

# IJFAR

**International Journal Of  
Fundamental & Applied Research**



# Editorial Board

Editor-in-Chief

Dr. D.R. Tiwari

[editor.ijfar@gmail.com](mailto:editor.ijfar@gmail.com), [editor@ijfar.org](mailto:editor@ijfar.org)

## Editorial Cum Advisory Board

<p>Alex Afouxenidis <b>Professor</b> National Center for Social Research Athens, Greece</p>	<p>Prof. (Dr.) Jason L. Powell <b>Professor</b> University of Central Lancashire UK</p>
<p>Prof. Jozef Drabowicz <b>Professor</b> Center of Molecular &amp; Macromolecular Studies, Polish Academy of Sciences, Sienkiewicza 112, 90-363 LODZ, Poland</p>	<p>Prof. Ismael Saadoune <b>Professor</b> Universite Cadi Ayyad, Faculte des Sciences at Techniques Maraktech Laboratoire do chimie des materiaux et de l' Environment BP 549, Marakech, MAROC</p>
<p>Dr. Fardoon Jawad Admed <b>Professor</b> Professor Of Molecular Cell Biology, Department of Pathology, King Edward Medical university, Lahore, Pakistan</p>	<p>Dr. Neelam Gupta National Bureu of Animal Genetic Resources India</p>
<p>Dr. Vinod Singh Microbiology Department Barkatullah University, Bhopal</p>	<p>Dr. Mona Purohit Department of Legal Studies &amp; Research, Barkatullah University.</p>
<p>Dr. Charu P. Pant Department of Geology, Kumau University, Nainital</p>	<p>Dr. Pramendra Dev <b>Professor &amp; Head</b> School Of Studies In Earth Science, Vikram university, Ujjain MP, India</p>
<p>Prof. J. P. Shrivastav Department of Geology, University Of Delhi, India.</p>	<p>Dr. L. P. Chourasia <b>Professor &amp; Head</b> Department of Applied Geology, Dr. Hari Singh Gour University, Sagar, M.P. India</p>

Dr. PiyushVerma NITTTR, Bhopal	Dr. K. S. Tiwari Bhopal,MP, India
Anil Shukla Deputy Secretary NCTE, Ministry of HRD, Govt. Of India	Prof. Santosh Kumar Former Vice Chancellor Dr. H S Gour University Sagar.
Executive Editor & Owner Dr. ShashiTiwari. Circulation Manager EshaRajeTiwari	
ASSOCIATE EDITORS	
Dr. AbhaSwaroop,	Dr. AlokRastogi
Dr. SantoshBhargava	Dr. Praveen Jain
Dr. KailashTyagi	Dr. H. C. Kataria
Dr. J. S. Chouhan	Dr. PawanPandit
Dr. J. P. Shukla	Dr. U. C. Pandey Regional Director IGNOU, Bhopal.

## Content

<b>S No</b>	<b>Title</b>	<b>Authors</b>	<b>Page No</b>
1	A case of India and Iran, Political relationship since Gulf war to 2001	Mushtaq Ahmad Ganai , A. P Pandey	1-4
2	Gender Discrimination: A Study with Special Reference to Untouchable and Two Leaves and a Bud	GH MUSTAFA MIR	5-9
3	Evolution of Properties of Concrete Using bamboo pieces as partial replacement for Coarse Aggregate for M 20 grade of concrete	Deepak Kumar Tiwari , Professor Anil Kumar Saxena	10-16
4	Evolution of Properties Of Concrete Using bamboo pieces as partial replacement for Coarse Aggregate for M 25 grade of concrete	Deepak Kumar Tiwari , Professor Anil Kumar Saxena	17-24
5	TOXICITY DETERMINATION OF DETERGENT (TIDE) AND ITS EFFECTS ON THE MORPHOLOGY AND BEHAVIOUR OF <i>CLARIUS BATRACHUS</i>	B. Kalita, K.C. Bhuyan, D. Kusre, A.Q.Osmani	25-28
6	Impact of Personality on the purchasing behavior of FMCG products in MP	Sunil Kumar Agrawal	29-33
7	Attitude impact on the buying behaviour of FMCG in Madhya Pradesh	Sunil Kumar Agrawal	34-45

