brahmin intellectual of Bengal, who had been deeply shocked by the immolation of his brother's wife which he is said to have tried to launch a crusade against widow burning and published two pamphlets, one in Bengali and the other in English, pleading for the abolition of *Sati*. The first of these two tracts appeared in 1818 and was titled 'Conference between an advocate for and an opponent of the practice of burning widows alive'. The second tract followed two years later, Roy argued that *Sati* caused innocent blood to be spilt was a blot on Hindu society. Man of liberal leanings, Roy had founded newspapers and schools and wrote in Persian, Bengali and English condemning practices like caste discrimination and blind adherence to rituals. He later founded the Brahmo Samaj which sought to propagate a non-sectarian concept of religion. It stood for the freedom of the widow to remarry and equal rights of man and women. In 1830, he became one of the first Indian to travel to England, where he died three years later.

At the time of the publication of his two pamphlets on *Sati*, on an average one widow was being burnt to death every day in Calcutta alone. It is said that in subsequent years, Roy often went to the cremation grounds to try and stop widows from perishing on the pyre.

Successful Campaign of Abolition of Sati

Roy was famous for his long and successful campaign for the abolition of *Sati*, self-immolation of widows on the funeral pyre of their husbands. He wrote articles to show that the sacred books of Hindus did not sanction *Sati* and appealed to the reason, humanity and compassion of the people. The rite of *Sati* was the most furious social evil in the eighteenth and early nineteenth century. The *Sati* practice was prevalent in

the Hindu society from a long time past. From ancient time it is known to have been in vogue.

Rajaram Mohan Roy opposed this heinous practice. A case had occurred in his own family when the widow of his elder brother Jagmohan Roy committed *Sati* in 1811. Rajaram Mohan Roy published many books in Bengali and also translated into English against the practice of *Sati*. In 1818, his first tract was published and in 1819 the second one in Bengali and also translated it in 1820.

Pioneer of Modern Indian Renaissance

Raja Ram Mohan Roy was the first great modern reformer is popularly known as the ‘Maker of Modern India’. He was given the title ‘Raja’ by the then Mughal Emperor Akbar II of India in 1831. He stood firmly against all sort of social bigotry conservatism and superstitions. Among his efforts, the abolition of the brutal and inhuman Sati Pratha was the most prominent.

First Great Leader of Modern India

Rabindranath Tagore has rightly remarked Ram Mohan was the only person in his time, in the whole world of man, to realize completely the significance of the modern age. He knew that the ideal of human civilization does not lie in the isolation of independence, but in the brotherhood of inter dependence of individuals as well as nations in all spheres of thought and activity. He supported the cause of liberty, democracy and nationalism and opposed injustice, oppression and tyranny in every form.

As a Social Reformer

Roy rejected the barriers of caste divisions and stood forth as the high priest of universalism and love. The best example of his lifelong crusade against social evils was the historic agitation he organized against the inhuman custom of women becoming *Sati*. When the orthodox Hindus petitioned to parliament to withhold its approval of Bentinck’s action of banning the rite of *Sati*, he organized the counter petition of enlightened Hindus favour of Bentinck’s action. To raise the status of women he demanded that they should be given the right of inheritance and property. One of his greatest achievements is the uplift of the position of women in India. First of all, he tried to give women, proper education in order to give them better social status in society. His effort on the abolition of *Sati* made him immortal as a social reformer.

Untimely Death

After a point of time, he fell ill and became bedridden. There were some who respected and loved him actually took care of him. Doctors with great reputation treated him, but his health did not improve. Rajaram Mohan Roy on 19th September suddenly fell ill with meningitis. He passed away on 27th September 1883 and buried at the Arnos Vale Cemetery in Bristol itself, with a tombstone whose inscription notes his scholarship and mastery of language.

‘HIS UNWEARIED LABOURS TO PROMOTE THE SOCIAL, MORAL AND PHYSICAL CONDITION OF THE PEOPLE OF INDIA. HIS EARNEST ENDEAVOURS TO SUPPRESS IDOLATRY AND THE RITE OF SATI AND HIS CONSTANT ZEALOUS ADVOCACY OF WHATEVER TENDED TO ADVANCE THE GLORY OF GOD AND THE WELFARE OF MAN, LIVE IN THE GRATEFUL REMEMBRANCE OF HIS COUNTRYMEN’.

Conclusion

The practice of *sati*, or of burning or burying alive the widows of Hindus, is revolting to the feelings of human nature, is hereby declared illegal and punishable by the criminal courts. The Prohibition of Sati Act 1829, marked a significant turning point in India’s social and cultural history and was a crucial step towards the empowerment of women. The abolition of *sati* was instrumental in raising awareness about women’s rights and the need to challenge traditional social and cultural practices that were harmful to women. The Prohibition of the Sati Act remains an essential legislative landmark in India’s history, and its impact is still felt today. The government should try and bring a social transformation to save the lives of innocent females. Social awakening is much needed now more than ever. We need to teach and enlighten people and make them aware of what is right and what is wrong regardless of what religion says.

References

1. Ashok Narang, *Indian Society and Cultural*, Murari Lal & Sons Pvt, Ltd., New Delhi, 2007.
2. Chopra, J.K., *History of Modern India Culture*, Unique Publishers, New Delhi, 2010.
3. Gargi Chakravathy, *Rajaram Mohan Roy, Today Context*, Published in New Age, Weekly June, 25.2.2022.



4. Jogendra Chunder Ghose, M., (ed.) *The English Works of Raja Rammohun Roy*, (Vol.I), Government of India, Allahabad, 1906.
5. Kishore, B.R., *World Famous Personalities*, New Light Publications Pvt. Ltd., New Delhi.
6. Malti Sharma, *The Builder of Modern India: Rajaram Mohan Roy*, Aman Book Center, 2014.
7. Meenu Bhargave, R.C., *Women Education and Policies*, Oxford University Press, London, 2005.
8. Mulk Raj Anand, *Sati: A Write up of Raja Ram Mohan Roy about Burning of Widows in India*, B.R. Publishing Cooperation, U.S.A, 2000.
9. Neera Desai, *Woman in Modern India*, Vora and Co., Publishers, Bombay, 1957.
10. Nithya, N.R., *Modern Indian Social and Political Thought*, University of Calicut, Kerala, 2017.
11. Ramchandra Guha, *Makers of Modern India*, Penguin Books Ltd., London, 2010.
12. Ravi Rajan, Singh, M.K., *Raja Ram Mohan Roy*, Ocean Books Pvt, Ltd., New York, 2015.
13. Simmi Jain, *Encyclopedia of India Women Through the Ages*, (Vol 1), (Ancient India), Kalpaz Publications, Delhi, 2003.

SAIVA SYMBOLS IN VIJAYANAGAR EMPIRE

P. Kanaga Lakshmi and J. Jane D’Almeida

PG and Research Department of History, St. Mary’s College (Autonomous), Thoothukudi
Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu.

ABSTRACT

The term ‘*Numismatics*’ is normally associated with the avocation of collecting coins. The study of coins also places an important role in archaeology. Coins are useful because they are normally issued by a governing authority and hence constitute a form of official document. Coins have revealed the existence of cities and even kingdoms that are not mentioned in the old literary histories. Even when an ancient society is known from other sources, coins can be helpful in various ways. The designs on coins revealed something of the societies, religion or mythology and reflect the evolution of its art. The only indication of prominent persons of ancient times looked like is provided by the portraits on coins. This kind of information is obtained from coins by the scientific techniques of description and classification. Scientific procedure involves assaying the metallic content of a coinage over a long period of time in order to obtain information about the economic history of the society. This study on Vijayanagar coins reveals the growth of Hinduism and its condition during the Vijayanagar period.

Keywords: Numismatics, Vijayanagar Coins, Religion, Symbols, Hinduism

Hinduism:

Hinduism has been the faith of millions since the days of the Vedas. The rituals and rites, ceremonies and vows prescribed in Hinduism are all directed to the promotion of the well-being of all the worlds.

The Vedas have been identified, from time immemorial, as the fountain head of all Hindu culture. The Hindus have a treasure house of knowledge in the form of four Vedas, viz. Rigveda, Yajurveda, Samaveda and Atharvaveda. The Rigveda, Yajurveda and Samaveda deal with gods and sacrifices, the Atharvaveda deal with man, his protection from harmful adversaries, welfare in life and similar aspects. The end of the Vedas contains philosophical preaching's called the Upanishads or Vedanta.

Vedic religion was one of the aspects of Vedic Civilization which include ideals, society, education, economic life, languages and literature, arts and philosophy, medical sciences, polity and other sciences. Vedic religion was a guiding principle for the conduct of individual life. The fundamentals of Vedic religion comprise certain unshakable beliefs. They include belief in divine power endowed in different gods and goddess as Brahma as Creator, Vishnu as Protector, Siva as Extinguisher of the universe, besides the goddess Sarasvati, Lakshmi, Parvati, Lalitha, Sun, Moon, Ganapati, Kumara and deified spirits dwelling in rivers, hills, fire, water and earth and so on.

South India witnessed great heights in political and cultural fields which it had not witnessed earlier and hence the Vijayanagar period is referred to as the 'Golden Age of South Indian history'. This appellation is justified on the basis of the rich variety of gold coins which were issued by the kings of this dynasty. Majority of the historians have agreed that the aim and purpose of the foundation of this empire was to bring back the glory of Hinduism and Hindu dharma.

During the Vijayanagar period, sage Vidyanaraya revived the lost glory of the Vedic and Puranic religion which suffered a lot, almost to the point of extinction, as a result of repeated Muslim invasions over the southern kingdoms. As the guru or teacher of the Sangama brothers Harihara I and Bukka I, he inspired them to establish a new kingdom first at Anagondi and later at Vijayanagar in A.D.1336.

In a short period, it grew into a mighty empire, which lasted more than three centuries under the patronage of great rulers, viz. two Hariharas, two Bukkas, two Devarayas, two Narasimharayas, Krishnadevaraya, Achyutadevaraya, Sadasivaraya, Venkatapathiraya and others. The Vedic Puranic religion flourished in all its aspects and Vedic studies, rituals, art, architecture, regional languages, literature, fine arts, ayurveda, the philosophical ponderings as contemplated by the sage Vidyanaraya all thrived.

Vidyaranya invited eminent scholars in the Vedas and Sastras from all over the country by offering them agraharas or villages as grants. In the Kraku grant of Harihara II dated A. D. 1376 it is mentioned that one Agrahara was given to 63 Brahmanas well versed in the Vedas. During the Vijayanagar period the sacrificial dharma was intended for Vedic scholars and household rituals took first place for the common man visiting temples and undertaking pilgrimages, enjoying entertainment through folk art, participating in academic activities etc. which played a large role in propagating Vedic religion among the people of all classes, in an Agamic way.

The religious conditions of the period were such that it gave an opportunity for all religions to thrive on their own accord without hindering the promotions of other religions. Saivism and Vaishnavism, the two major religions of south India which had uneasy relations in the earlier period, now flourished side by side. Grants to Saiva and Vaishnav temples were given alike. Some rulers were more inclined towards Virasaivism of Basavanna. The only religious misunderstanding during this period was between Jainas and Sri Vaishnavas but it was amicably settled by Bukka I.

Another important factor was the harmonious development of the three schools of Vedanta, viz. Advaita, Dvaita and Visistadvaita during the period. Vidyaranya of the Advaitamatha of Sringeri, Madhvacharya of Dvaitamatha and Vedanta Desika of the Visistadvaita received equal respect and regard from Vijayanagar rulers though Vidyaranya was the spiritual leader of the foundation of the Vijayanagar Empire. Tolerance of different schools of spiritual thoughts was reflected in the coinage of the period.

Coins are one of the prime materials, apart from sculptures, to know the religious history of a region. The Vijayanagar coins were intact even today because of the symbols of gods and goddesses. The sculptures representing various gods and goddesses and the symbols of worship on the walls and in the pillars of temples of Vijayanagar period certainly helps us to know the religious history of the period.

Saivism

Hinduism is distinctly different from other religions because of holding an incomparable form of Monism in accompaniment with the idea of other deities as subordinate to the non-dual Supreme Spirit. Every cult of the Hindus gives a particular name to this Supreme Spirit, holding all other gods and goddesses as His or Her agents.

Saivism is the religion of such a cult which holds Lord Siva as the Supreme Spirit, pervading the entire universe with His bigger form. Unfortunately, the history of this cult from pre-historic times down to the early centuries of Christian era is somewhat obscure.

The people of Mohenjadarо worshipped a male deity who may be regarded as the proto type of Siva. He is represented as seated in a yoga posture, surrounded by animals and as bearing three visible faces with two horns on two sides of a tall head-dress. During the Vijayanagar period significant changes occurred in the fortunes of Saivasects. Bhikshavritthi Mathawas the sole institution which influenced the rulers of Karnataka and Andhra.

The patronage to the Sri Kalahastisvara Temple by the rulers of Vijayanagar especially by Krishnadevaraya, Achyutaraya and Sadasivaraya was held in high esteem. With the lavish gifts of these benevolent kings, the temple undoubtedly reached its height of glory. The very fact that Achyutaraya chose Sri Kalahasti for celebrating his coronation shows his reverence towards the deity Sri Kalahastisvar.

The above references show how the rulers of Vijayanagar patronised Saivism. This is also reflected on their coinage. In the year 1976, some Vijayanagar gold coins were found in a pot in the Chinna chowk village of Kadapa district. The different types of coins are found in this hoard bearing the gods and goddesses like Uma-Maheswara, Balakrishna, Lakshmi-Narayana and Lord Venkateswara which were issued by Sri Pratapa Harihara, Krishnadevaraya, Sadasivaraya and Sri Rangaraya I.

Siva Parvathi Type

Siva Parvathi or Uma-Maheswara types of coins are generally represented Lord Siva and Parvathi. These types of coins were issued by Harihara II, Devaraya I, Devaraya II, Krishnadevaraya and Sadasivaraya. Lord Siva first appeared on the coins of Harihara II. Lord Siva as Virupaksha, the Lord with the terrible eye was the patron deity of all the Vijayanagar rulers. This type of coins was issued in three metals i.e., gold, silver and copper.

Gold Coins

These types of gold coins were issued by Harihara II, Devaraya I, Krishnadevaraya and Sadasivaraya. Harihara II, the Sangama ruler, issued Siva Parvathi type of gold coins with slight variations. On some of the gold coins, on the obverse side Siva is

shown seated in padmasana on lotus with goddess Parvathi on the left lap. Both of them are wearing kirita and other ornaments. Siva is shown with four arms. One of the left hands he holds the trident while the other hand is around his consort's waist, one of the right hands (upper right hand) he holds the *damaru* while the other lower right hand is in the abhaya mudra, the symbolic of promising prosperity and protection to all.

Head of Lord 'Siva's above the head are the Sun and Moon, probably the symbols of the desire that the empire should last till the sun and moon lasted. A slight variation is found on some other coins of Harihara II. In this case the right hand of the God holds *parasu* the battle axe in place of *Damaruka*. On a single coin of half Pagoda type issued by Harihara II at Kadapa taluk also figures Siva Parvathi symbol. Devaraya I was the next ruler who issued Siva Parvathi type of gold coins. Three hundred and eight gold coins issued by Devaraya I of Uma-Maheswara type are in the Hyderabad Museum.

On the obverse of the first type coins the god and goddess are shown seated in padmasana posture. Lord Siva is represented with four hands holding *Parasu* and *Damaruka* in two hands, keeping the rest of the hands in Abhaya mudra and in the embracing posture of the goddess. Both Siva and Parvathi are shown wearing kirita. In the second type Lord Siva and Parvathi are shown with archaic dress and ornaments. Siva is shown holding a *Parasu* in his right hand and a *Mrigain* in his left hand.

Krishnadevaraya of Tuluva dynasty issued Siva Parvati type of coins. His coins also are similar to the coins of the Harihara II, except Lord Siva and goddess Parvati are seated on raised pedestal. The goddess Parvati is shown with two hands normally kept in the act of affectionate gesture to Lord Siva. Both the god and goddess are well adorned with kirita and archaic dress and ornaments. Sadasivaraya was the next ruler who issued Siva Parvati type of coins. On the obverse of the coin is shown Lord Siva with his consort Parvati seated on a raised pedestal. Both the deities wear kirita and ornaments. Siva holds a *damaru* in his right hand.

Silver Coins

Silver coins were issued by Harihara II and Devaraya I. Harihara II coin, on the obverse side, shows Siva and Parvati seated. Goddess has folded her hands in *anjali* posture. Devaraya I was the next ruler who issued Siva Parvati coins. His coins are similar to those issued by Harihara II.

Copper Coins

These types of coins were issued by Devaraya II. On the obverse of the coin is depicted the figures of Siva and Parvati seated on a raised pedestal. Parvati has folded her hands in Anjali posture.

A careful study of the above coin types of Siva Parvathi enable to draw the following conclusion. The god and goddess are shown in a sitting posture. The goddess Parvati is seated on the left thigh of the Lord Siva. Both are well adorned with kirita. On all the issues the Lord Siva is represented with four hands; Trisula and Damaru are the attributes shown normally in the hands of the Siva. It is observed that one of the hands is invariably kept in abhaya mudra, while the other is in an act of embracing the goddess. The goddess is shown with two hands normally kept in the act of adoring her Lord. On the most of the coins the Sun and Moon are represented on either side of the head of the Lord. These coins exhibit considerable artistic skill in the representation of the deities. In modelling, in posture and in anatomic details they are pleasing and charming.

References

1. Himanshu Prabhu Ray, *Coins in India*, Marg Publications, Delhi, 2006.
2. Kosambi, D.D., *Indian Numismatics*, Orient Longman, Chennai, 1981.
3. Madhukar Keshava Dhvalikar, *The Beginning of Coinage in India*, Routledge, 1975.
4. Radha Shyam Chaurasia, *History of Ancient India Earliest Time to 1000 A.D*, Atlantic Publishers & Distributors (Pvt.) Limited, Delhi, 2002.
5. Sircar, D.C., *Coins Studies in India*, Motilal Banaridass, December, New Delhi, 2005.

BHARATANATYAM – A RHYTHMIC GESTURE

S. Pavithrameena and Ms. Rojapoo

PG and Research Department of History, St. Mary's College (Autonomous), Thoothukudi
Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu.

ABSTRACT

The fascination for Indian dance all over the world is indicative of the deep-felt needs to use the human body to express and celebrate the great universal truths. Since dance is physical and visual, it illuminates India's culture in a direct manner, playing on the sensibilities of the onlooker. Thus, those who are attracted to India will find the idiom of dance the best introduction to India's rich ethos and traditions. India offers a number of classical dances forms each of which can be traced to different parts of the country. Each form represents the culture and ethos of a particular region or a group of people. It is said that the gods created dance as a device for entertainment. Later, in order to please the gods, human beings enacted the tale and glory of the gods. Thus began a cycle of celebration manifested in the joyous abandon of movement and music. Over a period of two millennia, dance in India acquired set grammar, which led to a certain codification of technique. Dance is an instinctive art. Some compelling emotions within us that urges us to find expression in dance, that is, outward rhythmic movements which gradually seem to have come to assume certain forms.

Keywords: Indian dance, classical dance, culture, traditions, dance forms, rhythmic movements

Introduction

Bharatanatyam is the classical dance style of Tamil Nadu. The word conjures up images of a young, beautiful girl attired in resplendent silks and adorned with jewellery, dancing on a proscenium stage, to the accompaniment of a Carnatic music ensemble seated on one side. This in essence is Bharatanatyam, full of colour, spectacle, movement, rhythm, music and poetry.

Background

It is fascinating that this vibrant art traces its origins to the Natya Shastra said to be the world's oldest treatise on theatre. However, over the centuries, as the regional forms of dance evolved, the dance style of Tamil Nadu became a distinctly native form. The earliest reference to this form is in Silappadikaram, the Tamil epic (5th century A.D.), where Madhavi, one of the heroines was a ganika, a dancing girl.

Dance became the exclusive profession of women dedicated to the temples who were called Devaradiyars or Devadasis (Servants of the Gods). They were not allowed to marry and performed at the temple as part of the rituals. We infer that there were nearly 400 devadasis in the service of the temple of Brihadisvara at Tanjavur, built by Raja Raja Chola I (10th century A. D). There were also rajadasis and alankaradasis who were patronised by kings and chieftains. The nattuvanars were males who trained the devadasis and conducted the recitals, but were never performers themselves. This gave the dance form its name. 'Dasiattam', as the name suggests, was danced chiefly by women, for they were considered as harbingers of luck. As they were 'married' to God, they could never be widowed.

Invasion from the north and British rule affected the temples and the fortunes of the patrons and the devadasis fell on bad days. Along with them the art acquired a stigma. The final blow came when the Tamil Nadu government banned dance from the temples and the devadasis lost their vocation and sustenance.

Etymology

According to some scholars, the name derives from Bharata Natyashastra. Some ascribe it to Bha, Ra and Ta standing for Bhava, Ranga and Tala. This ancient dance has been nurtured in Tamil Nadu and most probably derived from the sadir-the solo dance performances by the devadasis the temple dancers. It was in the early twentieth century that E. Krishna Iyer, a freedom fighter and art connoisseur, took up the cause of Bharatanatyam. Fighting against prejudice and propaganda, he was quite successful in reviving interest in the dance form. Another name associated with the revitalisation of the form is that of Rukmini Devi Arundale who was, in fact, encouraged by the famous Anna Pavlova to learn dancing. Rukmini Devi did much to uplift, enrich and propagate the art through her school, Kalakshetra. The two famous styles of Bharatanatyam are the Pandanallur and the Tanjore styles.

Features

The dance form conceives the body in triangles. The shoulders to the waist form an

inverted triangle while the second triangle is conceived through the outstretched knees to the heels placed together. Even though the ‘samabhanga’ (linear position) is first employed, it quickly descends into the familiar ‘ardhamandali’ or the ‘araimandali’ (half-sitting position with outstretched knees) that imparts the imagery of triangles. The hand movements are linear in nature and the mood of the dancer is grave and serene.

While doing an ‘adavu’, the hands are stretched to the fullest. The ‘adavu’ is the basic unit of dance and is considered to be a derivative of the ‘karana’ described in the Natyashastra. There are about fifteen groups of ‘adavus’ with further sub-groups within them. A series of short brilliant ‘adavus’ form the ‘tirmanas’. The ‘tirmanas’ usually explore the range of ‘jatis’ which are complex rhythmical patterns.

In its rendering, the dancer follows one basic principle, namely, that every action that is done, say to the right, has to be mirrored on the left side too, for it is believed that the right side representing the masculine or the ‘tandava’ has to be balanced by the feminine or the ‘lasya’ assumed to be on the left side. This arises from the concept of ‘Ardhanareshwar’ wherein. Lord Shiva is represented on his left as a woman and on his right as a male, both indivisible parts of a whole. The adornment of the head by brooches with sun and moon shapes seems to have been influenced by the following Sanskrit verse.

angikambhuvanamyasyavacikamsarvavaangmayam

aharyamcandratara di ta numahasattvikamshivam

(We bow to the sattvika Shiva whose ‘angika’ (body) is the world, ‘vacika’ is the entire language and whose ‘aharya’ (adornment) are the moon, the stars, etc.)

Presentation

Bharatanatyam is believed to be the oldest, because it is the form which is based, to the largest extent, on ancient texts on the dance. Bharatanatyam, in its pure form, Nritya, interprets the language of rhythm and melody in diverse patterns of courses, angles and lateral motions of precise rhythmic movements of the hands, and the continuous footwork that is the basis of the dance. Rhythm and emotion are beautifully blended in Nritya the expository dance that conveys poetic meaning in gestures and facial expressions combined with rhythmic gaits and pastures. Nataraja, (king of dance) is the presiding deity of dance and his icon is placed on one corner of the stage during performances. A traditional recital features a string of items, long and short, emphasizing one or more aspects of the dance such as wriita (pure dance), abhinaya (expressive dance) or a combination of both. A layperson

can enjoy the music and the spectacle to a great extent. Like any classical art, it calls for a deeper knowledge of its idiom and intricacies for fuller appreciation.

The dance comprising movements of the body, hands, limbs together with facial expressions, and filled with flavour, which is perfect for dramatic interpretation. From this classic dance one gets a true picture of how the dance can be translated into the poetry of movement through the grace and talent of a beautiful woman.

Alarippu (Invocation)

The dance usually begins with the Alarippu, meaning opening of the bud into blossom. Alarippu literally is the Temple Flower used as an offering at the beginning of devotional worship. The Alarippu, which is the first stage of the dance, is not generally accompanied by music, but is danced to the accompaniment of the rhythmic syllables rectified by the singer.

Jatisvaram

Following the Alarippu comes the Jatisvaram. Jatis are time measures, and svaram is the musical notation. At this stage, the background music, the timing and dance movement become highly technical. Beautiful movements of the neck, arms, gestures, feet, and bodily postures are combined in a fascinating design.

Sabdam

Sabdam emphasises on interpretation. The stage of the dance usually commences with a few pure dance movements that are very lovely. The dance has ample scope used to show her art of interpretation by the use of gesture language and acting, her facial expressions, eloquent eye and eyebrows play, mobility of lips and the manner in which she moves on the stage. The dance performance has now reached the stage where the audience has been introduced to the three elements of the Bharatanatyam namely Mood, Raga and Song. Tala or Rhythmic Timing and Natya are the combination of both dancing and acting.

Varnam

Narppai, is one of the most beautiful and highly elaborate dance conceptions, incorporating technical brilliance, richness of melody and artful interpretation. It gives form and shape to the soul and true intentions of Bharatanatyam and is the most complete example of the art of Bharatanatyam.

Padam

These are finely chanted lyrical songs of mother's love or romantic theme, in Tamil,

Sanskrit, as immortalised in the classics, or telling of gods and goddesses in the mood of love.

Tillana

The final stage of the performance is Tillana or pure dance with statuesque postures, intricate rhythm and a complete unison between the technique and touches of emotional acting. It is a picture of all the feminine charm and the intricate patterns of the dance and footwork with swiftly moving arms, the tilt of the head and neck, the play of the eyes and eyebrows, coquetry and lifting grace.

Music and Costume

Musical accompaniment to the dance includes the ‘nattuvanan’ (the conductor reciting rhythmic patterns, often wielding a pair of cymbals that strike out beats, i.e., ‘talams’ and rhythmic patterns), percussionist on the ‘mridangam’ (horizontal drum), singer, flautist and violinist. Sometimes the ‘veena’ (a plucked string instrument) and the ‘ghatam’ (an earthenware pot) are also used to accompany the dance. The accompanying music follows the Carnatic style of rendering.

The costume is rich and is a modern stitched adaptation of the sari worn between the legs. The dancer is heavily bejewelled. On the head the dancer wears a head-set (thalai saman) that has a moon and the sun adorning the head on either side of the middle parting. A rakodi, namely a circular piece, is placed on the crown of the head. The hair is usually worn in a long braid decked with white jasmine flowers and orange kanakambharam and a ‘kunjalam’ at the end. ‘Mattal’ and ‘jhimki’ attached to the ‘thodu’ adorn the ears. Nose rings are optional. ‘Chokker’ or ‘muthumalai’, the neck- hugging necklace, are worn along with the long chain known as ‘kasumalai’. Armlets (‘vankis’) and bangles adorn the arms and wrists of the dancer. A golden metal belt ‘odyanam’ is worn around the waist and silver anklets known as ‘kolusu’ on the ankles. A belt of thirty to forty ankle bells is tied around each ankle.

Exponents of Bharatanatyam

Four individuals pioneered the cause namely Bala - Saraswathi, one of the last of the devadasis, was a legend in her own time as the queen of abhinaya. E. Krishna Iyer, a crusader for the cause of sadir, renamed it as Bharatanatyam, to give it a new respectability and persuaded the leading sabhas of Madras to feature dance. Rukmini Devi Arundale started Kalakshetra, the first institution to teach Bharatanatyam, as an academic discipline, and Kamala, the ten-year old prodigy performing Bharatanatyam on films, inspired every mother

to teach dance to her daughter.

Its foremost centre of training is Kalakshetra in Madras, while some other important institutions are Darpana, Ahmedabad, Rajarajeswari Kala Mandir, Bombay and Triveni Kala Sangam, Delhi. Some famous dancers of the recent past and the present are T. Balasaraswathi, Rukmini Devi, Yamini Krishnamurthy, Sonal Mansingh, Padma Subramaniam, Mrinalini Sarabhai. The modern form of Bharatanatyam presentation is the arrangement of four Nattuvans of Pandanallur. They were the brothers - Ponniah, Chinniah, Vadivelu and Sivanandam, who lived in the eighteenth century. The Vidwan, Menaskshi Sundaram Pillay of Pandanallur, the greatest teacher of Bharatanatyam is a direct descendant of the four brothers. Among the leading exponents of Bharatanatyam today are:

1. Balasaraswati
2. Yamini Krishnamurti
3. Shanta Rao
4. Indrani Rehman
5. Vyjayantimala
6. Kamla and Padma Subramany

Exploring Therapeutic Potential of Classical Dances

In Bharatanatyam dance form the dancers make considerable use of hand-and-eye movements to express different emotions. It is an amalgamation of emotion, music, rhythm and expression. Bharatanatyam is *mudra* oriented and gives importance to *padarthaabhinaya*, each word interpreted through mudras. In *Navarasa* parts (nine sentiments) the dancers express their inner feelings and it helps to release their emotions. This practice can be well used for emotional wellbeing and psycho-therapy. This dance form strengthens the hamstring muscles including semi-tendinosus, semi-membranous, biceps femoris, etc.

Conclusion

Today the art flourishes not only in Tamil Nadu, but has become a global phenomenon, with dances setting up schools all over the world and people of other nationalities flocking to India to learn the art in its home many talented dancers took up Bharatanatyam with professional zeal and carried its fame far and wide. Shante, Kamala, and Kausalya are three distinguished names in the Bharatanatyam style, representing the art in its superb form.



References

1. Ashok Narang, *Indian Society and Culture*, Murari Lal and Sons, New Delhi, 2006.
2. Chopra, P.N., *A Social Cultural and Economic History of India,(Vol.-I), Ancient India*, Madras,1974.
3. Kalpana Rajaram, *Facets of India Culture*, Spectrum Books, New Delhi.
4. Prema Kasturi, *South India Heritage An Introduction*, East West Book, Madras.
5. Ram Acharya, *Tourism and Cultural Heritage of India*, RBSA Publication.
6. Saskia, C., Kersenboom, *Nityasumangali, Devadasi Tradition in South India*, Motilal BanarsidassPublishers Pvt. Ltd, Delhi, 1987.
7. Shovana Narayan, *The Sterling Book of India Classical Dances*, New Dawn Press, India, 2005.
8. *The Hindu*, Chennai, 05.01.2023.
9. *The Times of India*, Chennai, 26.04.2023.

A DIASPORIC READING OF KIRAN DESAI'S *HE INHERITANCE OF LOSS*

A. Cathlen Britto

PG and Research Department of English, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu,
India

ABSTRACT

In the postmodern age, under the effect of rapid means of communication and transportation, migration occurs and it has given rise to mutations in diasporic self. Ultimately, diasporic conflicting identity is at stake and diaspora often become an irreversible historical entity that leads migrants towards home and homing desire. This paper explores the split identities of Indian- American diaspora in Desai's prestigious novel, *The Inheritance of Loss*. It also underpins how troubled relationship between the first and second generation of immigrants has impacted their dispersed identity.

Keywords: Diaspora, Diasporic self, Split identity, Home, Homing desire, Migration.

INTRODUCTION

Diaspora refers to the dispersion of migration of people or community from its place of origin to other places. Though the people do not show a compulsive desire to return home, they have a conscious or subconscious attachment to traditions, customs, values, religions and language of ancestral home. They are an imagined community. They live in an imaginative geography and history which lies at the centre of their cultural identity and give meaning to it.

Diasporic literature is mainly an output generated from a unique feeling emanating in the minds of people who go through an avalanche of anguishes and emotions while taking efforts to acclimatize to new cultural environment. Diasporic fiction in English in the post colonial period has not only been exciting and abundant, but also has undergone some fundamental transformation of theme and technique.

Indeed, the Indian writers of this period have internalized the qualities of versatility, variety and multiplicity of a globalized society.

This research article entitled “A Diasporic Reading of Kiran Desai’s *The Inheritance of Loss*” aims to present the livelihood struggles of migrants. It unearths the lives of immigrants in the foreign land bringing out their pungent diasporic experience with split identity and its fragmentations and their inevitable survival in the migrated locations. As an accomplished writer, Kiran Desai portrays the postcolonial situations both in India and America objectively and comprehensively. She handles the material with artistic perception and as one who is aware of various factors which affect the modern contemporary society. She seems to advocate a new world order which should be devoid of unnecessary tensions and conflicts.

Diasporic literature, to a great extent, explores not just the physical impact of the journey but it also delves into a higher level of metaphysical journey that transports into the inner consciousness or reality. Pramod K Nayar states: “A diaspora is a scattered population whose origin lies within a smaller geographic locale. Diaspora can also refer to the movement of the population from its original homeland. (189)”, therefore, diasporic communities are created out of the merging of narratives about journeys from the old country to the new one. People from the first generation of migrants tend to recall the old country more than the children born to the migrants. Through an intensive study of diasporic literature, one is able to rediscover the commonalities when looked at from a distance. It works as a channel to strengthen the ties by serving as an outlet to the pent up emotions and feelings. Diasporic writers have tried to re-invent their birth place by casting the rhythms of ancient legends and exposing the cadences of mythology along with cultural assimilation and nostalgia.

Kiran Desai born on September 3, 1971 at New Delhi, India is an Indian-born American author. She is the daughter of the renowned novelist Anita Desai. She lived in India until age fifteen, after which her family moved to England and then to the United States. She graduated from Bennington College in 1993 and later received two M. F. A., one from Hollins University, in Roanoke, Virginia, and the other from Columbia University, in New York City. Desai left Columbia for several years to write her first novel, *Hullabaloo in the Guava Orchard* published in 1998 is about a young

man in provincial India who abandons an easy post office job and begins living in a guava tree, where he makes oracular pronouncements to locals. Unaware that he knows of their lives from having read their mail, they hail him as a prophet. *Hullabaloo in the Guava Orchard* drew wide critical praise and received the Betty Trask Prize from the British Society of Authors.

While working on what would become her second novel, Desai lived a peripatetic life that took her from New York to Mexico and India. After more than seven years of work, she published *The Inheritance of Loss* in 2006. Set in India in the mid-1980s, the novel has at its centre a Cambridge-educated Indian judge living out his retirement in Kalimpong, near the Himalayas, with his granddaughter until their lives are disrupted by Nepalese insurgents. The novel also interweaves the story of the judge's cook's son as he struggles to survive as an illegal immigrant in the United States. *The Inheritance of Loss* was hailed by critics as a keen, richly descriptive analysis of globalization, terrorism, and immigration. When she received the Booker Prize for the novel in 2007, Desai became the youngest female writer to win the award.

The Inheritance of Loss can be viewed as a diasporic novel. The theme of diaspora in the world of literature describes loss of identity and isolation witnessed by the Indian writers who are settled abroad. The Diasporic style used in this novel is an exemplary notification to her, among the Indian novelists. The location of the novel is well known to the author as her roots are in Kalimpong where she had spent her childhood. She attended a school in Kalimpong which is delineated through the character Sai in the novel.

Desai with her own immigrant experience portrays the helpless Indians who wish to have the great America dream come true, but not all Indians succeed. Like the character Biju from the novel, many end up as wrecks and they are pushed down in the ladder of life. Finally they accept their fate and decide to pull on with no bright future and property. The major part of the plot therefore unfolds around the development of these characters. In many retrospectives and flashbacks about judge's unhappy experiences with western society, one could find negativity overshadowing the lives of the immigrants. The life of Sai is in search of her identity between western upbringing and life in eastern society. Biju realizes his identity

when confronted with unfamiliar western society in New York. The lives of other characters are interconnected with the history of the region. The sisters Lola and Noni lose their privileged status. Father Booty is forced out of the country due to his expired visas.

Desai uses many details from her childhood to capture the life of the area. She admits that the “Gobbo”, the town thief, the two cobras living in Jhora Ravine, a Swiss priest who ran a cheese making enterprise are all true characters that she remembers from her childhood. This is where the real life memory ends. Desai’s aim was to show the impact of what happens when a western element is introduced into a country that is not of the west as it happened in the colonial period and the result is well seen in many of her characters.

Kiran Desai wanted to communicate to the world what it means to be an immigrant as well as what happens when you take people from a poor country and place them in the wealthy one. These events occurred not only in her book, but also in Desai’s own life. Desai left Kalimpong at the age of thirteen when the Nepali unrests started and moved with her mother to Delhi. They moved to London when she was fourteen and a year later to the U.S. where she currently lives.

Desai explores a parallel between the immigration of Indians to the U.S. and the Nepali workers who immigrated to India as a cheap labour during the colonial period. In both cases, she believes that both these groups have to deal with the questions of rights and identity. The theme of the connection between place, language and culture as the idea of relationship between one’s identity and place often appears in *The Inheritance of Loss*. Nigamananda Das in the book *Dynamics of Culture and Diaspora in Jhumpa Lahiri* states: “The search for home amidst cultural displacement also implies that there would always be an attempt on the Diasporas’ part to consciously or unknowingly re-create a semblance of the home which they left behind (37)”. This recreation would involve the conscious abrogation of the influence of the dominant culture.

Desai’s belief in these theories stems from her personal experience and is mirrored in her writing where she successfully shows the feeling of a person in a foreign country.

The Inheritance of Loss focuses not only on an individual’s story but also on

how several people make sense of themselves, view the world around them and deal with difficulties that they have with contradictions. Desai uses the term contradiction frequently in the novel and it helps one understand how she presents the conflicts of identity faced by her characters. As Salman Rushdie states in an interview: “Literature is where I go to explore the highest and lowest levels of human existence, in the human spirit, where I hope to find out absolute truth but the truth of the tale, of the imagination, and of the heart”, one could rightly understand the intricacies of the human existence through Desai’s novel.

Desai draws her characters from people belonging to all cultures and they make huge sacrifices for their children, behave cruelly towards people they love, reject traditional ways of life and old values, rediscover what is important to them, suffer at the hands of faceless government officials, and learn and grow, and make decisions, sometimes ill-considered about their lives. Dealing with all levels of society and different cultures, Desai shows life’s humour and brutality, its whimsy, its harshness and its delicate emotions and passionate commitments in a novel that is both beautiful and wise. The book’s language, scenarios and juxtapositions are funny, threatening, vivid and tender all the same time. The comic element always intertwined with irony as characters struggle with a world bigger than themselves, a world that only ever seems to accept them partially, and rarely on their own terms.

Kiran Desai usage of dark and pessimistic way of writing in her novel, though rich details and presenting a picturesque mosaic of life, at times makes her fall a prey to pain and loss. The darkness and the inner conflicts sometimes weigh too much upon the mind and soul. But that’s what a good writer should be capable of and Kiran Desai has been successful in touching and describing the depths of human emotion and thought. The picture drawn of India is intricate and fascinating. The characters are complex and the writing is flawless. However, the whole picture painted in the narrative leaves no room for hope, no room for joy, no room for even a tiny bit of beauty.

The Inheritance of Loss is an inward-looking novel, with a lot of internal monologues and passages of description than exchange of dialogue, which, despite the rough patches, plays to Desai’s strengths. As in much immigrant writing, Kiran Desai is an outsider to all the worlds that form a part of landscape. She is merely the

observer passing through. But, her knowledge of alienation makes the protagonists' search for a sense of belonging, more real. *The Inheritance of Loss* depicts in its many details the tragedies of a third world country just free from colonialism.