## A case of India and Iran, Political relationship since Gulf war to 2001

Mushtaq Ahmad Ganai <sup>1</sup>, A. P Pandey <sup>2</sup>

1 Ph.D. Scholar in Faculty of Social Science,

Department of Political Science,

Barkatullah University Bhopal

2 Assistant Professor government arts and commerce college, Bhopal

### ABSTRACT

Encouraging national interest is the basic objective of foreign policy. From this view point, this paper tries to analyze the India's role in making political relations good with all over the world especially with the Middle East and more specially with Iran. Indo –Iran relations have an evidences of centuries back marked by meaningful interactions. These two Countries share a border till 1947, and they share some common features in their Language, Culture and Traditions. Both regions of South Asia and the Persian Gulf have Powerful political Commercial, Cultural, Energy and people to people links. After independence, India and Iran established diplomatic relations on March 1950. Currently India has two Consulates in Iran, Bandar Abbas and Zahedan. Shah of Iran visited India in March 1956 and also Prime Minister Jawaharlal Nehru visited Iran in September 1959. Prime Minister Smt. Indira Gandhi visited Iran in April 1974 and Prime Minister Shri Moraji Desai visited Iran in June 1977 and again Shah of Iran visited India in February 1978. India was always trying to remain close to the Arab region, and especially with the Gulf, significantly contributing India's energy requirements, India has always favored a broad-based engagement with the West Asian countries to foster both economic and strategic interests. These two countries made some high level visits to each other's country for the promotion, development and improvement of their political, economic, and commercial relations.

*Key words: bilateral, cultural, Economic relations, Iran, India, high level delegation visits, energy national interest.*

### OBJECTIVES OF THE STUDY

- To study the political relationship between India and Iran since Gulf war to 2001.
- To study the high level visits between these two countries.

#### Methodology

For the purpose of study both published and unpublished Primary and Secondary data has been utilized and is collected from various journals, newspapers, books and from internet

#### Political relations:

After the Iranian Revolution of 1979, Iran withdrew from the Baghdad Pact and started looking toward South Asia and East Asia for fulfilling its Economic and Strategic necessities.<sup>1</sup> The Tehran Declaration

signed in 2001 laid the foundation of Strategic relations between India and Iran, the Delhi Declaration of 2003 galvanized the bilateral Military relations in the areas of Sea-lane control and Joint Naval exercises, among others (Mosavi, 2011).

New chapter of relations were opened up after the Iranian Revolution in 1979 between these two Countries. Least interactions had been seen between India and Iran during the Gulf war period. This period was remained as a stress and strain between these two countries. No visits were paid between these two countries as the overall relations were smooth, calm and cool because of Iran, Iraq war on September 22, 1980 to 1988. The then President of Iran Bani-Sadr, said "India could play an important

role in protecting Afghanistan from foreign invasion".<sup>2</sup> Iran's dire need and necessity compel her to turn towards India for its political support to challenge Super Power influence in the region as well as Economic Sanctions by the West. The then foreign Minister of Iran, Dr. Ali Akbar Velayati highlighted that the "*Stability and peace in region is only possible with the strengthening of political relations between India and Iran and It would lead to Super Power Influence out of this*".<sup>3</sup>

### **Indo - Iran relations since 1980.**

A high level delegation under the leadership of Iranian Commerce Minister, Reza Sadr paid a visit to India in the month of June 1980. He said "*Iran had chosen to send the delegation to India not by accident but by design*". This high level delegation was along with 7 Deputy Ministers visited certain Industrial Units, Manufacturing Tractors, Diesel Engines and Electronic Motors<sup>4</sup>.

Iran's Deputy Minister of Mines and Industries said that "*the delegation was looking around for new source of supply for components and raw materials. It would also welcome technical Know-how for setting up small scale Industries*"

From 18 to 22 July 1983, the then Prime Minister of India P.V Narasimha Rao visited Iran and highlighted "*the great achievements of the past should make us humble and little aware of our responsibilities to ourselves today and to our history. We have to build on the sound foundation laid by the previous generations*"<sup>5</sup>. He was along with high level delegation including Secretary in the Ministry of External Affairs K. Natwar Singh and also other officials of the Ministry and the officials of the Ministers of Information and Broadcasting, Steel and Mines, Finance, Commerce, Education, Culture and Industry. Indian Prime Minister met with Leader of the Islamic Revolution Ayatollah Syed Ali Khamenei, the President of Iran Mir Hassan Mosavi, the Prime Minister Hashmi Rafsanjani the Speaker of the Majlis Asgarowaladi, and the Minister of Commerce and Minister of other industry Behzad Nabavi.<sup>6</sup> These leaders discussed and emphasized on their anti-Imperialist and anti-Colonist freedom struggles.<sup>7</sup>

Again in 1984, Deputy Foreign Minister of Iran Sheikh-ul-Islam visited India. He stressed that better Commercial and Economic Relations between the

two countries would contribute to Economic independence of India and Iran, and it was Iran's policy to purchase as much as possible from India.<sup>8</sup>

On 7 January 1985, an Agreement was concluded between these 2 countries. In addition to this, India would assist Iran to accelerate the area of Co-operation in various fields including setting up of Job Intensive Rural Industries, Textile and Agricultural Implement factories and Satellite Communication. The stress was on Industrial Co-operation. Also the Commission agreed to set up Joint Ventures in the 2 Countries to tap their Domestic and International markets.<sup>9</sup>

Again in 1986 the Foreign Minister of Iran Dr. Velayati along with high level delegation visited India for the third time, both sides agreed that these two countries would help each other in the fields of Power, Steel, Transport, Telecommunication and railways.<sup>10</sup>

In December 1987, Minister for heavy Industry Behzad Nabavi of Iran along with high level Iranian Industrial delegation visited India and met Union Minister for Industry J. Vangal Rao and Finance Minister Narayan Dutt Tiwari.<sup>11</sup> A Memorandum of Understanding was signed between these two Countries on Industrial Co-operation, Transaction Research and Training, Transfer of Technology and supply of Equipment and Machinery, Consultancy and Technical Services, and in the fields of Machine Building, Diesel Engine Manufacturing, and Equipment for Refineries, Power Plant, Cement and Sugar were taken under consideration and agreed for mutual Co-operation. Also they discussed on Public and Private sector areas like Automobiles and Components, Machine tools, Power Engines, Castings, Forging and Foundry items.<sup>12</sup>

A Memorandum of Understanding was signed in September 1989 on Consular and Visa related issues between External Affairs Joint Secretary Naresh Dayal and Iranian Ambassador Ibrahim Rahimpur.<sup>13</sup>

Leader of the Islamic Revolution Ayatollah Syed Rohullah Khomeini died on 3 June 1989, on his death Prime Minister of India Rajiv Gandhi stated "*Iran lost a Spiritual leader of the magnetism and charisma, Imam Khomeini was a revolutionary of great eminence and of great conviction. It is a grievous loss for the people of Iran and is shared by the people of*

India. Imam Khomeini extolled the high values of Islam. He exemplified the Shiite ethics of self-denial. He protested against the rampant Westernization and materialism, which have destroyed traditional values. The outpouring grief at the passing away of Imam Khomeini is measures of the stature and the affection and the devotion that his countrymen gave him. In Khomeini's place in history is assured.<sup>14</sup>

Gulf war was started on 2<sup>nd</sup> August 1990 with the invasion of Iraqi army on Kuwait under the cruel Dictatorship of Saddam Hussain and this war came to be known as Gulf War, and the war would be declared over by 28<sup>th</sup> February 1991, also its bad consequences on economy in the Middle East have very harsh effects

The relations of both these Countries warmed when the rise of Taliban in Afghanistan began its gradual dominance in Afghan politics in early 1990s. This common challenge of Islamic fundamentalism in Afghanistan and Pakistan brought India and Iran close to each other and persuaded them on improving mutual relations. This challenge led to a series of high level visits between India and Iran. In November 1992, the then Foreign Minister of Iran Ali Akbar Velayati visited New Delhi. After that the Prime Ministers of both Countries visited each other's Country.

After Fourteen years of Iran's revolution, Indian Prime Minister Shri Narasimha Rao visited Iran in September 1993. Main highlights during the visit included discussions on the construction of a pipeline to supply Iranian Natural Gas to India and allowing India to develop transit facilities in Iran for Indian products destined for the landlocked Central Asian republics and in return Iranian President Akbar Hashmi Rafsanjani visited India in April 1995, and also Indian Vice President Shri K.R Narayan visited Iran in 1996.

The relations become more powerful with the visit of Indian Prime Minister Atal Bihari Vajpayee to Iran in April 2001. He was warmly welcomed by the Iranian President, who described it as "a new chapter in the field of human and International relations"<sup>15</sup> and the result of this visits was signing of Tehran Declaration in which both sides motivated to launch a new stage of constructive and mutually benefitted cooperation, particularly covering the

fields of Energy, Transit and Transport, Industry, Agriculture and Service Sector. They also agreed to actively promote Scientific and Technological Cooperation, including among others, joint research projects, short and long-term training courses and exchange of related information on regular bases.<sup>16</sup>

### Conclusion and suggestions:

Indo -Iran relations has great significance in 21<sup>th</sup> century. These two countries need each other's help and assistance by virtue of their geographical proximity, cultural background, and coordination in strategic profits, geopolitical and geostrategic condition. Iran with the extensive Gas resources is the choice for India, Because of the fast growing need of India to this material on one hand, and the capabilities of Iran to answer this need on the other hand, brought mutual capacities in the relations between the two countries and also the Economical, Oil and Trade Co-operations and because of the overlapping Economical needs of the two Countries brought remarkable capacities for the mutual relationships, but these relations suffer from Iran-Iraq war in 1980 to 1988. India has been conservative about nuclear issues against Iran (in spite of its negative vote) in order to make the most of it and the policy of India is avoiding conflicts with America and Europe.