The main theme of the novel also appears to be the influence of the West on India and how Indians are wounded by the policies of the West. Watson says: ““multiculturalism” compels us to think through the social and collective dimensions of diversity (107)” but, failure to assimilate into the concept of multiculturalism has oppressed the migrants from India and has resulted in making them question their identity in the foreign land. Against the gigantic backdrop of the Himalayas so savage with beauty and the stillness of its towering ranges, Desai depicts the boring and mundane life of her characters with tumultuous inner sides and shades. The novel gives us delectable details of the beauties of the natural world. The sound of the wind, the pattering of the rain, the gurgling of the pipes, the creaking and clattering of the old Cho Oyu mansion, the happy snoring of the faithful dog Mutt, sometimes, makes reading so refreshing that one can breathe the crisp Himalayan air and feel surrounded by the looming dark forest.

Kiran Desai's *The Inheritance of Loss* presents several interrelated stories exploring Indian characters' relationship with the West. The Nepalis struggle to get their own rights and land slowly creeps into the lives of the characters, the cook, the judge, Sai, Lola, Noni, and gnaws and questions their very being. Likewise, Patrick Williams in the book *Contemporary Critical Theories* states, “Said is at pains to demonstrate two important things in relation to Western representation of the Orient (272)”. The novel takes place in postcolonial India, an India still tied to the western world. *The Inheritance of Loss* focuses on two Indian character's in 1986: Bijju, an illegal immigrant in America, and Sai, a formally educated teenage girl in India. Then, the movement does not even spare Bijju, the cook's son in America, who comes back only to be robbed of all his money and belongings. Yet, the reader finds a quaint satisfaction in the union of father and son in the backdrop of a disturbed land in Kalimpong.

Though Desai presents the problems of the socially oppressed sect of the Gorkhas with genuine compassion, she does not fail to admonish severely political violence and loss of human lives. While portraying characters like the cook and the

wandering beggars she reveals her profound concern for the poor and the downtrodden. She competently explores these crises and the disorientation in the formation of cultural, national and linguistic identity. Both western and eastern immigrants go through the constant psychological endeavour to construct a new identity in dislocated place whether in America or in India. They are always in a quest to overcome the vacuum resulted from diasporic dislocation. This struggle has also been brought to the limelight in the novel, *The Inheritance of Loss*, through the characters in exile.

Desai wants to say that, life, in spite of all its sufferings and problems, is worth living and one should always learn from mistakes. One is often attracted by the material prosperity and comforts that the west seems to offer. But, in spite of the backwardness, poverty, and illiteracy in one's own land, one can probably derive a sense of belonging and identity in one's own land only. Uprooting from one's own land and re-rooting in an alien land is a painful process and Desai had successfully delineated the dilemmas faced by her characters in their longing to find a green pasture in a foreign land.

Desai finds an opportunity to go through the concepts of globalization, multiculturalism, modernization, terrorism, and insurgency. She proves that whatever one goes, he carries the value of his/her culture and tradition. *The Inheritance of Loss* is set partly in India and partly in the USA. The regional settings in the novel are much relevant if we judge it from the cultural perspective. Desai describes it as a book that tries to capture what it means to live between East and West and what it means to be an immigrant.

Conclusion

It is observed that the novel *The Inheritance of Loss* is a literary masterpiece with a perfect blend of Indian culture and values. Almost all the characters Sai, Gyan, the retired judge, the cook, the tutor, and the cook's son living in abroad all get the compassionate feelings of the author. Desai contributes to debates about the American dream, globalization and identity in *The Inheritance of Loss* by advocating neither the preservation of cultural distinctiveness nor assimilation, but rather ambivalence and flexibility. She shows that the real issue facing post-colonial and immigrant people are not whether they should assimilate but how clinging to cultural

certitude leads to disaster. *The Inheritance of Loss* deals with three worlds Europe, India and America- simultaneously at the same time. Of these three worlds, Desai finds an opportunity to go through the concepts of globalization, multiculturalism, modernization, terrorism and insurgency. Kiran Desai had proved that wherever one goes, he carries the value of his/her culture and tradition. Desai describes it as a book that tries to capture what it means to live between East and West and what it means to be an immigrant. The narrative captures the political milieu in which identities are negotiated through a continual collision of institutionalized national narrative with minority narratives as its discontents.

References

1. Desai, Kiran. *The Inheritance of Loss*. Grove Press, 2006.
2. Nayar, Pramod K. *Postcolonial Literature: An Introduction*. India Binding House, 2008.
3. Das, Nigamananda. *Dynamics of Culture and Diaspora in Jhumpa Lahiri*. Adhyayan Publishers and Distributors, 2012.
4. Rushdie, Salman. “Salman Rushdie on Language, Literature, Freedom of Expression, and More”, <https://bigother.com/2020/06/19/salman-rushdie-on-language-literaturefreedom-of-expression-and-more/>
5. Watson, C. W. *Multiculturalism*. Rawat Publications, 2019,
6. Williams, Patrick. *Contemporary Critical Theories*. Edinburg University Press, 1993.



ARUNDHATI ROY'S *THE GOD OF SMALL THINGS*: A FEMINIST READING

M. Antony Abisha

PG and Research Department of English, St. Mary's College (Autonomous),

Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT

Arundhati Roy is one of the greatest Indian novelists. She was awarded the Booker prize in 1997 for her novel *The God of Small Things*. A feminist reading of Arundhati Roy's *The God of Small Things* is essentially by a woman about women, and it has been seen through the eyes of a woman. It is a women-centered novel in the sensibility of pity and fear. The research paper entitled **Arundhati Roy's *The God of Small Things*: A Feminist Reading** analyses the women as subjects who are oppressed physically, socially, culturally and economically and explores the voice of marginalized people in the Indian society.

Keywords: Feminism, Gender, Oppression, Revolution, Patriarchy, Domination.

Arundhati Roy is one of the best-known representatives of the contemporary generation of Indian writers who wrote in English. She was born in Shillong, Meghalaya, India. Roy obtained a position with the National Institute of Urban Affairs. She became financially secure with the success of her novel *The God of Small Things*, published in 1997. Roy began writing her first novel, *The God of Small Things*, in 1992, completing it in 1996. The book is semi-autobiographical, and a major part captures her childhood experiences in Ayemenem.

The publication of *The God of Small Things* catapulted Roy to international fame. It received the 1997 Booker Prize for fiction and was listed as one of *The New York Times* notable books of the year. It reached fourth position on *The New York Times*

Bestsellers list for independent fiction. From the beginning, the book was also a commercial success. Roy received half a million pounds as an advance. Roy won the National Film Award for the Best Screenplay in 1989, for *In Which Annie Gives It Those Ones*, in which she captured the anguish among the eight students prevailing in professional institutions. In 2015, she returned the national award in protest religious intolerance and the growing violence by right wing groups in India.

The God of Small Things, a novel by Arundhati Roy represents an encounter between tradition and modernity and its consequences. Roy presents this interface as a problem to raise the voice of protest agonies and sufferings of the suppressed class people. Roy has spoken on behalf of the suffering subjects of India as their representative, and opposed tradition generating customs, culture, religion, systems and practices. In the novel, the conflict exists at individual as well as societal levels. The novel graphically shows how people are helpless to resolve these levels of frictions.

Roy suggests that the traditional social structure of India based on the caste system plays a role of an antagonist to destroy the lives of the marginalized and innocent human beings. This can be understood implicitly and explicitly by means of her presentation of a situation, in which a higher-caste woman Ammu and a lower caste man Velutha have fallen in love. This is the breaking of the social taboos. It is against the narrow orthodoxy of the caste system of India that prohibits the higher caste people to have relation with the lower caste people.

The study proposes to investigate how *The God of Small Things* creates a world and succeeds in articulating social oppression. Arundhati Roy's fresh perspective on age old traditions created waves as rebellion against the social injustice meted out to the downtrodden and to the women. *The God of Small Things* is read as a book, a book which becomes the voice of all those who are relegated to the margins of the society.

The significance of the study lies in the fact that Roy has strength and a passionate sense of justice. Roy's works catch out attention on social issues and injustice. If Roy holds anything specifically, it is social vision, a vision which has a little room for the suppression and exploitation of the individual by society, of woman by man, of

untouchables by touchable, of children by elders and political pawns by political parties. She was wholly committed to the voiceless millions of her country and became their voice at a huge risk to herself.

The world that is caught in the patriarchal society. the experience of women who undergo different types of suppression in the hands of patriarchy. Arundhati has taken up the issue of feminism to fight for their identity and economic and social freedom. Her female characters in the novel *The God of Small Things* stands out as persons and not as role-players.

Roy's *The God of Small Things* is feminine creation of unique nature. The novel clearly shows the untold miseries and the undeserved sufferings of women who must bear the brunt of male domination silently and meekly. She transcends the ordinary concept of feminism. The novel examines the feminist jealousy between the woman and woman, the plight of woman in male dominated framework. Roy shows how a woman in patriarchal set up yearns for pleasure and happiness and a life far from the shackles and constraints. She is like a free bird that wants to fly freely in the open skies. But suddenly, her wings are cut down by the callous society and thus she is pulled down to this earth where she must 'grovel in the lowly dust'. Despite the significant change in women's position in society in the post-Independence era, she is still not totally emancipated. These contradictions can best be understood by examining the Indian social structure which comprises institutions like caste, joint family and religious values and practices consolidating women's subordinate position. In this respect Maitreyi Mukhopadhyay says:

It should be emphasized that the poor status of women, their oppression and exploitation, cannot be examined as an isolated problem in Indian society. Although the status of women constitutes a problem in most societies in the rigidly hierarchical and inequitable social structure which exists in India, the relative Inferiority and superiority of various roles is much more clearly defined. The inequality and subordination of women is as instrument or function of the social structure. (82)

Arundhati Roy in her novel *The God of Small Things*, effortlessly dealt psychological trauma and scandal. The entire story revolves around the central figure of the novel Ammu. Roy made Ammu the pivot of the entire plot as the social insecurity combined with her unfulfilled social desires. The epiphany of her fraudulent affair brings a disastrous effect. She is tagged with the phrase prostitution by the police. She is thrown from home as she was responsible for Sophie's death. The psychological traumas have no end and poor Ammu's end also came. The fatal trauma continues in her funeral too. She was denied by the church for burial.

The psychological trauma and scandal infected Ammu's children also. They undergo similar hardships in life. Estha and Rahel suffer certain traumatic experience. In early life itself they evidence the breakup of their parents. They both brought up in a state of separation. In *Trauma and Recovery*, Judith Lewis Herman offers a basic classification system for the symptoms of trauma, or Post-Traumatic Stress Disorder. She attributes the range of symptoms to 'three main categories hyper arousal, intrusion and constriction' (35). Roy made evident the miseries of Estha in *The God of Small Things* through the molestation of the Orange drink Lemon drink man at Abhilash Talkies.

The twins world has certainly shaken by the arrival of their beautiful young cousin, Sophie. It has led them to have an illicit liaison. Roy intensifies the forces such as Cast- division, religious diversity, class, patriarchal family hierarchy, colonialism, communism, global travel and commerce by contrasting the small things with the big things of the novel. The intention of exploring one's life is to highlight how the inner mind of the individual plays a major role in one's life, which is controlled by certain external forces. The focus of the chapter Broken Bond is about how Trauma and Ethical Dilemma affect their mind and behaviour.

Even though Ammu pays for her relationship at the end, Velutha is far more vulnerable and exposed. This social distance between the communities, a difference in class and position in society proves to be fatal to Velutha. All these extracts substantiate that importance is given to the external identity but none to see beyond it. The killing of feelings, emotions, wishes and mind is crueller than the estranger. Henry David Thoreau

in his work *Civil Disobedience* talks very plainly about the imprisonment of the physical body while the mind goes around freely. Here he says about the nature of man comparing with plant as, “If a plant cannot live according to its nature, it dies; and so, a man” (*Civil Disobedience* 128). It is not about physical death but the feelings. Every species has the right to live and live respectively.

Though the psychological trauma and scandal hits Ammu to its fuller effort she never gives up her courage and desires to attain the place she wishes for. She admires through her struggle to rise each time when she falls. She exhibits herself to be strong and stronger. Roy dooms ‘Subaltern consciousness’ as utterly hopeless. The real subaltern cannot rise in social hierarchy. Roy exemplifies the urge of subalternity in the form of ‘not speaking’. Roy makes the ‘not speakingness’ to speak through the paralysed brother of Velutha. Kuttappen who cries and screams in the novel. These are the symbols of agony which affects psychology.

The truthful picture of the plight of Indian women, their great suffering, anxieties, their humble submission, persecution and undeserved humiliation in a male dominated society. It shows women’s marathon struggle for seeking the sense of ‘identity’ in a totally averse and envious society. The social structure of an average Indian woman is full of ups and downs. It can be very clearly seen in some of the women characters like Ammu, Mammachi, Baby kochamma, Rahel and Margaret Kochamma. *The God of Small Things* is a feminist text foregrounding many invisible barriers which patriarchy has continued to raise in women’s way to gain parity with men. One of the key issues which very often figures in contemporary feminist discourse is the patriarchal powers within the household, the society and the economy.

Mammachi shows indifferent attitude towards Margaret kochamma. She was jealous of the women whom her son had loved and married. Although Mammachi has never met Margaret even for once looks down upon her. She is unkind towards the workers of the factory Paradise Pickles & Preservers. But she is meek with Chacko. Mammachi is not crafty as baby kochamma, but her mind is hardly less pervert than that of Baby Kochamma. She subscribes to the logic and ethics of the male chauvinism in

Toto. Her conservative idea turns her inhuman, nasty and brutish. In the novel, the characters Mammachi and Baby Kochamma suffer due to the institution of relationship. Their pathetic state guides their apathy towards Rahel. In this regard, Debjani Gangulay rightly comments:

Mammachi's own marital experience has not enabled her so empathize with her daughter's brutalized married life. Rather, she sees Ammu's failed marriage as just retribution for her daughter who dared to marry outside her community. Her firm emotional investment in the hierarchies of class, caste and gender is illustrated at several points in the novel. Like a young bride who couldn't believe her good fortune. (22)

Roy employs various literary devices, to intensify the trauma faced by the marginalized people of India. Hence, Roy's mastery over the art of writing contributes to the effective deliverance of the major theme of the novel, thereby proving herself as a novelist with a purpose, painfully concerned with the upliftment of the downtrodden.

Roy's *The God of Small Things* explores that every woman suffers in her own unique manner. The novel deals with the eternal sufferings, misery, and physical and sexual violence of women in a male-dominated society. It portrays how women suffer mentally, physically and sexually through male chauvinism. It also depicts a futile struggle of women for their fulfilment and their appalling conditions in a conventional patriarchal society. The author's feminist rage exposes how women become victim of violence, exploitation, estrangement, and isolation as well as how well-oiled exploitative machinery of patriarchal society put Ammu to death.

The major thematic concerns of Roy's *The God of Small Things*, apart from depiction of family life are Ammu's criticism of tradition, society and marginality (both untouchability and woman's suppression). This novel speaks of politics and criticizes the communist government in Kerala. It speaks of marginality of caste and sex, and incest and the obscene and provides diasporic experience: dislocation and identity crisis. It is a technical tour de force and known for feminist English and linguistic inventiveness. Roy presents several different female characters in her novel.

The God of Small Things a representation of the subaltern women by Roy has been made more varied, merely by presenting the various portraits of women who, despite their oppression and marginalization, are not without responsibility. Ammu represents people who dare to do the “unthinkable,” to transgress the very line that upholds the system of difference that casteism inherently maintains. She represents all those who have suffered due to transgressions against the “Love Laws” and gender-specific expectations imposed upon them. Ammu and Velutha are representatives of thousands of cross-caste relationships in the real India, a voice that resonates all over the world.

Thus, *The God of Small Things* is feminine creation of unique nature. The novel clearly shows the untold miseries and the undeserved sufferings of women who must bear the brunt of male domination silently and meekly. The novel *The God of Small Things* often associated with several categoric literary fiction, including feminist perception, postcolonialism, politics, literary tourism and Indian culture, is a complete reflection of the life and sufferings of women that voices out the trauma of marginalized people in the Indian society. It transcends the ordinary concept of feminism.

In a feminist reading of *The God of Small Things* by Arundhati Roy, often emphasizes the novel’s exploration of gender roles, power dynamics, and societal constraints. It highlights how characters like Ammu and Baby Kochamma navigate oppressive structures and rebel against traditional expectations. Additionally, the conclusion may discuss the novel's critique of patriarchy and its portrayal of women's struggles for autonomy and agency in a male-dominated society. Ultimately, it underscores the importance of challenging societal norms and advocating for gender equality. Thus, the novel is remarkable for the elements of feminist studies. It shows different kinds of discriminations one based on gender and sex. It provides multifaceted issues of suppression, oppression and tormenting activity against women in male dominated societies. Different kinds of structural and cultural points can be noted which make the research complete in the sense of feminism.

Works cited



Ganguly, Debjani. *Caste, Colonialism and Counter Modernity*. Routledge, 2005.

Herman, Judith Lewis. *Trauma and Recovery*. New York Basic Books, 1999.

Mukhopadhyay. *Indian women: Change and Challenge in the International Decade*. Edited by Neera Desai and Vibhutti Patel. Popular Prakashan, 1985.

Roy, Arundhati. *The God of Small Things*. Penguin Books India, 2002.

Thoreau, Henry David. *Civil Disobedience Anthology of American Literature of the Nineteenth Century*. Eurasia Publishing House, 1983.

VICTIMS OF MIND CONTROL IN DENNIS LEHANE'S *SHUTTER ISLAND*
B. Antony Steniba

PG and Research Department of English, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT

The research in hand sets out to analyse, illustrate and exemplify the mental distortions, trauma, and the traumatic events through which not only the plot of *Shutter Island* was constituted, but also the identity of characters, as they will be duly psychoanalyzed through the course of this paper, was stoutly solidified through their impact. Throughout the novel, Lehane explores the devastating effects of trauma on the human psyche. He portrays how past traumas can haunt an individual, affecting their perception of reality, their relationships, and their ability to cope with everyday life. Teddy's journey on *Shutter Island* serves as a metaphor for the journey through trauma – a maze of confusion, fear, and painful memories that one must navigate in order to find healing and understanding. Lehane's masterful storytelling and intricate character development make *Shutter Island* a compelling exploration of trauma. Through Teddy's experiences, the novel sheds light on the complexities of trauma, showing how it can shape a person's life and alter their perception of the world around them.

Keywords: trauma, human psyche, distortions, psychoanalysis.

American literature is the body of written works published by the writers of United States. Like other national literatures, American literature was shaped by the history of the country that produced it. American literature begins with the colonization of England in America. The first English colonies in America were Virginia and New England. The literary wealth of the American country was bought by these colonists with them. Most of these Americans were the English migrants who began writing in the sixteenth century.

The flowering of American literature occurred during the mid-nineteenth century. The period 1850-55 marked the American Renaissance. American literature flourished in

the New England region. The late nineteenth century was considered as the transition period to Modern age. During this late nineteenth century that is 1860s, people had a harsh experience with the Civil War. This war influenced the works written by the authors of the nineteenth century. Political corruption, violent conflicts and loss of religious certitude gave path to tragic novels of the twentieth century.

The 1950s and 60s brought significant cultural shifts within the United States driven by the civil rights movements. Prior to the last decades of the twentieth century, American literature was largely the story of dead white men who had created art and of living white men doing the same by the turn of the 21st century. American literature had become a much more complex and inclusive story grounded on a wide-ranging body of past writings produced in the United States of different background and open to more Americans in the present day. Some of the prominent writers were Vladimir Nabokov, Bernard Malamud, Saul Bellow, Lorraine Hansberry, Toni Morrison, Philip Roth, Sylvia Plath and Cynthia Buchanan.

Dennis Lehane was best known for his mystery and crime fiction. Dennis Lehane was born on August 4, 1965, in Dorchester, Massachusetts. Since his first novel, *A Drink Before the War*, won the Shamus Award, he has published thirteen more novels that have been translated into more than 30 languages and become international bestsellers: *Darkness*, *Take My Hand*; *Sacred*; *Gone, Baby, Gone*; *Prayers for Rain*; *Mystic River*; *Shutter Island*; *The Given Day*; *Moonlight Mile*; *Live by Night*; *World Gone By*; *Since We Fell*, and *Small Mercies*.

The novel chosen for present study is Dennis Lehane's *Shutter Island*, published by Harper Collins in April 15, 2003. Lehane has said he sought to write a novel that would be an homage to Gothic settings, B movies, and pulp. Lehane was inspired by the hospital and grounds on Long Island in Boston Harbor for the model of the hospital and island. The novel *Shutter Island* was adapted into a film by Martin Scorsese in 2010. Lehane is one of the greatest contemporary American writers; nothing compares to his character intricacy and depth.

Dennis Lehane's writing style is never over-embellished. Lehane describes his setting just enough to paint a picture of area suitable for his characters. The sparse,

simple style fits well with the realistic tone and the bleakness of the characters' situations. Typical to Lehane's writing style, the characters are not weighed down by lengthy description of their appearances or clothing. There is no flowery prose about their looks or attire; instead, Lehane allows their tense and genuine dialogue and their actions to shape their characters. Lehane uses subtle moments and realistic dialogue to show the characters' goals and desires.

Shutter Island is an immersive psychological novel that delves into the depths of the human mind. Through its gripping storyline and skilful narrative, it challenges the reader's perception of reality, blurring the lines between truth and illusion. *Shutter Island* is an accurate depiction of the changing methodology in clinical psychology and worthy of praise in that area. But to those unfamiliar with the history and progression of psychological treatment, the way the novel portrays psychology in the 1950s concerns about how one understood the abnormality of mental illness, they no longer reflect the treatment realities of the modern field of psychology, which strives to rehabilitate individuals without violating their rights as human beings.

Dennis Lehane's *Shutter Island* is a haunting exploration of trauma, set against the backdrop of a sinister mental institution. Through the experiences of U.S. Marshal Teddy Daniels, the novel delves into the depths of psychological distress, unravelling the intricate layers of trauma that define his existence. As Teddy navigates the enigmatic corridors of Shutter Island, he is forced to confront the demons of his past, ultimately leading to a profound reckoning with his own fractured psyche.

Lehane masterfully portrays the fragmentation of the self in the aftermath of trauma, exploring how it shatters the very foundations of identity. As Teddy delves deeper into the mysteries of Shutter Island, he is confronted with a series of harrowing revelations that challenge his perception of reality. The novel blurs the lines between truth and illusion, leaving Teddy questioning his own sanity and struggling to discern the remnants of his true self amidst the chaos.

In *Shutter Island*, Andrew's wife, Dolores experience multiple traumas. In state Andrew is filled with nothing but regret, guilt and remorse for having lost Dolores for all he knew due to his psychosis, and Andrew Laeddis had committed that unforgivable

crime and was awaiting retribution. If not for the delusions, Teddy would remain only a bare and monotonous line of two deductive with resolute efforts in untangling the elusive escape of Rachel Solando, a notorious multiple murderess who drowned her three children in cold blood from a locked high security room in the Ashcliffe hospital. As a fact, the entire narrative is an instrumental means of approaching the psyche of Andrew as to share with him the grave severity of his illness, the regressions he had prior to then, the violence he was using to hurt other patients and guards. The delusion he had solemnly webbed around his unredeemable soul as a culminating goal to unveil and expose the private portions of his dying soul to him.

Andrew's first internal conflicts appear when he talks with Chuck in the ferry. Chuck asks about his wife, Dolores, and it made him remember her suddenly. Andrew sees his wife in the mind, picturises her in the brain and sees her face again. Actually, he prefers not to discuss about his wife at all because his mental vision of his wife leaves him with nothing but only pain.

Teddy saw her again, her back to him as she walked down the apartment hallway, wearing one of his old uniform shirts, humming as she turned into the kitchen, and a familiar weariness invaded his bones. He would prefer just to do about anything swim in that water even- rather than speak of Dolores, of the facts of her being on this earth for thirty-one years and then seizing to be. Just like that. (35)

Andrew is described as person suffering with trauma. It is shown in his specific descriptions. One of them is frequent nightmares. His nightmare about his hometown, the man who killed Dolores named Andrew Laeddis, his partner Chuck Aule, Dr. Cawley, the missing patient named Rachel Solando and her three children all became the worst nightmares. In this dream he is shown how sadistic Rachel Solando who killed her three own children, two boys and one little girl.

They were the worst dreams he'd ever had. They began with Teddy walking through the streets of Hull, streets he had walked countless times from childhood to manhood. He passed his old schoolhouse. He passed the small variety store where he'd bought

gum and cream sodas. He passed the Dickerson, the Boyds, the Vernons, the Constantines. But no one was home. No one was anywhere. It was empty, the entire town.

And deep quiet. He couldn't. . . her mouth still smeared with peanut butter and jelly. (209- 16)

The intrinsic elements described the specific descriptions and conflicts experienced by the main character, and settings which pictured in the novel *Shutter Island*. Moreover, the extrinsic elements describe the cause and effect of trauma which the main character undergo. The effect of Andrew's trauma is his action of making a fictitious, dense narrative. This was becoming his denial response of the truth. All the staff of the Ashcliffe are given a role play to help him stage the story. First, he is staged as a U.S. Marshal named 'Teddy Daniels' alongside with his partner named 'Chuck Aule' who takes a case about the missing patient named 'Rachel Solando' in Shutter Island. In fact, 'Chuck Aule' is his primary psychiatrist in Ashcliffe named Dr. Lester Sheehan.

'Who are you?' he said.

Chuck stretched a hand across the table. 'Dr. Lester Sheehan,' he said. Teddy left the hand hanging in the air and Sheehan eventually withdrew it.

'So,' Teddy said and sucked wet air through his nostrils, 'you let me go on about how we needed to find Sheehan when you...you were Sheehan.'

Sheehan nodded . . .

'I had to keep an eye on you, make sure you were safe.'

'Safe,' Teddy said. 'So that made everything okay. Moral.'

Sheehan dropped his tie. 'We've known each other for two years, Andrew.' 'That's not my name.'

'Two years. I've been your primary psychiatrist. Two years. Look at me. Don't you even recognise me?' (382- 83)

At the end of the story, the above-mentioned incidents, to a certain degree, manage to take place all throughout the plot. In short, the plot is a mysterious juxtaposition of Andrew's mentality and the role play of the psychiatrists. In other terms, what should not happen, happens to give rise to a baffling plot, the fiction and reality of which can barely be told from each other, thereby finding a symbiosis of an equal weight. The equilibrium of the plot shatters easily either side or discord with the other. However, the entire novel, irrespective of its reliable or otherwise unreliable nature employs Andrew's traumas as the hinge upon which it revolves. Traumas of Andrew's albeit offer reliable nature, ironically, gives rise to a mentality which suggests otherwise, the urge to dissect them.

Another theme that is revisited many times throughout the novel is conspiracy theories. George Noyes, a prisoner, talks about illicit experiments and abusive treatment of patients at Shutter Island, when Teddy came into the institution. It is apparent that it would be very easy for the authorities to cover up any illicit activity by claiming that the accuser was delusional or paranoid. The novel takes place in a time of acute paranoia: worry about a Japanese "Fifth Column" within the United States, about Communist infiltrators, Nazi scientists working under assumed identities in the United States, and CIA experimentation. By filling his novel with conspiracy theories that did, in fact, turn out to be true, Lehane intensifies the suspicious atmosphere on Shutter Island.

I assume everyone knows why we're all here." Teddy said, "You had an escape last night. Far as we can tell, the patient vanished. We have no evidence that would allow us to believe the patient left this institution without help. Deputy Warden McPherson, would you agree? (77)

The novel's exploration of loss of identity serves to highlight the fragile nature of the human psyche and the ways in which trauma can distort one's sense of self.

Throughout the story, Teddy grapples with his own identity and past traumas, including the death of his wife in a fire set by Andrew Laeddis, a patient at Ashecliffe Hospital

who Teddy believes to be responsible for his wife's death. As Teddy delves deeper into the mystery of the missing patient, he begins to question his own sanity and memories. He experiences hallucinations and flashbacks, which blur the lines between reality and delusion. These hallucinations often manifest as visions of his deceased wife, further complicating his sense of self.

Teddy looked at Cawley, this too-thin man with great pools of shadow under his eyes. This man who'd come to save him. This man who might be the only true friend he'd ever had.

He saw the sound of his gun in her eyes and he felt his sons' wet wrists as he'd placed them on their chests and he saw his daughter's hair as he stroked it off her face with his index finger.

‘I won't regress,’ he said. ‘My name is Andrew Laeddis. I murdered my wife, Dolores, in the spring of 'fifty-two . . .’ (409- 10)

Ultimately, the novel's climax reveals a shocking twist; Teddy Daniels is actually Andrew Laeddis himself, a patient at Ashecliffe Hospital who created the persona of Teddy Daniels as a coping mechanism to escape the reality of his crimes and traumas. The loss of identity is starkly evident in this revelation, as Teddy/Andrew has constructed an entirely false identity to shield himself from the truth of his actions.

Works Cited

Jaspers, Karl. *General Psychopathology*. Translated by J Hoenig and M Hamilton. Manchester UP, 1998.

Kraepelin, E. *Manic-Depressive Insanity and Paranoia*. Translated by R Mary Barclay. Edinburgh E.& S. Livingstone, 1921.

Lehane, Dennis. *Shutter Island*. Bantam Books, 2003.

Munro, Alistair. *Delusional Disorder: Paranoia and Related Illnesses*. Cambridge UP, 1999.

Shutter Island. Directed by Martin Scorsese, Paramount Pictures, 2010.

Symkus, Ed. *Real local flavour on display in 'Shutter Island'*. The Patriot Ledger, 2010.



A FEMINIST AND STYLISTIC READING OF MAYA ANGELOU'S *THE HEART OF A WOMAN*

M. Anumalika

PG and Research Department of English, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT

Maya Angelou is an Afro-American poet, memoirist, novelist and Civil Rights activist. She published seven autobiographies, three books of essays, several books of poetry and was credited with a list of plays, movies and television shows spanning over fifty years. Maya Angelou is an acclaimed American poet, story teller, activist and autobiographer. The research paper entitled **A Feminist and Stylistic Reading of Maya Angelou's *The Heart of a Woman*** is a powerful reflection on the experiences and resilience of women. It delves into themes of identity, strength, and the struggles faced by women in society. Angelou's use of language and imagery vividly captures the complexity of womanhood, offering a profound exploration of both personal and collective experiences. The novel celebrates the courage and resilience of women while acknowledging the challenges they face. It is a poignant reminder of the importance of recognizing and honouring the heart and spirit of every woman.

Keywords: Autobiography, Empowerment, Identity, Afro-American.

Introduction

African American literature is a body of literature written by Americans of African descent. Beginning in the pre-revolutionary war period, African American writers have engaged in a creative dialogue with American letters. It spans various genres, including novels, poetry, essays, and plays, and addresses themes such as identity, race, oppression, and resilience. From slave narratives to contemporary works, African American literature has played a crucial role in expressing the experiences and perspectives of Black Americans throughout history. The result is a literature rich in

expressive subtlety and social insight, offering illuminating assessments of American identities and history.

The Heart of a Woman, Maya Angelou's autobiography, explores how African-American women claims her identity amidst the white dominated American society. Maya Angelou faces discrimination in terms of class, culture, ethnicity and prejudice. Despite the discrimination, in terms of race, gender, class and cultural prejudices, Maya asserts her voice against all sort of mistreatment towards her. Maya presents the sufferings of the African Americans in America especially black women who are trapped in the social and cultural barriers by white Americans. She has also challenged white's illiterate behaviour and injustice in white dominated society in all her works. It also studies the way they became successful to change themselves from victims of racism into self-dignified women capable of responding to injustice and exploitation.

Maya Angelou uses writing as a vehicle to express African American's voice against the prejudice of whites in America. The research article entitled "A Feminist and Stylistic Reading of Maya Angelou's *The Heart of a Woman*", aims to analyse the stylistic aspects in Maya Angelou's *The Heart of a Woman* in a feminist perspective. Through her stylistic choices, she transforms real life events into literary works which is explicated by the researcher in this article.

Maya Angelou is an intelligent African-American woman who is famous for her autobiographical novels, poetry and active participation in the segregation movement of 1960's. She is also known for her supreme skill with the poetic rhythm. Her style is renowned for what might be called its "Black Pride" and feminist liveliness, which adds an edge of strength and clarity to her works. Maya's fourth novel *The Heart of a Woman* is based on her journey, from place to place, from house to house, from coast to coast. To emphasize the theme of movement, she opens the text with a Biblical reference of Noah's ark: "The ole ark's a- moverin', a-moverin', the ole ark's a-moverin' along" (1). Unlike fictional forms such as the novel or short story, the plot in *The Heart of a Woman* focuses on the revelation of character rather than on the development of a line of action. It also has fewer emotional disruptions than the three earlier autobiographies.

Maya acts in a more mature manner both as a mother and a professional. As a

political organizer in Martin Luther King's Southern Christian Leadership Conference, she achieves a level of competence. *The Heart of a Woman* is the work that signals Maya's maturity. She becomes more certain in her mothering, now that Guy is an adolescent. She promises herself to give up major tours, and find fulfilment in her New York environment as an actress, a writer, and a political organizer.

Maya's professional activities are interrupted when in 1961 she meets a South African, Vusumzi Make. Make takes Maya and Guy to Cairo where all of Maya's expectations are scattered mainly because of money problems. Maya gives a vivid account of her life as a child, a mother and a married woman. It is thus very clear that Maya uses the first person pronoun to present her emotions and experiences to her readers not only to entertain them but to educate them about life's ups and downs as well. Buchi Emecheta states: "Marriage is lovely when it works, but if it does not, should one condemn oneself?" (87) "I stopped feeling guilty for being me" (184). *The Heart of a Woman* ends with the divorce of Make and Maya, and the mother and son setting off to Liberia when Guy was seriously injured in a car accident.

Maya's place in the tradition of black women autobiography will be established by characterizing in political awareness, communal responsibility, knowledge of oppression and empathy for displacement. Maya gives an expression of Black oppression of racism, and her journey toward self-affirmation. Her autobiography achieves an effect of celebration of the rituals of the culture and the Black oral tradition. Maya's literary significance rests upon her ability to narrate story both as a Black American and a woman in the twentieth century. She illuminates the black past in an American context that provides her readers to realize the Black American experiences. As a woman, Maya finds out that a woman has a lot of masks which are difficult to take out. Her masks are shaped by her political view, her race and her family. Her story becomes a combination of these responsibilities of a black woman as a mother, as a woman and as an activist.

In Order Out of Chaos: The Autobiographical Works of Maya Angelou, Dolly Aimee Mcpherson explains her concern:

In *The Heart of a Woman*, and in the other volumes of the autobiography as well, Maya utilizes biographical and historical data to lead the reader away from the time- honoured myths and filtered understanding of the historically-bound present. While incorporating social and political issues in her work, she does not allow protest to dominate her writing to the exclusion of other concerns. Instead, she consciously broaches the subjects of survival and social change from a variety of vantage points: artist, activist, woman. (138)

Maya points out the historical and social developments of her term while writing autobiography. She not only tells her story from a black woman perspective, she also uses her political identity and her social role as a mother. This enables her to capture and to present the events from various perspectives. Maya uses her autobiographies to create the relationship between writing an autobiography and giving birth to a child.

The relationship between Maya and Guy has a powerful effect on the novel *The Heart of a Woman*. Maya in the Black society wants to protect her son from all evils. She is scared of the society, for it might look down upon her son. This is the reason for her to appear in all the scenes wherever Guy faces difficult situations. When John phones Maya to inform about Guy's involvement in the Brooklyn gang. She is extremely worried and blames herself for leaving him alone. Maya was ready to do anything for the sake of her son. Maya also brings out the relationship between her and her mother Vivian. Vivian also makes her appearance whenever Maya was in trouble. This was the reason for Maya to save her son from all difficult situation.

In *The Heart of a Woman*, Maya brings out the traumas of marriages. She wants to get married in order to find an identity for herself. She has a false belief that she can gain an identity through marriage. That does not mean she totally depends upon the man, but she wants to establish herself as a good wife. Maya, finds herself lost in both the marriages. Disappointments were the consequences of her marriages. Maya's fantasies about marriage which she created right from her childhood are the reason behind her disappointments. Another reason for Maya to get married was her son Guy. She wanted

Guy to have a father, so that he can be a better person in the society. Though Maya has not discussed these things with Guy, she says that she can understand his feeling, for, Maya too grew up in the same situation like Guy. After the failure of both the marriages she finds herself a new life. She finally realizes that an identity for oneself can be gained only by hard work. She becomes more mature and starts leading an independent life.

Race, like in the rest of the series, is a predominant theme in *The Heart of a Woman*. The book opens with Maya and Guy living in an experimental commune with white people, trying to participate in the new openness between Blacks and Whites. She is not completely comfortable with the arrangement; Maya never names her roommates, even though “naming” has been an important theme in her books. For the most part, Maya is able to get along well with whites, but she occasionally encounters prejudice, as when she needs help from white friends to rent a home in a segregated neighborhood.

The Heart of a Woman takes readers on a journey through Maya’s numerous roles - as a mother, wife, lover, and artist and the ever-evolving nature of identity. Reflecting on her marriages and her experience of motherhood. As exposed by Karen Karbo in her work *The Gospel According to Coco Chanel*: “Self-invention is an act of the imagination, the ongoing writing of an enormous never-ending novel in which you are the protagonist” (31), here also the search for truth, the discovery of inner self has been given importance. Maya asserts that the real identity of every woman is always a question unless she herself seeks to find it. Therefore, motherhood alone cannot be her identity, the concept of motherhood is thus deconstructed in *The Heart of a Woman*.

Maya candidly explores the challenges of love, the pursuit of self-worth, and the delicate balance of personal and professional aspirations. It also captures her growth and exploration as an artist. She takes readers behind the scenes, chronicling her experiences in the entertainment industry and her friendships with influential figures such as James Baldwin and Billie Holiday. Through her vivid descriptions and reflections, Angelou artfully portrays her quest for artistic liberation and expression.

Throughout the novel, Maya’s writing is characterized by its poetic beauty, evocative imagery, and lyrical language. She uses her unique voice to transport readers to different settings, capturing the essence of time and place with remarkable clarity.

Maya's *The Heart of a Woman* is a compelling and mesmerizing testimony of a woman's journey towards self-discovery and social consciousness. It stands as a testament to the strength of the human spirit, inspiring readers to embrace their own experiences and find solace in the power of love, resilience, and personal growth.

The Heart of Woman is about the power of determination and never giving up on our dreams. Despite facing numerous obstacles and setbacks, Maya remains determined to achieve her goals and make a name for herself as a writer and performer. *The Heart of a Woman* emphasizes the importance of resilience in the face of adversity. Angelou overcomes a series of personal challenges, including failed marriages and financial struggles, but she never allows these experiences to break her spirit. Instead, she uses them as stepping stones to learn and grow.

Maya explores and embraces her own identity, discovering her passions in writing, activism, and the arts. Readers are encouraged to take the time to engage in self-reflection and seek their own passions and purpose in life. Maya shows us that vulnerability is not a weakness but a necessary part of personal growth and connection with others. She shares her innermost thoughts and emotions, even when they are painful or difficult, which allows her to form deeper relationships and connect with readers on a profound level.

The mother and child relationship is put forth by Maya while declaring Vivian's care for her and Maya's anxiety of Guy's growth: "Fruit does not fall from the tree" (2) also refers to the mother-child bond. Fruit is implied as child while tree is implied as mother. As Maria Montessori says: "Children have an absorbent mind. They absorb knowledge from the environment without fatigue . . . This is the moment in the life of man when we can do something for the betterment of humanity and further brotherhood" (150), the significance of the role of a mother is reiterated in these lines. Hence, the inseparable bond between the mother and the child is an unconscious attitude that takes place in the novel.

The Heart of a Woman highlights the power of women and their ability to create change. Angelou discusses her involvement in the civil rights movement and her commitment to fighting for equal rights for all. The book serves as a reminder of the

importance of standing up for what we believe in and actively working towards a more just and inclusive society. This novel displays a unique and intimate view into Maya's life, presenting a rich tapestry of her relationships, personal growth, and political activism. Through her lyrical prose and powerful storytelling, Maya invites the readers into her world, exposing the complexities, triumphs, and struggles she encountered as a black woman living in a racially divided society.