### References:

- 1: Baghdad Pact, also known as the Central Treaty Organization (CENTO) was established in 1955 by Iran, Iraq, Pakistan, Turkey, and the United Kingdom. It was dissolved in 1979. Though it aimed for mutual protection and non-intervention in each other's affairs, but carried a more Strategic agenda of containing the Soviet Union.
2. Hindustan Times. 29 Feb. 1980, *Indian Express*, Feb. 29, 1980.
3. Hindustan Times. 2 May 1982.
4. *Indian Express*, 10 June 1980.
5. *Tribune*, New Delhi, 20 July 1983
6. *Press Information Bureau*, New Delhi, July 23, 1983 "P.V. Narasimha Rao Concludes Visit", pp. 1-4.
7. P.V. Narasimha Rao concludes visit, "*press information bureau* (Government of India, New Delhi), July 23, 1983. Pp. 1-4.

8. Ibid.

9. *Financial Express*, January 14, 1986

10. Ibid, p. 224

11. India and Iran to set up Trade and Industrial Cooperation – *Foreign Affairs Records* (government of India, New Delhi) Volume XXXIII, No. 2, December 1987,

12. Ibid

13. *Asia Recorder*, Volume XXXV, No.45, November 1989, p 20850.

14. Mahmood, Afzal. 'Iran's strategic handshake', *Dawn*, 2001 (April 23).

15. "Foreign Secretary's Remarks at Discussion Session, 2001.'India-Iran: From Dialogue to a Convergence of Views' at the *India Economic Summit* (New Delhi, December 4, 2001)",

16. Nuri, .Maghsud ul Hasan. 2003. "India and Iran: Emerging Strategic cooperation?" *IPRI JOURNAL*, Vol. III, No. 2, p. 49.

#### **Current citations.**

"India Hails Ahmadinejad's Reelection," Fars News Agency, July 1, 2009

India Backs Iran's Peaceful Nuclear Program IRNA May 13 2008

"India Seeks Velvet Divorce from Iran," Asia Sentinel, November 5 2008;

"India Opposes Military Action against Iran," Fars News Agency, May 13 2008

"IAEA vote: Iran sends letter, India defends," Indian Express, 31 December, 2009

"India, S Arabia for peaceful resolution of Iran's N-issue," PTI News, March 2, 2010

"Sanctions on Iran counterproductive, says India," The Hindu, 9 March, 2010,

"India urges dialogue on Iran nuclear program," Press TV, 16 March, 2010,

"Tehran, New Delhi to Hold Economic Talks Next Month," Fars News

Agency, June 24, 2010

"India Cooperation Growing," Iran Daily IRNA, December 15 2008

"India Seeks Velvet Divorce from Iran," Asia Sentinel, November 5 2008

Srivastava, Siddhartha, "Nuke Deal Done, India Looks at a Gas Pipeline," Asia Sentinel, November 6, 2008

Suresh. V and Krishnamurthy. B, "Local Democracy in South Asia",

Mumbai: West wind Publishing House, 2013.

"China likely to replace India in Iran-Pak gas pipeline project," One India, February 6, 2010

Srivastava, Siddhartha, "Iran-Pakistan Finalized, India Weighs Options," Asia Sentinel, June 24, 2010

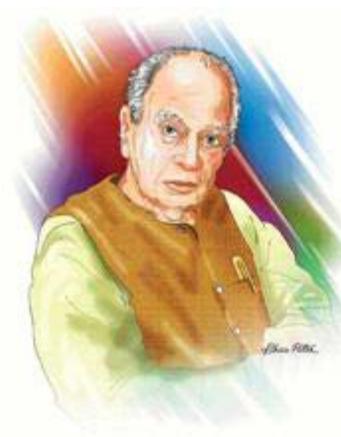
"Iran-Pak-India Gas Pipeline: India Undecided," Outlook India, May 25, 2009, (June 4, 2009

## Gender Discrimination: A Study with Special Reference to *Untouchable* and *Two Leaves and a Bud*

GH MUSTAFA MIR  
DEPARTMENT OF ENGLISH  
BARKATULLAH UNIVERSITY, BHOPAL

### ABSTRACT

Novel, one of the most prominent genres, represents the society which is divided into various sections and classes. In different classes or sections of the society some people are bereaved of socio-economic rights and resources that are available to other people. This section of people which is discriminated and excluded from the opportunities is given unfair and unjust treatment. So these suffered people undergo psychological trauma resulting in various diseases. Indo-Anglian writing has cropped a new image to present a real picture of society. All the low caste sections, untouchable caste and poor people are portrayed through the novels of the Indo-Anglian writers like Mulk Raj Anand, Raja Rao and R. K. Narayan etc. Their theme of humanism is based on exploitation and discrimination. In this regard, many female characters especially woman from untouchable caste as well as oriented woman are socially excluded in the patriarchal Indian culture. In this research paper we have to focus on woman sufferings, gender discrimination and marginalization of woman with special reference to Mulk Raj Anand's *Untouchable* and *Two Leaves and a Bud* in order to get some positive solutions for extermination of this exploitation of woman. This paper argues that gender discrimination is an inefficient practice.