Conclusion

The novel explains some features of literary style that Maya chooses to present her narratives. The significance of the stylistic techniques used by Maya proves her as a crafty writer who writes with style that enables her stories to come out with a clear message. Her poetic prose and powerful imagery further underscore the message of female empowerment and agency, making it a significant contribution to feminist literature. However, it is logical that for every story, be it fiction or non-fiction, there must be a way of narration with a bit or more of artistic and literary flavor. It is, therefore, very factual for any reader of the autobiographies of Maya to acknowledge that her life stories are interestingly told by a master story-teller. The autobiography of a woman creative writer is therefore, a great asset to understand her creative genius, feminine sensibility and individualism. This research article entitled "A feminist and stylistic reading of Maya Angelou's *The Heart of a Woman*" observes how Maya's work challenges traditional gender roles and celebrates the strength and resilience of women. It emphasizes the importance of self- discovery, empowerment, and the pursuit of one's dreams, regardless of societal expectations.

References

1. Emecheta, Buchi. *The Joys of Motherhood*. Penguin Classics, 2022.
2. McPherson, Dolly Aimee . *Order Out of Chaos: The Autobiographical Works of Maya Angelou*. Virago Press, 1990.
3. Karbo, Karen. *The Gospel According to Coco Chanel: Life Lessons from the Most Elegant Women*. Morris Book Publishing, 2009.
4. Montessori, Maria. *The 1946 London Lectures*. Ed. Dr. Annette Haines



Montessori, Pierson Publishing House, 2012.

Primary Source

Angelou, Maya. *The Heart of a Woman*. Hachette, 2010.

A SYNESTHETIC PORTRAYAL OF POSTCOLONIAL INDIA IN SALMAN RUSHDIE'S *MIDNIGHT'S CHILDREN*

M. Apshan

PG and Research Department of English, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT

Salman Rushdie, the Indian-born British American writer, is one of the most influential writers of modern times, who emerged in 1980s with a new form of expression and technical innovation. His 'Booker Prize' winning novel *Midnight's Children* is often associated with different categories of literary fiction, which include postmodern, postcolonial, historical novel and most importantly, magical realism. The article entitled **A Synesthetic Portrayal of Postcolonial India in Salman Rushdie's *Midnight's Children*** examines synesthetically the sensitive religious and political issues of Postcolonial India in a discontinuous, fragmented, and even obscure way through the experimental mode of distorted narration.

Keywords: postcolonial India, freedom, religion and partition, fragmentation, Historiographic metafiction.

Salman Rushdie's novel *Midnight's Children* is a thematically rich work that explores the connections between history and individual experiences, the impact of colonialism and neocolonialism in India, and the themes of fragmentation, migrancy, and memory. It is indeed a fascinating account on India, one of the most captivating countries in the world, and simultaneously it is a tale about the Sinai family, their emotions and their struggles in the face of a tragedy that befell their country.

Synesthesia is a phenomenon that causes sensory crossovers in human mind. As a result, one senses a forthcoming event through his other irrelevant sense. In *Midnight's Children*, Saleem inherits the power of sensing others' emotion through his smell sense. Through his distorted sense of memory and the power of telepathy, Saleem narrates the story of postcolonial India. Thus, Synesthesia becomes a powerful tool of Rushdie as well as his character Saleem Sinai to portray the history of Postcolonial India in a vivid manner.

The British Empire ruled over India for almost 350 years due to which the Indian culture and literature were tremendously influenced by the English culture and literature which further gave rise to cultural clashes as an impact of British rule both in India and on the life of the main protagonist in the novel *Midnight's Children*. The novel employs different levels of hybridization, each depending on each other to exist and work within the text, through which the novel illustrates India's emerging postcoloniality and multicultural clashes.

Midnight's Children explores recurring themes such as the interplay between history and individual experiences, and the consequences of migrancy, fragmentation, and memory, while focussing on personal lives. It covers three generations of a family, beginning with the early 20th century and British colonial rule and captures the political turmoil and violence that characterized India's early independence. Through various historical and personal incidents, Rushdie emphasizes the profound link between the individual's memory and the larger historical context. The fragmented memories and migratory patterns of the novel depict the challenges faced by the individuals who are caught in multiple worlds.

The memory of fragmentation informs much of the novel as the characters are often divided by their backgrounds, ethnicity, and language, while the story itself traverses various regions in India and Pakistan. One of the most striking features of *Midnight's Children* is the unusual way in which the story is structured. The plot jumps back and forth in time, with Saleem introducing events from different parts of his life in seemingly random order; it is because he narrates the events from his disordered memory.

After the secession of the British rule over India, Britain passed the sovereign power to the two newly formed countries – the Hindu India and Muslim Pakistan. The Partition of India did not only bring the creation of the new countries, but also brutal conflicts which resulted in the deaths of hundreds of thousands of people. In the words of Larry Collins and Dominique Lapierre, the partition had been a period as:

Never before had anything even remotely like it been attempted. Nowhere were there any guidelines, any precedents, any revealing insights from the past to order what was going to be the biggest, the most complex divorce action in history, the breakup of a family of four

hundred million human beings along with the assets and household property they had acquired in centuries of living together on the same piece of earth. (Freedom at Midnight)

Its consequences are the 1965 Indo-Pakistani war over Kashmir and the 1971 conflict over Bangladeshi independence.

More than seven decades after the Partition of India in 1947, the burden of grief in the hearts and minds of those affected still bears heavy. With a mere stroke of ink on a map, a nation was divided into two, affecting families from one generation to the next, the resultant scars and wounds of which run painfully deep even today. People on either side of the dreaded Radcliffe line that divided India and Pakistan experienced unimaginable trauma. The horrific events which led to the displacement of millions of people are forever etched in the memories of those who survived the nightmare. Yet, despite the widespread devastation, there were also some uplifting stories of humanity, along with the memories of all that was lost and those who were lost.

The division of land sparked unprecedented communal violence and led to a mass exodus of people and a tremendous loss of life, property, and identity. The year 1947 is an eventful year where there are political and social tensions between Hindus and Muslims after the Partition: two wars over the Kashmir, and one over the creation of an independent Bangladesh. All these events were depicted in the novel and made great impacts on the plot. Multiculturalism and cultural clashes are major characteristic features in post colonial India, and these cultural clashes are partly the consequences of the British Empire in India.

In *Midnight's Children*, Rushdie skilfully integrates the Indian history with the memories of the protagonist, Saleem Sinai who was born on 15th August 1947. Saleem based on his unreliable memory weaves together the events that occur in independent India on a political and historical scale with the personal events that take place in Saleem's life alongside those of his family. From partition to the Emergency, Rushdie covers many of the most significant events in India's recent history through the lens of Saleem's fragmented memory.

Rushdie portrays the character Saleem Sinai as one who is caught between two cultures. Having European manners, culture and thought, his doubts keep nibbling at

his mind. This is the main problem of many Indians and is the reason for everyone to search for his identity. This searching confronts the protagonist with a dilemma whether to accept newly acquired experiences on one hand or to stay deeply connected with the culture and traditions of his own native country on the other.

The memory and oral narrative of *Midnight's Children* provide alternatives to the conventional forms of history. Saleem believes his memory as valid and as the official version of truth, rather than others version of truth. In other words, Saleem's memory refuses to accept fact as truth. Saleem says:

Memory's truth, because memory has its own special kind. It selects, eliminates, alters, exaggerates, minimizes, glorifies and vilifies also; but in the end it creates its own reality, its heterogeneous but usually coherent version of events; and no sane human being ever trusts someone else's version more than his own. (292)

The central motive of Saleem is the assertion of the nation as a fictional construct. Nationalist scholar Benedict Anderson defines the nation as a societal construct of the imagination. Anderson defines the nation as:

An imagined political community—and imagined as both inherently limited and sovereign. It is imagined because the members of even the smallest nation will never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion. (Benedict 6)

With this definition Anderson starts to expose the false consciousness of nationhood. . Therefore, it is exposed that in order for nations to exist, communion and identity must be constructed by the imagination.

The identity of Indians became their fragmented experience which is evident in the narration of Saleem's parents' life. Ahmed and Amina buy a mansion from William Methwold, a British colonist who is preparing to return to London after India's independence, and they quickly move in, living amongst the Englishman's belongings and customs. Methwold's Estate is a small-scale representation of British colonialism. Methwold's insistence on a delayed sale and the retention of his personal belongings represent the trappings of Western civilization and culture. Methwold's

belief in his superiority is on full display as he tells Ahmed, a native Indian, how his own European ancestors are responsible for the creation of Bombay. Methwold believes that India ceased to exist until Europeans arrived and discovered it.

The fragmentation or the partition of India and Pakistan further ensue rage in the hearts of the public, irrespective of their religions. In a fragile voice, Mary Pereira, the nanny of Saleem, describes the ensuing rage of Joseph D'Costa, who told her, "This independence is for the rich only; the poor are being made to kill each other like flies. In Punjab, in Bengal. Riots riots, poor against poor. It's in the wind"(139). When Mary made an anti-patriotic comment that these fights are between only Hindus and Muslims and why should the Christians get involved, Joseph replied "You and your Christ. You can't get it into your head that that's the white people's religion? Leave white gods for white men. Just now our own people are dying" (139). The view of Joseph highlights his Patriotic spirit for his nation irrespective of any religion.

When Amina Sinai was pregnant, a peep-show man came into a Muslim community, who was finger-pointed by the locals as 'Hindu', the mob started chasing him but he was saved by Amina Sinai who claims:

In a Muslim Muhalla you would tear a man to pieces? Go, remove yourselves.' But the mob has stopped being surprised, and is moving forward again... and now. Now it comes.

'Listen,' my mother shouted, 'Listen well. I am with child. I am a mother who will have a child, and I am giving this man my shelter. Come on now, if you want to kill, kill a mother also and show the world what men you are!' (100)

Despite the riots, the only thing which stubbornly refuses to fade away is the sense of humanity irrespective of religions, which still glues people of one nation altogether.

Midnight's Children complicates how historical fact is perceived, how a nation is constructed, and most importantly how fictions contest notions of singular historical authority. *Midnight's Children* is a historiographic metafiction that problematizes the notion of universal historical truth without losing its authenticity as fiction. Much of the realm of post-modern fiction is concerned with history. This sub-genre is what Linda Hutcheon defines as historiographic metafiction:

The postmodern relationship between fiction and history is an even more complex one of interaction and mutual implication. Historiographic metafiction works to situate itself within historical discourse without surrendering its autonomy as fiction. (Hutcheon 2)

Sinai's narration becomes critical, sometimes philosophical and ambivalent. Saleem questions and challenges, if not deny, the historiographic claims of authentic representation of the past. The egocentricity of Saleem's historiographic efforts emerges at several places in the novel when Saleem is trying to fit historical events to his personal. To use the language of Michel Foucault, Saleem Sinai's body is exposed as "totally imprinted by history and the process of history's destruction of the body" (83). His self-reflexive rendering of history into story shows the readers that how histories are made up involving the process of selection in a manner that cannot remain unaltered and undistorted. It evokes the issue of narrativity of historical representation that foregrounds that reality is produced and sustained by cultural representations of it.

To conclude, *Midnight's Children* is a work of enormous scope and ambition, and its impact has been long lasting. Rushdie combines elements of magic realism and historical fiction to create a book that resonates with readers on multiple levels. As a fantastical tale, the book is often playful, but it also provides a searing political commentary on the consequences of colonialism and the challenges faced by a young nation struggling to define itself on its own terms. One of the most significant themes in *Midnight's Children* is the matter of identity. Rushdie navigates questions of both individual and national identity, inextricably linking Saleem's sense of self with the larger story of India's independence. Consequently, the novel raises questions about how one understand and interact with their own history, and the extent to which one's environment shapes one's sense of self. The research exposes various issues postcolonial Indians faced. Through this research, it is obvious that Rushdie's use of synesthesia does, indeed, parallel his stance on postcolonial national identity, showing that India's national narrative may reside in hybridity.

Works Cited

Benedict, Anderson. *Imagined Communities*. Rev. ed., Verso, 1983, p.6.

Collins, Larry, and Dominique Lapierre. *Freedom at Midnight*. Avon Books, 1975.

Foucault, Michel. “Nietzsche, Genealogy, History.” *The Foucault Reader*, Pantheon Books, 1984.

Hutcheon, Linda. *A Poetics in Postmodernism: History, Theory, and Fiction*. Routledge, 1988.

John Hopkins. *Historiographic Metafiction: Parody and the Intertextuality of History*. UP, 1989.

Rushdie, Salman. *Midnight’s Children*. Vintage, 2013.

EMOTIONAL EXPERIENCES IN CHERYL STRAYED'S *WILD: A JOURNEY FROM LOST TO FOUND*

C. Ashmitha Chellam

PG and Research Department of English, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu,
India

ABSTRACT

The paper attempts to analyse different aspects of emotional experiences as reflected in Cheryl Strayed's *Wild: A Journey from Lost to Found*. Strayed is one of the greatest American novelists of the twentieth century. The novel details her 1,100-mile hike along the Pacific Crest Trail and spotlights personal struggles and journey towards redemption. The central theme is to overcome grief that Strayed went through due to the loss of her mother to lung cancer, as well as the split of her family and marriage. Her choosing illegitimate relationships with men and heroin addiction as a coping mechanism are analysed. Her decision to go on a hike in order to discover herself, brings out her retrieval journey.

Ke words: Grief, Cancer, Family, Marriage, Relationship, Heroin, Hike.

Introduction

Travel writing is a flourishing and highly popular literary genre. Readers indulge their taste for the exotic, or for adventure, or simply for news of the wider world, by drawing on a vast array of both contemporary and historical travel books. For much of the twentieth century, the genre was dismissed by literary critics, and cultural commentators as a minor, somewhat middle-brow form. However, travel writing's reputation rose sharply in the latter part of the twentieth century with the appearance of a new generation of critically acclaimed travel writers such as Paul Theroux, Bruce Chatwin, Ryszard Kapuscinski and Robyn Davidson.

Some of the most influential travel authors of all time, whose works have inspired wanderlust and have contributed to the study of travel literature include Bill Bryson, an American and British author whose book *Notes from a Small Island* brought him to prominence among travel writers. His travel books include works about travel in America, England, Australia, Africa, and other countries in Europe. Paul Theroux is an American novelist and travel writer, best known for his book *The Great Railway*

Bazaar. Bruce Chatwin is an English novelist and travel writer, whose first book *In Patagonia* is considered a classic in the genre.

Cheryl Strayed was born in Spangler, Pennsylvania, the second daughter of Barbara Anne and Ronald Nyland. She received her Bachelor of Arts degree, with a double major in English and Women's Studies. Strayed worked as a waitress, youth advocate, political organizer, temporary office employee, and emergency medical technician throughout her 20s and early 30s, while writing and often traveling around the United States. In 2002, she earned a Master of Fine Arts in fiction writing from Syracuse University.

Cheryl Strayed is also a podcast host. She is the author of the *New York Times* bestseller *Wild: A Journey from Lost to Found*, which was made into an Oscar-nominated film. Strayed's other books are the critically acclaimed novel, *Torch*, and the bestselling collection *Brave Enough*, which brings together more than one hundred of her inspiring quotes. Her books have sold more than five million copies around the world and have been translated into forty languages. Her award-winning essays and short stories have been published in *The Best American Essays*, *New York Times*, *Washington Post Magazine*, *Vogue*, *Salon*, *The Missouri Review*, *The Sun*, *Tin House*, *The Rumpus* and elsewhere. Strayed has also made two hit podcasts, 'Dear Sugar' and 'Sugar Calling.'

Strayed's second book, the memoir *Wild: A Journey from Lost to Found*, was published in the United States by Alfred A. Knopf on March 20, 2012. The week of its publication, *Wild: A Journey from Lost to Found* debuted at number seven on the *New York Times* best seller list in hardcover non-fiction. In June 2012, Oprah Winfrey announced that *Wild: A Journey from Lost to Found* was her first selection for her new Oprah's Book Club 2.0. Winfrey discussed *Wild: A Journey from Lost to Found* in her video announcement of the new club and interviewed Strayed for a two-hour broadcast of her show 'Super Soul Sunday' on the Oprah Winfrey Network. The next month *Wild: A Journey from Lost to Found* reached number one on the *New York Times* best seller list, a spot it held for seven consecutive weeks.

The novel won the Barnes and Noble Discover Award and the Oregon Book Award. Three months before the novel was published, actress Reese Witherspoon optioned it for her production company, Pacific Standard. Nick Hornby wrote the screenplay, and the film *Wild* was released in 2014, with Witherspoon portraying

Strayed. The film was a box office hit, grossing \$52.5 million, and led to Academy Award nominations for both Witherspoon and actress Laura Dern, who played Strayed's mother.

Bird's eye view

Grief is the anguish experienced after significant loss. It often includes physiological distress, separation anxiety, confusion, yearning, obsessive dwelling on the past, and apprehension about the future. Grief is not limited to the loss of people, but when it follows the loss of a loved one, it may be compounded by feelings of guilt and confusion, especially if the relationship was a difficult one. Grief involves coping with loss. Death, divorce and the loss of a home are all major events that people grieve. The idea of growing around grief acknowledges that grief does not always disappear with time but life will grow around the grief.

The main conflict in *Wild: A Journey from Lost to Found* is the protagonist's struggle to come to terms with the loss of her mother, Bobbi, who was diagnosed with late-stage lung cancer at only forty-five years old. Cheryl's grief over her mother's death leads her to spiral into a self-destructive lifestyle, which includes drug addiction and infidelity, and ultimately leads to the breakdown of her marriage. In an attempt to find herself and heal from her past, Cheryl decides to hike the Pacific Crest Trail from the Mojave Desert to Oregon, a journey that forces her to confront her inner conflicts and come to terms with her past mistakes.

Late-stage lung cancer refers to stage 3B or 4 cancers, where the cancer has spread from the lung to other parts of the body. The final stage of lung cancer means there are no more treatment options and cure are not possible. John Green in *The Fault in Our Stars* states, "That's the thing about pain . . . It demands to be felt" (63). Cheryl thought about her older sister Karen, her younger brother, Leif. She thought about her husband Paul, about her mother's parents and sister who lived thousand miles away. Cheryl mentions that she and her siblings were her mother's kids, her comrades, the end of her and the beginning. The amount that her mother loved them was beyond her reach and that it could not be quantified or contained. Her mother's love was full-throated, and all-encompassing and unadorned. George Orwell in 1984 states, "Perhaps one did not want to be loved so much as to be understood"

(252).

Bobbi married Cheryl's father while she was nineteen and pregnant. Three days later, Cheryl's father knocked Bobbi around the room. Bobbi left him but went back to him again. Her father broke Bobbi's nose and her dishes. He skinned Bobbi's knees dragging her down a sidewalk in broad daylight by her hair. By twenty-eight, Bobbi managed to leave Cheryl's father for the last time. Cheryl had to go through her father abusing her mother. She encountered domestic violence at home. Bobbie met Eddie, who was eight years younger than her, but they fell in love instantly. Karen, Leif and Cheryl fell in love with them too. He was a carpenter who could make and fix anything. Bobbie and Eddie took twelve-thousand-dollar settlement and bought forty acres of land in Aitkin County. Colleen Hoover in *Reminders of Him* states, "There was before you and there was during you. For some reason, I never thought there would be an after you." (248).

Cheryl knew everything about Bobbi's life. Throughout her childhood and adolescence Cheryl would ask Bobbi to tell her life story again and again. But now that Bobbi was dying, Cheryl knew everything. Bobbi was in her already. One day at the hospital, the nurse gave Bobbi morphine and told that morphine was what they gave to dying people and that it meant no hope. Bobbi cried from the pain. Leif and Karen stayed away making excuses that Cheryl found inexplicable and infuriating. A doctor said that Bobbi was actively dead. Bobbi would beg for morphine to the doctor. Leif didn't visit Bobbi. Karen came after Cheryl insisted that she must. Cheryl was heartbroken and enraged in disbelief. Cheryl's husband Paul, did everything he could to make Cheryl feel less alone.

Bobbi advised Cheryl to accept things as they were. Cheryl assured Bobbi that the next morning they all will be there together with Bobbi. She bends to kiss Bobbi's cheek but Bobbi fended Cheryl off in too much pain to endure a kiss. Cheryl said that she loved Bobbi and left the room. While Cheryl and Leif arrived, a nurse approached them in the hallway and told that they have kept ice on Bobbi's eyes for Bobbi wanted to donate corneas. Cheryl and Leif ran to Bobbi to find her dead. Bobbi died fast but not all of a sudden.

She couldn't leave Minnesota as her family needed her. She wondered if she had to help Leif grow up, to be there for Eddie in his loneliness, to make thanksgiving dinner and carry the family traditions. Someone had to keep what remained of their

family together. Part of her was terrified by the idea that Paul would leave her behind; another part of her desperately hoped he would. Paul deferred his admission for a year. Cheryl realized that she was not able to keep her family together for she wasn't her mom. It was only after Bobbi's death that she realized who she was. Bobbi was the apparent magical force at the center of their family who had kept them all invisibly spinning in the powerful orbit around her. Without Bobbi, Eddie slowly became a stranger. Leif, Karen and Cheryl drifted their own lives. They were four people floating separately among the flotsam of their grief, connected only by the thinnest rope. Cheryl never made to the thanksgiving.

Cheryl's grief obliterated her ability to hold back her attraction toward other men. Bobbi had been dead a week when she kissed another man. She had intimate relationship with him and others that followed vowing not to cross a sexual line that held some meaning to her, but still she knew she was wrong to cheat and lie. She felt trapped by her own inability to either leave Paul or stay true.

Few months past the second anniversary of Bobbi's death, Cheryl was not worried about crossing the line with men. She was trying to heal, to get the bad out of her system, to cure, but she was not able to. When she returned to Minneapolis to live with Paul, she knew she had to tell him, that she had an affair with another man. Her mom was dead three years by then. It is not that she did not love Paul but that she had to be alone, though she didn't know why. When she told everything to Paul, they both fell on the ground and sobbed. Paul moved out. Slowly they told their friends that they were splitting. Another woman made out with Paul. Cheryl was hurt and jealous. She was told by another friend that she deserved and tasted her own medicine. Three months into separation, she neither wanted to get back with Paul nor wanted to divorce. Paul was dating several women, but she was suddenly celibate. Now that she had smashed up her marriage over sex, sex was the furthest thing from her mind. Her friend Lisa suggested her to move out of Minneapolis and to visit her in Portland. Cheryl later moved into drugs to relieve pain.

At Portland while Cheryl went to visit Lisa, she met a man named Joe at a bar. She hadn't slept with anyone since Paul and she had a breakup three months back. That night she had sex with Joe. He asked if she ever tried heroin. Joe had just started using it when he met her. It was something Joe did, separate from her with his friends. She could have glided past it but something compelled her to pause instead. She was intrigued, unattached, in her youth and sorrow, and was

ready to self-destruct. Within a few days, she wasn't in Portland to visit Lisa and escape from sorrow anymore. She was in Portland falling into a drug-fueled half love with Joe. She moved into his apartment. It was like she found an actual planet that didn't know had been there all along, named Planet Heroin. It was a place where there was no pain, where there it was unfortunate but essentially okay that her mother was dead and that her biological father was not in her life, and her family had collapsed and that she couldn't manage to stay married to the man she loved.

Conclusion

It is observed that the novel teaches about various stages of overcoming grief. It profoundly highlights the roller coaster of emotions. Cheryl Strayed introspects her life and evolves as a better person. Cheryl also recollects memories of good moments. Anne Frank in *The Diary of a Young Girl* states "I love you, with a love so great that it simply couldn't keep growing inside my heart, but had to leap out and reveal itself in all its magnitude" (179). While Cheryl reached for a wash cloth during hike, she got reminded of her mother saying that the first thing she did when each of them were born was to kiss every part of them. Contrast of emotions are highlighted throughout the novel. At times, her pain was magnified about a thousand times. There weren't only those sad facts about life but also the additional fact that Cheryl's life was a pile of mess. She washed her face and sobbed. She told herself that she was not what she is.

Cheryl moves on to the next stage of relieving grief. It was a world Cheryl had never been to and yet had known was there all along, one she would stagger to in sorrow, confusion, fear and hope. It was a world she thought would both make her into the woman she knew she could become and turn her into the girl she had once been. It was a world that measured two feet wide and 2662 miles long. It was a world called the Pacific Crest Trail. The PCT was a continuous wilderness trail that went from the Mexican border in California to just beyond the Canadian border along the crest of nine mountain ranges. Cheryl healed throughout her hike. She recovered on the whole when she stated about marrying a man, having two kids one of whom she names Bobbi, her mother's name. They four ate ice cream cones right at the place where she ended her hike. She never knew life would change drastically for the good. It was her life, like all lives, mysterious, irrevocable and sacred. She felt her life so close and belonging to her. She felt how wild life was to let it be.

References

1. Thompson, Carl. *Travel Literature*. 1st ed., Routledge, 2011.
2. Strayed, Cheryl. *Wild: A Journey from Lost to Found*. Atlantic Books, 2012.
3. Green, John. *The Fault in Our Stars*. Penguin Group, 2012.
4. Orwell, George. *1984*. Harvill Secker, 1949.
5. Hoover, Collen. *Reminders of Him*. Montlake, 2022.
6. Frank, Anne. *The Diary of a Young Girl*. Bantam, 1947.

WINDOW OF PSYCHOLOGICAL COMMUNICATION, TRAUMA AND REDEMPTION IN A. J. FINN'S *THE WOMAN IN THE WINDOW*

S. A. Ausmitha Srinithi Christy

PG and Research Department of English, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT

Literature is all about understanding the stream of life. One can witness the flow of life and the pull of life through Literature. A. J. Finn, as an American writer, he has concentrated on the ethics of an ordinary living in his novel. This paper on Finn's *The Woman in the Window*, focuses on the impact of past happenings in one's present life. The Trauma and the suffocation, the protagonist Anna faced in her agoraphobic condition is given importance, so as to reveal the objective of this paper that 'forgiveness is the key factor for a happy journey.' With the guilty consciousness, Anna has been leading her life isolated away from her social connection as a psychologist; until she's able to redeem and forgive herself at the end. The paper exposes the concept of redemption through the theory of Johari Window model application. 'The blind self that everyone has in their life is the key to unlock the door of redemption'; with this finding as hypothetical statement, this paper aims to prove that it is the past experience that reshapes and rebuilds a person in their esteemed way.

Keywords: Trauma, forgiveness, redemption, guilty consciousness, psychological mind set of humans, past influence.

The difficulty of literature is not to write, but to write what you mean. As Robert Louis Stevenson says, anyone can write any form of literary work. Literature is all about understanding the stream of life. One can witness the flow of life, the pull of life through literature. Literature deals with the flow of life and exposes the theme of acceptance in life. And in contrary, the pull of life exposes the other side of life, where the theme of fate accompanies along with all the other themes. In Literature, without appreciation analysis, one cannot taste the essence of the work of art imposed by the author. Literature provides the experiences to the readers experiences that are familiar as well as unfamiliar that create opportunities for the readers to know about

the outside world and its culture and practices as it talks of history as well as present life realities. Such essence of Literature has also dealt with the psychological aspects, the essence of life, in the early period. In the writings of ancient Greek philosophers, the origins of psychology has been found. Particularly, it is found in the works of Aristotle, who has used the term psyche to reference to the essence of life.

Generally, psychology is defined as the study of human minds. In literature, it is the studying of author's imagination and characters. Psychology in literature is nothing but analysing a work of art from the psychological perspective, and not considering the author's point of view. Significant authors in the field of psychology are Sigmund Freud, Carl Jung, Erik Erickson, Lawrence Kohlberg and Ivan Pavlov, as well as Adler. Their theories which exposed the concepts of moral and psychological developments and the notion of inferiority complex help in analysing the cognitive and the personal developments in the particular character of the novel. With the help of the various theories of the psychologists, a literary work can be interpreted and examined. Many American writers have used this approach of applying such theories in their literary work.

The American writers who have incorporated psychological theories in their literary works are William Faulkner, Tennessee Williams, Ralph Ellison and Toni Morrison. J. Finn, the contemporary American writer has written the novel *The Woman in the Window* that has made him famous, helped him gain commercial success. A. J. Finn is a pseudonym for Daniel Mallory, who was born on January 28, 1979 in New York city and grew up in Manhattan. He developed a passion for writing at a young age and pursued his education at Duke University and later in Oxford University for his junior year and graduate work. After completing his undergraduate studies, Mallory attended the University of Oxford, where he earned a Master's degree in Comparative Literature. During his time at Oxford, he also worked as an intern at the publishing house William Morrow, which sparked his interest in the publishing industry and solidified his determination to become a writer. Mallory's career in the literary world took off when he secured a job at William Morrow as a publishing editor. Over the years, he honed his writing skills and gained valuable insights into the publishing process, further fuelling his desire to write fiction. Inspired by the classic authors like Agatha Christie and Patricia Highsmith, Mallory decided to write under the pen name A. J. Finn and introduced his favourite characters from crime

novels.

The Woman in the Window, released in 2018, catapulted A. J. Finn to international acclaim. The psychological thriller quickly became a *New York Times* bestseller and received praise for its suspenseful narrative and intricate plot. The selective reason for choosing A. J. Finn as author, is because of his unique style in writing. Unlike other authors, Finn has depicted the real life challenges that are faced by a single woman who suffers from a disorder. How does the society view her and how she views the world are pictured by Finn. And as a contemporary author, A. J. Finn has portrayed trauma in the ordinary tone. Anna Fox's ordinary lifestyle, how as a young psychiatrist she herself needs therapy in the modern world are projected. Finn has also sketched the plot in such a way that the minor characters play an important role in Anna's life and that she is able to connect those characters personally with her life. Since the novel *The Woman in the Window*, revolves around the daily scenario of Anna Fox, it presents not the individual role of Anna Fox but the stereotypical roles of every woman who is affected psychologically and suffers individually.

The title of the novel is significant as it traces the influence of the past in determining the upward mobility of the present. Anna Fox being the woman in the window, what kind of reflection does she look for herself on the glass are studied using the psychological theories and through the concepts of Johari Window model and existentialism.

The Woman in the Window revolves around a woman who has experienced something mysterious and devastating who responds by socially isolating herself, self-medicating with alcohol, and having emotionally vexed phone conversations with absent family members. Anna used to be a prominent child psychiatrist, but since her mysterious trauma she's been beset by crippling agoraphobia. Now she spends every day locked in her house alone, drinking and popping prescription pills, and watching her neighbours through her camera. And the story proceeds on like this. The novel also serves as a traumatic past experience life of any individual. Like one can know incidents through history, one can relate a person's well being through their past events. With one such idea, the novel outlines how Anna's past life impacts her.

There are many other themes that were focused on the writings of A. J. Finn. Apart from the American dream and its society, the concept of disillusionment could be

studied from Finn's work. *The Woman in the Window* presents not only the concept of disillusionment, but also its consequences and how past can have influence on the present. And as T. S. Eliot reveals that past has connection to the present, the present life of Anna is a reflection of her past life experiences. The fact that one's past has greater influence on one's present either consciously or unconsciously has been demonstrated well by A. J. Finn in *The Woman in the Window*.

Like the saying, 'Never judge a book by its cover' here in the novel, Anna's mental and sociological condition is also the same. The readers come to know about the background only after reading in depth. What really is the cause of her condition is 'Agoraphobia' which can be studied as a background analysis in Anna's life. Having lost her husband Edward and daughter Olivia in a car accident, Anna almost became a victim from that particular accident. How as a victim she faces the real life scenario are studied under Psychological lens in unveiling the threats of society.

To the question what is Anna really into, A. J. Finn gives her current condition as "I slug a glass, float upstairs, settle myself at my desk. Reach for my Nikon . . . I muse, watch alongside my neighbor. Or I might view it right here, on his set, through the lens" (16). As Thangasamy in his book *Educational Psychology* says,

Psycho analytic theory assumes that personality is composed of id, ego and superego. The id is irrational and impulsive seeking immediate gratification. The ego is realistic and logical, postponing gratification until it can be achieved in socially acceptable ways. The superego imposes moral codes. (96)

Here, in the novel, Anna's personality can be interpreted that of Ego in trait. She does postpone gratification until it can be achieved in socially acceptable ways. And not only socially acceptable ways, but also physiologically when she's ready to go. It is only at the end, Anna achieves something on her own. Her wait; her way of postponing her dreams of being social with everyone exposes the matured characteristic in Anna though bound by her physical weakness.

Anna's tragic flaw is that she believes what she sees. It is her nikon camera that shows the world for her. Through the camera lens, through the window, Anna believes the objects rather than thoughts. There is this intuition; a kind of inner feeling; an egoistic trait that corrects the human error, which Anna must

have failed to realize. But at the end, in her flaw, Anna's superiority is seen when she kicks Ethan to get away. She forces herself to exit up to the roof despite her condition. While it's raining hard outside, they get to the edge of the roof and he knocks her over. When Ethan is about to attack her, Anna stops him by lying and saying that Katie told her who Ethan's father is. Anna starts saying things about how Katie loved the guy, he was an architect and he died, which is why she fell apart and turned to drugs. All these things, Anna says it on her own. These are not Katie's words. But it is through these words, the readers can understand the reason for Anna turning to drugs. 'An architect who died' which Anna mentions is not Katie's lover but it is Ed that Anna refers to. Professionally Ed is an architect and he died. This is the reason for Anna's drug addiction. Through this final note, the love that Anna has for Ed can be seen as an irreplaceable one, though guilty.

And as Ethan clings to the information, Anna hugs him and then she pushes him onto the skylight, which then breaks and he falls downward. "And then, with all my weight, I lean into him and push him onto the skylight" (419). Though it may seem like a tragic ending, it is not. Alistar is arrested for covering up the murder of Katie. And Anna ventures from darkness to lightness. After six weeks, Anna with the help of Bina, her physical therapist, she ventures into the garden roof.

She releases my hand and walks into the garden, tracking footprints
in the snow. She turns, beckons me.

"Come on."

I close my eyes.

And I open them.

And I step into the light. (427)

Her different phases in life, has taught her to fight against fear. And importantly, through Anna's character, how one must be able to forgive oneself is

seen significantly. Psychologically how her mental state suffers from past traumatic experience is also evident. How at first Anna blames herself for the accident caused by her, gives a clear-cut view to the readers that, as individuals it is natural to feel guilty over things. But as time passes, it is the guilty consciousness that paves way for redemption. In Anna's case, it is only at the end, she has a clear picture of the exterior world and about characters like Ethan; sweeter on the outside but sick on the inside. The finding from the plot is that, Anna is able to forgive herself, for she has seen what wicked actually means. She has blamed herself for the car accident occurred previously in her life, but on the other side, the unseen side that she did not make an attempt to see is that, the other side of human beings; the other side of world's function.

On the whole, this can be compared to Johari window model of communication theory. The Johari window model consists of four window panes which signifies personal information, feelings, motivation and the information known or unknown to oneself or others. The first window pane is known to self and others, it is called Open area or arena. When the author states the condition of Anna, both Anna and the readers are aware of her mental trauma and agoraphobia. With this condition, through the known past experience of Anna, the readers can study on her background. In the second pane of the window, the Blind spot, which is not known to self but known to others are exposed. Here, Anna's innocent facing of real world can be observed. Not knowing the character of Ethan, Anna blindly trusted Ethan. But on the other hand, Ethan's character was already known to the Russell family and they help in covering up his murder. Anna becomes a blind spot through this incident. Yet, later, it is through this incident, Anna gains consciousness of how the real world functions. Only through this incident, Anna gets enlightenment and dares to come out of the fear at last. In the third and fourth window panes, they are called the hidden area and the unknown pane. Here, the information is not known to self and others. In this case, the communication between Anna and Ethan stands as an instance. Ethan doesn't know that Anna lives in a delusional world where she keeps Ed and Olivia alive. Anna too is not fully conscious that Ed and Olivia died in a car accident. This signifies the hidden area or a facade.

As Roger Neighbour in his book *The Inner Physician* says:

Our hidden agendas; our character flaws and peccadilloes; for some of us, our politics, religion or serial preferences; the trauma that haunt us, the fantasies that excite or scare us; the emotions that perhaps embarrass us and the less-than- noble schemings that drive us these all go in Johari's 'private' quadrant. Some things about us other people can see, but we cannot. This, in Johari terms, is our 'blind' area. (243)

The blind area in Anna's case, therefore helps readers to be aware of the existential society. Is Anna really present in the current world; is she aware of the threat that surrounds her. To all those questions that arises in the readers mind, Anna makes it clear that she's easy to fall prey of. When Kate entered into the life of Anna, she imagined Kate to be her friend believing her to be Jane Russell and when Ethan entered her life, again she was ready to gel with him. This concept of open door in Anna's life, makes the study more interesting that the readers find the society daring to live in. The reason behind Anna's warm hands is that, in all her lonely state, all that she ever faced and felt was guilt. It is because of the guilty consciousness, Anna, in the motive to correct her previous past life, she invites the future without knowing the threat behind it. Unable to bear the lonely living, all she could do is make friends online with her agoraphobic condition. But when Kate and Ethan started to mingle with her face to face, Anna must have the felt the 'old her.' The days once she had with her family as face to face family time, Anna miss them; her past life. And that's the psychological reason behind Anna's unawareness towards the current society. With the blind area in her, she failed to understand the blind area outside her house. And with that influence of her past life, the research has been carried out to make readers understand the impact of one's darkness faced before and how it could lead them to blindness and also to do better in life. After all it is the experience that speaks more of a character. Anna's character is further studied deeply in the following chapter, building a connection between Anna's past and her emotional steadiness.

The concept of Johari Window has been analysed in this research paper, so as to prove the hidden side of each and every individual. Not just Anna, but everyone has something hidden in their past. It can be a conscious proof or even an unconscious one. Like the window that has four sides, each and everyone has four phases in their life, which are results of past experience. Some are revealed, but some are hidden; each

one has a different story. Anna's life as a proof, the readers can witness the conscious pretending of Anna. Though she knows she has no family, she imagines to be in a familial bonding with the dead person. This not only proves the hypothesis statement of past influence, but it also proves the agoraphobic disorder in Anna. The fear of going out of the house as well as her comfortable, familiar, family zone. And so, *The Woman in the Window* by A.J. Finn delves into the intricate exploration of how the past influences the present and shapes the character's behaviour and decisions throughout the novel. The protagonist, Anna Fox, grapples with a traumatic event from her past, which ultimately becomes a defining factor in her present reality. As the story unfolds, the readers witness how Anna's past experiences, particularly her trauma and resulting agoraphobia, impact her perception of the world around her and her interactions with other characters. Through flashbacks and snippets of memories, the reader gains insight into Anna's past and how it continues to haunt her in the present. Her past experiences are deeply intertwined with the unfolding events in the story, blurring the lines between reality and fiction. A. J. Finn skilfully weaves together past and present, demonstrating how unresolved issues from the past can resurface in unexpected ways and shape an individual's current reality. Anna's struggles with her mental health, triggered by events from her past, serve as a poignant reminder of how deeply past traumas can leave traces and how they can manifest in different ways over time. The novel underscores the idea that one's past experiences, no matter how buried or repressed, have a way of resurfacing and influencing present circumstances and decisions.

Thus, the novel, *The Woman in the Window*, can be justified as a work with influenced implicit memory that unconsciously changes the behavioural trait in an individual. It is through the past experience that people change unconsciously. The regrets one has in their life will slowly their anxiety level, causing trauma; for positive past experiences tend to generate optimistic expectations, while negative experiences can lead to pessimistic or cautious predictions. Therefore, this novel portrays many psychological themes and concepts that relates to past memory and trauma and can be assured as one of the quality works of A. J. Finn.