**Key Words:** Gender discrimination, marginalization, patriarchy and women.

### INTRODUCTION

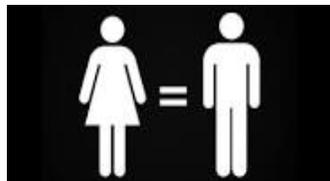
Mulk Raj Anand remained a unique and significant personality in Indian English fiction. As A.K. Talwar observes, "Anand's personality is like a Multifoliate Rose, crowned knots of fire. He is one of the central figures in Anglo-Indian fiction, what is more; he combines in himself the virtues of a humanist, rebel, leader of men, patriot, and social worker and active organizer". Mulk Raj Anand is one of the most entrusted and a consigned Indo-Anglian fiction writer who belongs to what K.R.S. Iyengar calls '*The Great Tradition*' along with Raja Rao and R.K. Narayan. Mulk Raj Anand, despite a genius writer, is a critic, an educationist and a social worker.

He is interested in human beings despite his critics described him a Marxist, a propagandist. His fiction revolves around the human being. Humanitarian ground becomes the nucleus of all his thinking and writing. He has not only highlighted the social issues of pre and post Independent Indian society but also has given the appropriate solutions to get rid of from these social evils. Mulk Raj Anand was a member of 'Indian Progressive Writers' Association' which was initially formed as a revolution to castigate the social discrimination through writings, and to aware human beings against the pathetic condition and suffering of their siblings. Very soon the aim of this association turned as a movement and rejected the vogue

aesthetic theory of 'Art for Art's Sake.' Anand strongly believed that the purpose of the literature should be based on the rectification of the mankind as well as the society and eradication of the disasters from society as these acts are like a curse on humanity. He also condemned the formalities of the literature that hold the art as its inner logic instead of outside focus. For this purpose he refused the old aesthetic theory and created a new theory 'Art for the Sake of Humanity' in his writings through which he presented his socially ignored and poor characters as more powerful than high caste and class people. He also believed that the perfection in the society as well as in human being can be possible through the art and always tried to get perfection in his writings for the same. Anand focuses on various themes of exploitations like gender discrimination and woman suffering which would be discussed in this research paper with special reference to Anand's *Untouchable* and *Two Leaves and a Bud*.

## CONCEPT OF GENDER DISCRIMINATION

Gender discrimination is a critical and dogged social problem and issue, especially in developing countries. Gender discrimination is modeled as the complete exclusion of females from the social cultures and traditions. In India discriminatory attitude towards males and females have existed in generations and affect the lives of both genders. It is a social practice which violates human rights. It is only woman who is suffering in her society and is perceived to be disadvantaged at work. The cultural contract of Indian society which reinforces gender bias against men and women, with varying degrees and valuable contacts against the opposite sex, has led to the continuation of India's strong preference for male children. Discrimination in favor of men creates human rights violation. Gender discrimination against woman snatches all her rights to live, liberty etc. It is a type of social exploitation which is strongly reflected in Anand's *Untouchable* and *Two Leaves and a Bud*.



## UNTOUCHABLE: REFLECTION OF GENDER DISCRIMINATION

*Untouchable* (1935), a powerful novel of Anand, highlights the problems and drawbacks of society to which we have subjected a large number of our brethren whom we have declared as untouchables. Bakha, the central figure of the novel lives in a separate outcasts' colony in Punjab. Unlikely, he is traditional sweeper in profession; he fights hard with his fate to lead a better life. It is more so because he is insulted by person who are morally and physically inferior to him. Anand expresses his view, "The spirit of fire which lay buried in the mass of flesh had ignited this morning and lay smouldering. A little more fuel and it flared up like a wild flame....."