Works Cited

Finn, A. J. *The Woman in the Window*. Harper Collins Publishers, 2018.

Neighbour, Roger. *The Inner Physician*. CRC Press eBooks, 2018,



<https://doi.org/10.1201/9780429468100>.

Thangasamy, Kokila S. *Educational Psychology*. Maa Nila, 2005.

EXPLORING PSYCHOLOGICAL TRAUMA AND IDENTITY IN ALICE WALKER'S *POSSESSING THE SECRET OF JOY*

D. Bavani and Sudha Rani. S

PG and Research Department of English, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu,
India

ABSTRACT

Alice Walker's "Possessing the Secret of Joy" explores psychological trauma and identity post-FGM, delving into memory, body disassociation, and self-integration. This study analyzes Tashi's quest for wholeness amid cultural oppression, using trauma theories and identity frameworks. It examines the broader socio-cultural impact of FGM on individual and collective identities. Walker, a Pulitzer Prize-winning author, intertwines themes of trauma, identity, and resilience. Through this exploration, the study enhances understanding of enduring trauma repercussions and the pursuit of self-discovery in adversity.

Keywords: Psychological trauma, identity, FGM, disassociation, cultural oppression, resilience.

Alice Walker is the first woman writer who took initiative to talk about female genital mutilation. She came to know about this practice of female genital circumcision when she went to Africa in 1965 during the filming of *The Color Purple*. There she came to know about the existence of such practices in society. When a photograph of a young black girl with a blank look in her eyes who had undergone this procedure was shown to her, she astonished. From that point she decided to publicize this issue worldwide and bring the real face of society. Her fifth novel *Possessing the Secret of Joy* turned out to be a masterpiece which tells us all about circumcision, all its negative consequences that woman faces throughout her life. Her main focus was upon the psychological trauma that women face after circumcision.

Female genital mutilation (FGM) is defined by many theorists as a harmful cultural practice involving the partial or total removal of the external female genitalia for non-medical reasons. This procedure is often performed on girls and women, impacting their physical, emotional, and psychological well-being. The World Health Organization categorizes FGM into four types, ranging from clitoridectomy to

infibulation, each representing different degrees of genital cutting. Writers and social activists contribute to the discourse on female genital mutilation (FGM). Notable figures include Nawal El Saadawi, Ayaan Hirsi Ali, and Efua Dorkenoo, who have discussed FGM in the context of gender oppression, cultural norms, and human rights.

Alice Walker relies upon sexual violence and verbal abuse on black people. She exhibits the utmost turmoil and disturbances created in America due to the Civil Rights Movement for the blacks, as they fought for their rights against white supremacy. It is very clear in the novels of African-American writers that black men have had to fight with racism and classicism, while black women have had to struggle with racism, classicism, sexism, language barrier within and outside the community, women are obliged to accept all the social conventions and cultural duties which are man-made and carried out since time immemorial.

In *Possessing the Secret of Joy*, culture plays a central role as Alice Walker explores the intricate dynamics of cultural traditions, particularly those related to female genital mutilation. The novel delves into the clash between Tashi's African heritage and the detrimental aspects of certain cultural practices. Walker navigates the complexities of cultural identity, shedding light on how traditions can both enrich and oppress individuals. The exploration of cultural nuances becomes a lens through which the character grapple with the consequences of deeply ingrained beliefs, raising questions about the preservation and transformation of cultural practices in the face of evolving perspectives.

The novel focuses about the suffering and the breaking of taboos. First, the novel's actions focus on the cultural rite of female circumcision. Second, the fictional world within which the African protagonist lives as an African American woman. In the name of tradition female circumcision is performed, a custom in which women's vagina is operated and tightened to make more enjoyable for men. The novel depicts the age-old practice of female genital mutilation. The protagonist as well as other women characters of the text face the problem of existence, self-dignity, and trauma where they are circumcised under the pressure of patriarchy.

Tashi the protagonist of the novel, undergoes psychological trauma. The whole story of the novel revolves around the black, tribal African girl who was first seen in the previous novel of the writer *The Color Purple*. Tashi in her childhood luckily escaped from circumcision and was married to an American man Adam and fled to the west, but her loyalty to the customs of her people led her to surrender

herself to this traditional practice. Her American self is Evelyn but her old identity as Tashi (Olinkian tribe girl) forces her to go back to get the stamp of her real identity, real Tashi. But she does not know about the consequences that she might have to face after this decision of her. She is so deep rooted in her tradition that she failed to realize what she wanted and what not. She not even thinks about her husband Adam who loved her madly. She somewhere feels that she is not a complete woman because she is not circumcised like other women in her tribe.

In Olinka tribe, circumcision is compulsory to become a part of that tribe. “Everyone knew that if a woman was not circumcised her unclean parts would grow so long they’d soon touch her thighs; she’d become masculine and arouse herself” (112-113). The Olinka women who are not circumcised are treated as unclean. There is also a myth that if a woman is not circumcised, her vaginal lips grows so long and would reach her thighs. In Olinka tribe even mothers force their daughters to get circumcision because circumcision is compulsory for marriage, no man in village is allowed to get married to a girl who is not circumcised. Some of them voluntarily surrender themselves because it is something that differentiated them from others. As Tashi says, “These marks gave me courage. I wanted such mark for myself” (23). Her faith in her culture and to carry that with her to America leads to her decision to submit to the tsunga’s knife and be genitally mutilated. This decision leads her life into darkness and goes mad with time.

This novel concentrates on the three women characters. Tashi, Ayesha and Amy Maxwell of three different races and ethnicities, who faced the ruckus of FGM. Tashi an African and later an African American and Ayesha of middle East decent and Amy Maxwell is European woman, who is forcefully subjugated to ritualistic female genital mutilation although that practice is not a part of her culture. Male from all the races and classes show off their masculinity by giving physical pain and aggression to women and children. Tashi belongs to Olinka tribe in a small village in Africa. It is the same village where Adam and Olivia, Celie’s children from the novel *The Color Purple* lives.

Though *Possessing the Secret of Joy* is not exactly the continuation of *The Color Purple*, still the prominent characters are taken from there. Adam and Olivia grow up with Tashi there having a sweet relation with her. In the beginning of the novel Tashi says, “I did not realize for a long time that was dead” (03). By telling the story of a Panda who has a co-wife, she initiated her story. Many a time Tashi tassels

between her country and her culture, as a woman and Tashi (herself). She always sees herself in terms of her country. Many times, she is neglected because of her skin colour and belongings. She belongs to that race, where for the women marriage is more important than life, education, career or anything else of the world. She feels a closer relation with her people, her tribe, her tradition and country. For this reason, she goes against her childhood friend Olivia and says “all I care about now is my people, you are a foreigner”. Further Tashi adds, “who are you and your people never to accept us as we are? Never to intimate any of our ways?” (21).

Tashi is in contact with Adam who is an educated man and who does not believe in cruel traditions like FGM. Initially Tashi does not believe in the action but when she deeply observes the pain and suffering of her people, how they were thrown away from their homes. So, Tashi decides to submit herself to the act voluntarily in spite of Olivia and Adam’s warning not to submit. When Tashi undergoes circumcision, not a single family member is available near her. But immediately after knowing the incident Adam comes back, marries and takes her to America in the hope of a new happy married life. But the trauma does not allow her to lead a happy life.

FGM causes many mental and physical problems inside her. Tashi faces the worst result of FGM. When she delivers a baby boy Benny who is mentally challenged the causes are only due to FGM. Gradually Tashi’s marital life is overshadowed by her ill mental and physical health caused due to circumcision she has undergone. Then Tashi wonders why women are forced to perform female genital mutilation and why it is a taboo in some societies to talk about to practice. All this incident never allows Tashi to forget her circumciser, M’Lissa who is known as Tsunga and then Tashi strongly blames her as the source of her difficulties. She decides to end her sufferings and pain of all the girls, women of the tribe by murdering M’Lissa. She also does what she decides and kills her when she gets an opportunity. Obviously after killing the most important person of the community she is trailed in the court. Despite all the struggles of her husband and sons to save her, she is finally executed.

“Tashi is convinced that the little girls who are dying, and the women too, are infected by the unwashed, unsterilized sharp stones, tin tops, bits of glass, rusty razors and grungy knives used by the *tsunga*” (235). She senses the need to be a savior of young women who undergo such pain. The violence in her raises to the

level where she wants to avenge the psychological manipulation thrust on her. Tashi decides to go to Olinka to kill the mother of circumcision called M'Lissa who propagates and advocates infibulation. Tashi slyly kills her with those same razors and blades which she had used to mutilate her and other women. M'Lissa presents her reasons that this act gives her livelihood and she further adds that she too has undergone the same pain and there was no one to save her. So, she feels happy for having been killed by Tashi as she believes the patriarchal dictum that it is a boon to be killed by the one she has infibulated. Tashi faces trial in Olinka for killing a national icon, who propagates patriarchy. By killing the tsunga, Tashi symbolically breaks the tradition that stood between her and wholeness. Tashi gets caught and faces trial and is sentenced to death but still she feels relaxed after killing M'Lissa, the symbol of patriarchy, sexism, Tashi gets relaxation from her hysteria and masochism to a great extent.

The severe clitoridectomy and infibulation are kept as tabooed secrets to help accentuate male rule and desire for the survival of patriarchy as an institution controlling many women like Tashi, Ayesha, Amy Maxwell on the physical, emotional and psychological fronts. Women are pitted and used like tools against women for spoiling the wellbeing and wholeness of one another. So M'Lissa tells Tashi, "I thought you were a fool . . . The very biggest" (227). Circumcision hurts not only the woman but also the child she may carry. Tashi's son, Benny Johnson is presented here as a mentally retarded boy which is the result of his brain being damaged during his birth. His birth procedure was complicated because of Tashi's infibulation. For American doctors and nurses, circumcision is strange and meaningless, so they are shocked to see a hole in Tashi's sexual organ. Both mother and the baby suffer from the side effects of circumcision until the end of their lives.

The deadly process of circumcision happens with Tashi which is the result of her insanity although everyone tried to make her stop from that procedure. The incident happened in her life when she was mature enough to understand the world and people but unfortunately without thinking anything just made herself ready for the operation. Without a second thought or any research she just thinks it is her own culture and goes for it, which is proven as insane. Olivia says, ". . . and anyway. She should have had it when she was eleven, if she was going to have it. She's too old for it now" (preface).

Tashi attempts to help other women and raise awareness among themselves. In that Olinka tribe women have no rights over their own body. From the conversion of Tashi and M'lissa it is clear that:

A proper woman must be cut and sewn to fit only her husband, whose pleasure depends on an opening, it might take months, even years, to enlarge men's love and enjoy the struggle, you said for the women . . . but you never said anything about the women, did you, M'Lissa? about the pleasure she might have, or the suffering. (208)

Tashi was taken to the psychiatrist by Adam for treatment. He shows her a video cassette which was taken in one of the African town some twenty-five years back. In that video, a girl lying on the ground is about to perform the ritual of Circumcision. In the video there is also a scene of cock fighting: "It walked about quite freely, crowing mighty and that was the only sound or movement" (69). Tashi experiences overwhelming fear and becomes senseless after watching the clips. She visualizes a hen not cock that is waiting near the hut to gulp the piece of meat thrown out after surgery. It is described as:

A chicken – a hen, not a cock – was scratching futilely in the dirt between the hut and the tree where the other girls, their own ordeal over, lay. M'Lissa lifted her foot and flung this small object in the direction of the hen, and she, as if waiting for this moment, rushed toward M'Lissa's upturned foot, located the flung object in the air and then on the ground, and in one quick movement of beak and neck, gobbled it down. (71)

When Tashi returns to her consciousness she starts drawing the picture of the frightening cock on the walls. She draws pictures of cock. The foot of the cock grows larger and larger it cannot be drawn on paper. When psychiatrist asks, is this a man's foot or of a woman's foot? She becomes confused. When she returns home, in the following night she paints pattern crazy road. Crisscross pattern of dots made by her village girl when she was a child. when she completed her painting she slept well. When in the next evening Mzee puts a question to her. "Are you better for having done it" (78). She replied positively without any hesitation. She starts crying and missing her sister Dura. Dura, her elder sister died as a result of excessive blood loss during circumcision. She painted last night, and it reminded her of all her past memories of her childhood. She started remembering when she and her sister Dura

played and hide in the Elephant fields, video clips helped her to realize her problem clearly.

“Psychic trauma involves intense personal suffering, but it also involves the recognition of realities that most of us have not begun to face” (Preface VII). When Dura died in her childhood, she did not cry that time because African custom declare women must not cry but now she mourns over her death. She wonders how M’Lissa women herself did so much cruelty to all the young girls of the village. She decided to murder M’Lissa who kills Dura in order to take her revenge she came back to Africa. She is ready to take risk of her life because she knew the fact that once she murdered her, all Olinkian tribe turned against her. In Olinkian tribe M’Lissa is worshipped as God. In the end of the Novel she finally killed M’Lissa the traditional Circumciser of the Olinkian village. She is ‘no more and satisfied’. By killing her she had completed the role of liberator, that actually means to her.

In this novel Tashi is both a martyr and winner. She is martyr because of circumcision on the other hand, she is winner because she saved many women’s life in Olinkian tribe by killing M’lissa. She was executed to breaking the silence of women’s lives in general and their circumcision in particular. At the end of the novel, women gather together to sing the song of union with Tashi. Tashi seems to be emerging as a martyr in her novel. She is executed for an essential cause, that might save millions in future. She is depicted as black heroes who had given their life in freedom struggle. Tashi states:

Dying now does not frighten me. The execution is to take place where this government has executed so many others, the soccer field. I will refuse the blindfold so that I can see all directions. I will concentrate on the beauty of one blue hill in the distance, and for me that tomorrow will be eternity. (262)

For an essential cause she had given her life so that million may save their future. When she was executed all her family members, close friends furled a huge banner with a slogan, “RESISTANCE IS THE SECRET OF JOY!” (264).

Alice Walker, also a black woman herself, faces many hardships and endless struggle throughout her life. For this reason, she always shows sisterly concern for all the women who face many hardships and problems. When she became familiar with Female genital mutilation, from that point she decided to help those sisters who are in danger of this cruel practice. Through the characterization of Tashi

in the novel *Possessing the Secret of Joy*, she forefronts this practice. Through the depiction of Tashi, she made a global fight against Female Genital circumcision. Her main focus in this novel is to show the trauma, pain and suffering Tashi faces in her whole life and that is also the story of millions of women who never got the chance to raise their voices. She came out as a mouth piece for all those women of the world and awaken them to fight for their rights because she believes that only through awareness and sisterly concern for each other, we can fight against all those evils in the society that hindered her progress. She ends her novel with a message that “RESISTANCE IS THE SECRET OF JOY!” (264).

References

Caruth, Cathy. *Trauma: Explorations in Memory*. Johns Hopkins University Press, 1995, PrefaceVII.

Walker, Alice. *Possessing the Secret of Joy*. Vintage, 1993.

---. *The Color Purple*. Warner Books, 1982, p.285.

HORRORS OF THE TROUBLES IN ANNA BURNS' *MILKMAN*

J. Elzi Jayaseeli

PG and Research Department of English, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu,
India

ABSTRACT

The novel analyses the story of a young women who lives in Northern Ireland during the Troubles. The danger surrounds her and yet the most dangerous situation which she faces is the rumour of her connection with a married man. The novel portrays the violent atmosphere of the Troubles and its trauma experienced by the individuals. The novel also portrays the middle sister's struggle to get herself out of this predicament imposed by milkman and her community. Much like her failure in avoiding milkman, the violent atmosphere of the Troubles finds a way to penetrate into the narrative despite the protagonist's attempts to avoid the outer reality by burying her head into the literature of the past centuries. The protagonist struggles to survive the communal oppression and physical and psychological violence at the time of the Troubles in the Northern Ireland.

Keywords: The Troubles, Community, Oppression, Gossip, Northern Ireland.

Literature of Northern Ireland includes literature written in Northern Ireland, and in that part of Ireland prior to 1922, as well as literature written by writers born in Northern Ireland. It includes literature in English, Irish and Ulster Scots. Northern Ireland is a country that comprises six counties of Ireland, while still holding a place in the United Kingdom. Due to the country's unique political background, the history of Northern Irish literature is very different to its southern counterparts. This difference is reflected in the works of contemporary Northern Irish writers. Some of the famous Northern Irish writers are John Hewitt, Heaney, Brian Friel, and Louis MacNeice.

Anna Burns is a Belfast born Northern Irish writer, and the author of three novels, *No Bones* (2001), *Little Constructions* (2007) and *Milkman* (2018), and one novella, *Mostly Hero* (2014). *Milkman*, in addition to winning the Man Booker Prize in 2018, won the National Books Critics Circle Award for fiction in 2018, the Orwell

Prize for political fiction in 2020, and the International Dublin Literary Award in 2020.

Narratives around the Troubles are at the centre of Northern Irish Literature. The conflict, which lasted from 1968 to 1998, affected all aspects of Northern Irish culture. This was then reflected in the literature that the country produced at this time, is known as Trouble Narratives. These narratives focused on many different aspects of the conflict which includes the place of women and men masculinity, themes of violence and class distinctions. Not all of the literature produced in Northern Ireland during this period focused on the Troubles.

Milkman is a novel written by Burns and was published in 2018. Set in an unnamed city during the Troubles in Northern Ireland, the book follows an unnamed protagonist, known as ‘Middle Sister,’ as she navigates the challenges and complexities of her community. The story takes place in the 1970s, against the backdrop of political unrest and violence. The protagonist, an eighteen year old girl, lives in a tightly knit and deeply divided society. She is referred to as ‘Middle Sister’ because she has an older sister, ‘First Sister,’ and a younger sister, ‘Wee Sisters.’ Middle Sister is an intelligent and bookish individual who deviates from the norms of her community. She loves reading which sets her apart and makes her a target for gossip and suspicion.

One day, while reading a book in the park, Middle Sister encounters a mysterious man, known as ‘Milkman’ who is significantly older than her. Milkman is a high ranking member of a paramilitary organisation, and rumors about his involvement with under age girls spread through the community. Although Middle Sister is not interested in him romantically, their interactions spark rumours and speculation. As the story progresses, Middle Sister becomes the subject of gossip and scrutiny. She becomes a target of unwelcome attention and advances from both Milkman and other members of the community. The societal pressure to conform to the expectations of her community and the constant threat of violence forces Middle Sister into a state of fear and paranoia.

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violence and class distinctions. Not all of the literature produced in Northern Ireland during this period focused on the Troubles.

Burns' novel begins with a flashforward scene that brings the story to a conclusion: "The day Somebody McSomebody put a gun to my breast and called me a cat and threatened to shoot me was the same day the milkman died" (1). The rest of the novel is built in a manner that leads to this moment. After this scene, the narrator begins to tell how a man named Milkman walks into her life and disrupts its balance. Not an actual milkman, but a forty one year old Republican paramilitary who is also married, Milkman sets eyes on the protagonist, the middle sister, during her daily walks, and starts to stalk her, crossing her path unexpectedly, menacing and frightening her.

Already a subject of gossip in her neighbourhood for her reading while walking activity, the middle sister is immediately stigmatised by the community as Milkman's paramour and accused and plied by her family members without being able to defend herself. Cornered by the psychological harassment of both Milkman and her community, the middle sister finds herself in a predicament which she strives to ignore and avoid by taking up with her maybe boyfriend, reading and jogging. However, Milkman manages to penetrate into every part of her life, including these activities.

The novel portrays the middle sister's struggle to get herself out of this predicament imposed by Milkman and her community. Much like her failure in avoiding Milkman, the violent atmosphere of the Troubles finds a way to infiltrate into the narrative despite the protagonist's attempts to avoid the outer reality by burying her head into the literature of the past centuries. As Costello-Sullivan argues, the Irish novels written in the twenty first century

emphasize not only the representation of personal or cultural trauma but also the act of representation itself and the *curative* power of such representation. This narrative engagement with the process of narrativizing mimics the healing function of testimony as awareness of the process of telling empowers the trauma victim to author his or her own life story. (22-23)

The protagonist's attempts to avoid the world surrounding her by reading anything that is not of the twentieth century content do not spare her from the touch of the outer world. Violence is a reality of her society that is impossible to turn a

blind eye to. Having an opinion about the conflicts despite her intentional indifference, the middle sister is quite aware of her position as a resident of a Republican dominated district.

The fear instilled by both political forces into the lives of the people causes a sense of paranoia, leading the people to operate self-censorship in their behaviours and monitor and police each other in order to assure the so-called safety of the community. As Quinn also suggests, “The enemy itself is basically absent from the story: It only manifests as the click of surveillance cameras. Instead, we watch a community mutilate itself from the inside” (9). Indeed, the camera located in the park where the middle sister goes jogging monitors the passers and takes their picture, imposing the sense of continuous surveillance on the people even in the physical absence of the state. Therefore, the state controls the community, or evokes the sense of its control, in order to establish and sustain its power over them.

Accordingly, the presence of the state forces and that of the paramilitary is replaced by the community’s adoption of self censure and policing as a result of this paranoia. The violent acts practised by the British state and the Irish paramilitary forces are recounted by the protagonist, such as the state soldiers’ killing the neighbourhood dogs, the state’s accidental shootings of innocent civilians mistaking them for Milkman, or the paramilitaries’ plundering the neighbourhood houses in the name of the cause, yet, the act of violence, physical or psychological, is mostly portrayed through the very individuals of the community.

This practice of violence is most evidently observed in the conflict between the middle sister and her community, displaying how oppression, in the form of psychological violence, dictates normality, punishes, and gradually isolates the individual. As Miller also pinpoints, “the conflict that most preoccupies this novel flares not between republicans and royalists or between Catholics and Protestants ...but between the girl and her community” (2).

It seems that only the middle sister is aware of this unusual attitude of the community towards what is normal and what is not. Considering the general atmosphere of the novel, nonetheless, it can be argued that the world presented in *Milkman* is quite topsy-turvy in a way that it portrays a community where normal is abnormal, and abnormal normal. In accordance with its understanding of normality, the community tries to ‘fix’ the middle sister, since her abnormal reading while walking is unacceptable.

Milkman's function in the novel is to represent the general sense of menace in the society. He is, in fact, the very embodiment of the horror of the Troubles, power abuse, and patriarchy in the Northern Irish society. The menace he invokes operates the same way as the state forces do. Although it is stated that he is a killer, his true impact on the protagonist is not constructed through physical violence, but a psychological one. Without displaying any physical act of violence, the presence, or even the absence of Milkman meddles with the middle sister's state of mind, leading her to isolation and paranoia, thus threatening her existence in the society.

The protagonist is well aware of the society's mindset on sexual harassment. It simply prefers to ignore it, or merely gossip about it. The community itself through gossip, like Milkman's stalking and the state's photographing, disrupts her mental balance, tries to control her, and eventually exiles her into isolation. Therefore, in a community where violence is normalised, humanity forgotten, and morality corrupted, the victims of the oppression are 'naturally' ignored or punished.

The women are put into the same categorisation as the tablets girl. However, unlike the tablets girl, they are considered as a serious threat to the community not only by men, but by women as well. This fear of being different or having a different individual in the society is ingrained in everyone in the novel, including the protagonist, who is terrified of being labelled as beyond the pale, avoids the issue women, or ignores the fact that her father was raped as a child. Not only women, in this regard, but all individuals who do not conform with the society's understanding of normality and commonness are ignored and exiled.

The chef, who loves cooking and is secretly gay, is othered and considered as beyond the pale by the neighbours. The maybe boyfriend, who is also homosexual, struggles to be an accepted member of the community and not to be alienated like the chef by dating the middle sister. The protagonist's father, damaged by the childhood trauma of repeated abuse, and possibly silenced and ignored by the community, is drawn into depression and eventually dies.

The protagonist discovers this phenomenon when she finds out that her mother has always loved the real milkman, another beyond the pale character who is actually a milkman, and whose normality is deemed abnormal and who isolates himself from the community. The novel portrays the middle sister as the most conscious character in the novel about her surrounding and the abnormality of the mindset and functioning of the community, hence, the changes in her life carries

significance both for her and the gist of the novel. She finds out that her maybe boyfriend is gay, which provides her with an epiphanic moment: “The truth was dawning on me of how terrifying it was not to be numb, but to be aware, to have facts, retain facts, be present, be adult” (294). This sudden realisation of the outer reality eliminates the indifference and numbness that prevailed her disposition almost throughout the novel.

Although she surrenders to Milkman on the way home by getting in his van, this sense of despair is soon replaced by relief with the news of Milkman’s death, which causes the protagonist to realise her predicament now that the threat is expelled from her life: “while standing in our kitchen digesting this bit of consequence, that I came to understand how much I’d been closed down, how much I’d been thwarted into a carefully constructed nothingness by that man. Also by the community, by the very mental atmosphere, that minutiae of invasion” (303).

Now fully aware of the condition she has been put through by Milkman, the middle sister evolves into a more mature and self-confident individual, having survived the abuses of Milkman, the community’s gossip, the tablets girl’s poisoning, and McSomebody’s assault. Recovering the countless adversities and attacks, the middle sister comes out alive and strong, preserving her individuality. Parallel with this maturation, the end of the novel is brought with a female solidarity formed among the middle sister, her mother, and her sisters.

By encouraging her mother to let go of the burden of ‘wrong spouse’ phenomenon, reject her preordained despair, and go after the real milkman, and by reconciling with her eldest sister without causing tension, the middle sister also releases herself from her conflict with the community, since the community oppression is mostly operated by her mother and eldest sister throughout the novel. Therefore, the dark tone that prevails the whole novel begins to shatter at the end with the dancing of the wee sisters, the shared moments and feelings among women, and the resumption of the jogging.

In the novel, the trauma that the middle sister suffers due to the oppression and psychological violence on the part of the community she lives in is the same trauma that the country itself endures due to both physical and psychological repercussions of the Troubles. However, Burns does not settle for merely demonstrating the trauma in question; she also embellishes her narrative with the potential of a recovery by making reconciliation and hope for the future possible for

her characters. Once the threat becomes too real to ignore as she gets poisoned by the tablets girl, menaced by Somebody McSomebody with a knife, and terrorised by Milkman one last time, the middle sister understands how extremely she was subdued and forced to give up on her individuality. With Milkman's death, she confronts her true oppressor, the community, by refusing to succumb to its constraint.

Burns' *Milkman* portrays the trauma caused by oppression in an individual context, it displays a similar struggle with trauma and oppression in a wider scope, implicitly dealing with the condition of Northern Ireland in the time of the Troubles, and thereby the novel also puts forward a process of confrontation and healing for the country through the middle sister's story.

Works Cited

Burns, Anna. *Milkman*. Faber and Faber Limited, 2018.

Costello-Sullivan, Kathleen. *Trauma and Recovery in the Twentieth-First-Century Irish Novel*. Syracuse UP, 2018.

Quinn, Annalisa. "Brutally Intelligent Milkman Depicts Lives Cramped by Fear." *NPR*, 4 Dec. 2018.

Miller, Laura. "A Novel About Coming of Age Amid the Troubles." *The New Yorker*, 3 Dec. 2018.

DANGERS OF COMPLACENCY IN MARGARET ATWOOD'S THE HANDMAID'S TALE

R. Emima

PG and Research Department of English, St. Mary's College (Autonomous),
Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India

ABSTRACT

Margaret Eleanor Atwood the Canadian poet, novelist, literary critic, essayist, teacher, environmental activist, and inventor is best known for her prose fiction and feminist perceptions. Her works encompass a variety of themes including gender and identity, religion and myth, the power of language, climate change, and power politics. Her works delve into issues such as the subordination of women in male dominated societies, the complexities of gender and sexuality, and the loss of female identity within the institution of marriage. *The Handmaid's Tale* serves as a powerful critique of patriarchal systems, exploring themes of oppression, autonomy, and the resilience of the human spirit. The article entitled Dangers of complacency in Margaret Atwood's *The Handmaid's Tale* highlights the perils of passivity in the face of despotism and emphasizes the importance of resistance and awareness while sounding a warning against the risks of allowing complacency to accept and maintain repressive institutions.

Keywords: Complacency, Misogyny, dystopia, slaves.

The novel explores themes of powerless women in a patriarchal society, loss of female agency and individuality, suppression of women's reproductive rights, and the various means by which women resist and try to gain individuality and independence. The title echoes the component parts of Geoffrey Chaucer's *The Canterbury Tales*, which is a series of connected stories (such as *The Merchant's Tale* and *The Parson's Tale*). It also alludes to the tradition of fairy tales where the central character tells her story. The message of *The Handmaid's Tale* is that political control of women's bodies and reproduction is wrong. This is communicated through examples of objectification and violence against women.

The novel also investigates the consequences of a society built on misogyny, where women are reduced to their reproductive functions and denied agency. Offred's struggle to maintain her identity, find a sense of autonomy, and resist the oppressive regime forms the central narrative of the novel. Through her eyes, readers witness the horrors of a society where misogyny is institutionalized and enforced by the state.

The Handmaid's Tale is an exposure of power politics where women are worst off because they are valued only as child-breeders in a society threatened with extinction due to pollution, AIDS and natural disasters, the national birth-rate has fallen to a catastrophically low level. This essentialist definition of women as “two legged wombs” (176) works entirely in the interests of a patriarchal elite, denying women any freedom of sexual choice or lifestyle. Most men are also oppressed in that society: there are male bodies hanging every day on the Wall. Male sexual activity is severely restricted as well.

A handmaid is a woman who serves as a surrogate mother in a dystopian society where fertility is rare and highly valued. Handmaids are subjected to strict control and surveillance, and their sole purpose is to bear children for the ruling class. They are stripped of their names and identities and are treated as property. The word ‘tale’ typically refers to a story or narrative. In this context, it signifies that the novel is a narrative, a story told from the perspective of the handmaid, giving voice to her experiences, struggles, and the oppressive world in which she lives.

As Howells says, “Atwood’s feminism concerns are plain here, but so are her concerns for basic human rights” (Howells 3). In the novel complacency manifests in various forms, reflecting both the oppressed and the oppressors within the dystopian society of Gilead. Many characters in Gilead, particular among the Handmaids, Marthas, and other subjugated groups, exhibit a sense of resigned acceptance to their circumstances. Despite the oppressive regime, they often conform to the establish norms and rituals out of fear or a belief that resistance is futile. The complacency allows the regime to maintain control over their lives without significant challenges. On the other hand, those in positions of power and privilege within Gilead's hierarchy may also display complacency. The Commanders and their wives, benefit from the system's patriarchal structure and may choose to turn a blind eye to its injustices. Their complacency perpetuates the regime's authority and reinforces the status quo.

A perceptive reading of Atwood's novels shows that as a Canadian writer she is not limited by any regional or geographical boundaries. She has presented her feminist perspectives elaborately in her novels. Atwood has created horrifying bleak and disoriented psychic and moral world of Gilead to make readers experience how this dystopia can be considered as a code for the colonized and enslaved state. The characters created in this novel are more terrifying and alienated than that of other female characters created by Atwood. The protagonist compares her life to that of pigs cooped up in Pens, rolling coloured balls around in order "to have something to think about I wish I had a pig ball" (86).

According to Atwood the most lethal weapon in the world's arsenals is not the neutron bomb or chemical warfare, but the human mind. In Gilead, personal identity is determined by functions and especially gender functions. To be a person is to inhabit one of the functions and the differences between people are given hierarchical depending upon their function in the society. Male infertility in Gilead is unthinkable as the protagonist says: "there are only women who are fruitful and women who are barren, that's the law" (75).

Atwood narrates women in the dystopian society of Gilead as subjugated, oppressed, and stripped of their rights. Gilead is a theocratic regime that has overthrown the United States government, establishing a totalitarian patriarchy where women are assigned rigid roles based on their fertility and perceived moral standing. At the top of the hierarchy are the Wives, who are married to high-ranking official and symbolize the ideal of traditional femininity: obedient, submissive, and loyal to their husbands. They are often wealthy and privileged, benefiting from the system's power structure but still subject to its constraints. Beneath them are the Marthas, domestic servants responsible for household chores and maintaining the daily functioning of Gilead's households. Their role is largely invisible, and they are expected to be efficient and unobtrusive.

The Handmaids, however, occupy the most precarious position in Gilead. They are fertile women who are forcibly assigned to elite men, known as Commanders, for the purpose of bearing children. Their identities are stripped away, and they are renamed according to the names of their assigned Commanders, such as Offred (Of Fred). Handmaids are subject to strict regulations, constant surveillance,

and ritualized rape in the form of the ceremony, where they are expected to conceive children for their Commanders and their Wives. They are essentially reduced to mere vessels for reproduction, denied autonomy over their bodies and lives. Another group of women in Gilead are the Aunts, who are tasked with indoctrinating and overseeing other women, including the Handmaids. They enforce the rules of Gilead, perpetuate its ideology, and punish those who resist or deviate from the established order. Despite being women themselves, the Aunts serve as enforcers of patriarchal oppression, complicit in the subjugation of their fellow women.

Throughout the novel, Atwood depicts the experiences of women in Gilead as harrowing and dehumanizing. They are denied agency, autonomy, and basic human rights, reduced to mere objects of male control and manipulation. However, despite the oppressive regime, Atwood also portrays moments of resistance and resilience among some women, highlighting the enduring spirit of defiance in the face of tyranny. Women in Gilead are relegated to subservient roles, subjected to systemic misogyny, and deprived of their fundamental rights. Atwood's portrayal of their experiences serves as a powerful commentary on gender oppression, the dangers of religious extremism, and the resilience of the human spirit in the face of oppression. The title illuminates a dystopian realm where patriarchal dominance has plunged society into the abyss of oppression and gender subjugation. Through Gilead's lens, Atwood unveils the harrowing repercussions of unbridled authority and the corrosion of fundamental liberties.

At its core, the narrative unveils the stark imbalance of power, particularly evident in the plight of women who are reduced to mere reproductive vessels. Gilead's regime, built upon religious dogma and pseudo-scientific assertions, underscores the perilous fusion of ideology and control, reminiscent of historical misogyny. The relegation of women to subservient roles, epitomized by the Handmaids, reflects the systemic dehumanization and objectification ingrained in the society's fabric. Amidst the darkness, Atwood weaves threads of resistance and resilience, embodied by characters like Offred. Through her lens, readers witness the psychological toll of oppression and the enduring struggle for autonomy. Offred's journey serves as a poignant reminder of human fortitude in the face of adversity, urging reflection on the fragility of freedom and the imperative of vigilance against tyranny. In essence, *The Handmaid's Tale* stands as a powerful testament to the perils

of unchecked authority and the indomitable spirit that persists even in the bleakest of landscapes. Through its chilling portrayal of Gilead, Atwood compels readers to confront the dire consequences of complacency and the imperative of safeguarding basic human rights. The novel portrays a dystopian society, Gilead, where women are brutally oppressed and stripped of their freedoms. Set in a totalitarian regime that arose due to declining birth rates, Gilead controls women's bodies and roles with extreme measures, relegating them to roles such as Handmaids, Marthas, Aunts, and Wives. These roles are strictly defined, and any deviation is met with severe punishment.

Atwood's depiction of Gilead serves as a warning about the dangers of authoritarianism and the corrosion of basic human rights. The novel's thought provoking themes and chilling portrayal of a dystopian future make it a compelling and timely read, prompting readers to reflect on the direction of society and the importance of resisting oppressive regimes. Women in Gilead are reduced to their reproductive functions and treated as mere vessels for childbirth. They have no autonomy over their bodies, as seen in the degrading Ceremony where Handmaids are forced to have sex with their Commanders while the Wives watch. This systematic control extends to all aspects of women's lives, including their relationships, education, and even their thoughts. Despite the oppression, many women in Gilead comply with the regime either out of fear or because they find some semblance of power or comfort within the system. Even those who resist, like Moira, often face insurmountable challenges. The novel highlights the complexities of resistance and complicity, questioning where the line between the two lies.

Through the protagonist Offred, Atwood explores themes of identity, agency, and resilience. Like other Handmaids, Offred is stripped of her name and individuality, reduced to a mere function for the state. However, she finds small acts of resistance in her narration and memories, reclaiming some semblance of autonomy. The novel also delves into the dynamics between women, showing how the patriarchy pits them against each other. Even within the household, there is tension between the Wives and Handmaids, reflecting the power struggles inherent in Gilead's society.

Overall, *The Handmaid's Tale* serves as a powerful critique of patriarchal oppression and the dangers of totalitarianism. It warns against complacency and underscores the importance of solidarity and resistance in the face of injustice. Through its vivid portrayal of a dystopian future, the novel challenges readers to reflect on the value of freedom, autonomy, and human dignity. Atwood skilfully uses various literary devices to convey the dystopian nature of Gilead, including oppressive language, discriminatory social hierarchy, and the suppression of individual freedoms. Through Offred's experiences, readers witness the horrors of a society where misogyny is institutionalized and enforced by the state. The novel also explores the complicity of the characters who choose to comply with the regime rather than rebel against it. Offred herself struggles with her role in this oppressive society, grappling with feelings of fear, resentment, and ultimately acceptance. It utilizes language as a potent tool to explore power dynamics and societal control. Atwood employs various literary techniques to critique the manipulation of language by the ruling regime in Gilead. Through metalinguistic play, she exposes how language is used to impose ideology and maintain authority. Debrah Raschke, in her article, "Margaret Atwood's *The Handmaid's Tale*: False Borders and Subtle Subversions," identifies the language and "how language systems formulate how we think" (257). Raschke recognizes three language structures present in the novel: the Gilead system, the narrator's system, and the academic rhetoric of the novel's closing 'Historical Notes'. Raschke examines these language systems as instruments of control.

Language is a tool of complacency in Gilead. The regime manipulates language to shape and control thought, limiting the vocabulary and expressions available to its citizens. This linguistic complacency contributes to the normalization of oppression and restricts critical thinking or dissent. The novel's loose narrative structure, characterized by flashbacks and repetitions, underscores the complexity of time and adds depth to the exploration of societal decay. The contrast between the past and present highlights the extent to which Gilead has usurped power and reshaped reality through linguistic manipulation. Central to the narrative is the theme of naming and renaming, symbolizing the loss of identity and autonomy under the oppressive regime. Handmaids are stripped of their individuality and reduced to mere vessels for procreation, their names reflecting ownership by their commanders.

Euphemisms further obscure the brutal reality of their existence, reinforcing the regime's control over language. Through metaphorical language and visual imagery, Atwood depicts Offred's negotiation of power through her body, revealing both her agency and subjugation within the patriarchal hierarchy. Offred's use of language, particularly in her diary entries, becomes an act of resistance, a means of preserving her identity and challenging societal norms. The totalitarian regime in Gilead enforces strict control over language, relegating certain words and expressions while promoting its own ideological discourse. Illiteracy is enforced to maintain power differentials, as those who control language wield authority. Offred's defiance through language represents a subtle yet potent form of resistance against oppressive systems.

Overall, complacency in *The Handmaid's Tale* reflects the ways in which individuals adapt to and internalize oppressive systems, either through submission or apathy. It highlights the challenges of resistance in a society where dissent is punished severely and underscores the importance of vigilance and activism in the face of tyranny. In conclusion, *The Handmaid's Tale* serves as a poignant social commentary on gender inequality, authoritarianism, and the power of language. Through intricate narrative devices and linguistic analysis, Atwood exposes the mechanisms of control and resistance in a dystopian society, urging readers to interrogate the role of language in shaping power dynamics and societal norms.

Works Cited

1. Atwood, Margaret. *The Handmaid's Tale*. Virago Press, 1987.
 2. Debrah, Raschke. Margaret Atwood's *The Handmaid's Tale*: False Borders and Subtle Subversions, *Literature Interpretation Theory*, 1995, <https://www.tandfonline.com/toc/glit20/6/3-4?nav=tocList>
- Howells, Coral Ann. Margaret Atwood's Dystopian Visions: *The Handmaid's Tale* and *Oryx and Crake*. The Cambridge Companion to Margaret Atwood. Cambridge UP, 2006.