Though Bakha is at the core of the novel, his sister Sohini appears meek and patient. Women suffer not only through men but also through women. They have to face a lot of hardships and abuses from women also. At the time of getting water from the well the washer woman, Gulabo, insults and scolds Sohini, "you illegally begotten!. ..You bitch of a sweeper woman". It was women's duty to fetch water and cook. Like Sohini, the untouchable womenfolk, spent a lot of time in a day to draw water. Sohini's long wait for a pitcher of water leads to molestation. There the high caste religious hypocrite, Pandit Kalinath asked her to clean the temple courtyard. At the well, he poured water for Sohini. Sohini was grateful for the favor he had shown her and hence went to the temple to clean the courtyard. There an attempt was made to molest her. But, she did not yield to his sexual desire. So he made hue and cry over the so-called pollution. The passion of lust knows no caste system. The group of higher caste Hindus gathered on hearing Pandit Kalinath's cry "Polluted! Polluted!" Nobody asked Sohini as what happened there but they were very much interested to purify the temple than to support the real victim. Nobody was there to support or save her physically and mentally. Especially, the sufferings of women can be understood better

only when the interaction takes place. Sohini returned to home and explained whole incident to Bakha: "He-e-e just teased me... and then when I was bending down to work, he came and held me by my breasts and when I screamed, he came out shouting that he had been defiled". Bakha is unable to bear such a painful experience in his life. He wants to take vengeance on the priest: "I will of killing him because the serfdom of thousands of years has humbled him". The outcastes have to be at the mercy of the caste Hindus for food and other resource. Sohini and her brother Bakha suffered a lot due to social stigma. The social hierarchy did neither allow them to take water nor were they allowed to access the nearby brook as they feel it would contaminate well and the stream. "The outcastes were not allowed to mount the platform surrounding the well, because if they were ever allowed to draw water from it, the caste Hindus of the upper castes would consider the water polluted" brook as they feel it would contaminate well and the stream.

Anand has portrayed women characters as it was in his time. In his time the young women especially of lower caste were not allowed to speak or expose their feelings to the society. Hence, Anand made them mute and Sohini's feelings are reflected in the novel through her brother, Bakha. Women as they grow old are ingrained with the submissive feeling. They did not want to protest but accepted the society and continued to live. Untouchability is still social stigma to both men and women. There are many social taboos that affected the freedom of women exclusively. Not only men oppressed women but also women oppressed women in many of his novels. Existence of gender in nature is essential for the rejuvenation and reproduction of life. As a matter of fact, identification of gender is based on physiological nature. To dominate women, society imposed many ideas as culture and tradition. Willingly or unwillingly women became the object of victimization. Though there are so many reasons for the predicament ignorance is the first and foremost cause for their suffering. Some people accept their suffering and subjugation as a part of life. To emerge

from the subjugation they must realize their abject humility.

## **TWO LEAVES AND A BUD: REFLECTION OF GENDER DISCRIMINATION**

Mulk Raj Anand's another outstanding novel is *Two Leaves and a Bud* which reflects social realism in the layer on working class exploitation. Anand's ultimate purpose is to expose social evils and try to uplift the level of working class so he always choose the subject of the novel which is very real and presents it in the real manners. In the said novel, Anand has presented the social condition of labourers in pre-independent India. The title of the novel is most suggestive and appropriate for it deals with the suffering and misery of the workers on the tea plantations of Assam.

The novel begins with the philosophic statement of Anand "Life is like a journey" and with this the tragic journey of Gangu – the protagonist, a hapless peasant from a village near Hoshiarpur in Punjab, starts to the naturally beautiful Assam. The realistic description in the novel of the Assam and its natural beauty is presented in very lively manner. It gives us almost in telling details, the panoramic picture of the tea-plantations.

This way Gangu starts his journey to Assam and he is lured by the false promises of a tout, leaves his native village, and goes with his wife Sajani and his children Leila and Buddhu to work on the Macpherson Tea Estate in Assam. Soon he discovers that the promises made to him were all false, that the world of a tea plantation is like a prison house;

*"The prison has no bars, but it is nevertheless an unbreakable jail".*

In *Two Leaves and a Bud*, Anand provides a sexually starved cruel man, Reggie Hunt, who exploits the women workers in Assam Tea Estate. Anand brings out an insight into the miserable condition of the women workers in India through Narain's description of Reggi Hunt, The Assistant Manager of the Machpherson tea estate, and the plight of coolie women in Assam Tea Estate: "He is very badmash Sahib. He is always drunk. And he has no consideration for anyone's mother or sister. He is

openly living with three coolie women". The workers are either lashed or imprisoned when they refuse to offer their wives to Reggie Hunt. This is evident from the words of Narain: "The coolie from Ranchi was lashed, because he refused to give his wife to the Ashasant planter. The Sahib had imprisoned Ranbir, and took his wife". The women are prone to the blatant sexual assaults of their employers. Anand depicts the fear of the sahib in the minds' of the women workers in the following line: "The coolie women shuffled like hens at the arrival of a much dreaded cock".

In *Untouchable*, the working women even in temple are not spared by men who call themselves as priests. Anand portrays the hypocrisy of the holy priest who tries to molest Sohini but resents the presence of Bakha in the temple. The expression of Sujatha is apt to describe the pathetic condition of the women and the coarse behavior of the priest: "After the molestation of Sohini by Pandit Kali Nath, Bakha was in distress and anger but he could not react for the latter belonged to the upper caste". This kind of molestation is seen in the novel *Two Leaves and a Bud* also. Reggie Hunt is an embodiment of evil who is so lustful and exploit the working women and their daughters sexually. He does not leave any body's wife or daughter unmolested. One day he finds Gangu's daughter, Leila, plucking leaves all alone. He advances towards her and tries to put his hands round her waist. But she escapes from his clutches and runs away from him. Reggie's passionate feelings are shown by Anand in this way: "The fierce passionate resolve he had made to leave her at all costs mingled with the summer's prime and covered him with sweat. His whole body was tinged with the glow of heat in whose aura he could see the girl fluttering in the excitement of her despair". Leila's struggle in the python's grip is an anticipatory image that foreshadows the doom that she has to face at the hands of Reggie, the human python. As she gathers fuel in the forest for the hearth fires of her father's home, Leila is in the grip of python. Anand narrates that even the animal in the forest also against the women: "It seemed that she would never be able to extricate herself from the snake's terrible embrace,

and she cried., with a sudden deliberation and pressed the scythe upwards. The sharp blade of the instrument bruised the python". She escapes from the coil of the snake. In *Two Leaves and a Bud*, the villain, Reggie too escapes from the clutches of law after killing Gangu. At the time of trying to molest her, Leila evades from Reggie. Frustrated Reggie shoots blindly and the bullet kills the oncoming Gangu, Leila's father, who comes there to rescue his daughter. Reggie is brought up for judgment on the charge of murder. But the jury unanimously declares a verdict, "you are discharged"

In Anand's *Untouchable* and *Two Leaves and a Bud* the villains, the priest, Pandit Kali Nath and Reggie Hunt escape unhurt even after doing crime against women.

## CONCLUSION

Empowerment in its simplest form means the manifestation of redistribution of power that challenges patriarchal ideology and the male domination. It is transformation of the structure of institutions that re-enforces and perpetuates gender discrimination. It is a process that enables women to gain access and control of material as well as informational resources. Empowerment is envisaged as an aid to help women achieve equality with men, or at least reduce the gender based discriminations considerably. Empowerment would enable women to perform certain social roles that they cannot perform without it. Gender equality – political, economic or social – enshrined in the fundamental rights under the constitution. The major strategies of women empowerment include- social empowerment, economic empowerment and gender justice e.g. to eliminate all types of discrimination against women. In the post colonial period liberal thought was brought in to our country and it was also propagated by western education. The image of the woman in the postcolonial fiction is a crystallized form of the two different cultures. It has been recognized globally that Empowerment of women and Gender equality is taken as a key element to achieve progress in all areas and also there is a growing social awareness across the globe to attain gender equality and women empowerment. The rise in the levels of education which nourishes

progressive outlook and the advent of industrialization and modernization have affected a sea change in the attitude and thinking patterns of the people.

Though Anand's main focus in his early novels is on the plight of Indian proletariat, he gives adequate attention to the cause of women through his forceful presentation of certain abuses against their freedom and security. His intention is to bring out the inequitable social practices on women. Physical and sexual violence against women have been perpetuated by governments by passing laws; violence by society and cultural beliefs among the public inflict women with unnecessary restrictions; women are victims of four categories of violence during their lifetimes; physical, economic, psychological and social. Physical violence includes imprisoning women in homes; beating and verbal violence such as threatening remarks, using obscene language, and inflicting damage on property. The violence against wife was directly related to the education level of the husbands and the age of the couples, as husbands with higher education displayed less violence against their wives than those with lower educational achievements, with the maximum violence against women exercised in rural communities, where the lack of awareness about rights and fear of labeling by the community are major contributing factors to tolerance of the situation.

Man is inherently created by God as a social animal, who seeks justice and law; based on his innate properties, he would welcome violence. He has two dimensions; one is animal instinct of carnality, the other is his sublime entity which enjoys the ability to speak and the command over logic and speech, both man and woman are human and no other side's superiority over other is taken for granted; the gender would not be any determining factor in superiority, but the true human spirit constitutes our identity as humans, and not our corporeal body. Therefore, no difference would distinguish man and woman in the first place.

## REFERENCES

- Anand, Mulk Raj. "Untouchable". Pune: Mehta Publication, 2003. Print.
- Anand, Mulk Raj: "Two Leaves and A Bud", Hind Pocket Books (p) Ltd, New Delhi, 1937.
- Arora, Neena. The Novels of Mulk Raj Anand: A Study of his Hero, New Delhi: Atlantic Publishers, 2005.
- Cowasjee, Saros. "Afterwards" Untouchable. (Delhi: Orient Paper, back 1980).
- Cowasjee, Saros. So Many Freedoms: A Study of the Major Fiction of Mulk Raj Anan. (Madras: Oxford Uni.Press, 1977).
- Gupta, Balaram. Mulk Raj Anand: A Study of his Novels in Humanist Perspective. (Barely: Prakash Book Depot).
- Khan, S. A. Mulk Raj Anand The Novel of Commitment, New Delhi: Atlantic Publishers, 2000.
- Narayan, R. K. Social Problems in the Indo-Anglian and the Anglo-Indian Novel. Indian: Jaico, 1972.
- Paul, Premila. The Novels of Mulk Raj Anand: A Thematic Study (New Delhi: Sterling Publishers Pvt.Ltd, 1983).
- Sigh, Amrik. Mulk Raj Anand: Role and Achievement, New Delhi: National Book Trust, 2008.
- Talwar, A.K. Anand a Man of Visions. Indian Magazine, IX, 1991.

## Evolution of Properties of Concrete Using bamboo pieces as partial replacement for Coarse Aggregate for M 20 grade of concrete

Deepak Kumar Tiwari<sup>2</sup> , Professor Anil Kumar Saxena<sup>1</sup>

1 Professor in Civil Engineering Department, Laxmi Narayan Institute of Technology, Raisen Road Bhopal, (M.P.)

2 M Tech. (Thesis) Student, Construction Technology and Management Civil Engineering Department, Laxmi Narayan Institute of Technology, Raisen Road Bhopal, (M.P.)

### ABSTRACT

The purpose of this experimental study is owing to the fact that now a days natural aggregate conforming to Indian standards becoming costly and scarcely available due to it's non-availability with time because of Land Laws, access to the land quarries, especially during rainy season, illegal cutting by concerned mafia.

Concrete is an extensively used construction material for its various advantages such as low cost, availability, fire resistance etc. But it cannot be used alone everywhere because of its low tensile strength. So, generally steel is used to reinforce the concrete. But considering high cost of steel, bamboo is one of the suitable replacements of reinforcing bar in concrete for low cost constructions. Bamboo is natural, cheap, widely available and most importantly strong in both tension and compression. This experiment will show that bamboo can also be used as alternative for the coarse aggregate. To see the effect of bamboo fibre on compressive and flexure strength, bamboo reinforced Concrete cubes, cylinders and beams have been tested. On comparing the results with plain concrete cubes, strength becomes double in 50 days testing. It has been found that there is remarkably increase in the flexural strength and Modulus of elasticity of bamboo reinforced beam.

First of all cubes, beams and cylinders are casted with traditional methods and later same casted by replacing coarse aggregates with 1%, 2% ,and 3% bamboo fibres. The behavior of specimens has to be studied and compared with conventional specimens.

### INTRODUCTION

Concrete is a mixture material composed of coarse granular material (the aggregate or filler) surrounded in a hard matrix of material (the cement or binder) that fills the gap among the aggregate particles and cements them together. The usage of concrete, worldwide, is twice as much as steel, wood, plastics, and aluminium combined. Concrete's use in the modern world is only exceeded by the usage of naturally occurring water. The economy, efficiency, durability, shape retaining ability and rigidity of reinforced concrete make it an amazing material for a wide range of structural applications.

Concrete is widely used for making architectural structures, foundations, brick/block walls,

pavements, bridges/overpasses, motorways/roads, runways, parking structures, dams, pools/reservoirs, pipes, footings for gates, fences and poles and even boats. Combining water with a cementitious material forms a cement paste by the process of hydration. The cement paste glues the aggregate together, fills voids within it, and makes it flow more freely.

Aggregate is one of the important constituents which has effect in strength development in the theory that the gaps of coarse aggregate is filled by the fine aggregate and the gaps of fine aggregate is filled by the binding materials. In addition the strength of concrete mainly depends on water/cement ratio, aggregate gradation, and aggregate size and shape, cement quality, mixing

time, mixing ratios, curing etc. Concrete must be both strong and workable, a careful balance of the cement to water ratio is required when making concrete. Fine aggregate are basically sands won from the land or the marine environment. Fine aggregates generally consist of natural sand or crushed stone with most particles passing through a 4.75mm sieve. For concrete sand fineness modulus range is 2.3-3.1.

In this experiment it has been observed that coarse aggregates can be replaced with coarse bamboo pieces. Bamboo fibres can also be used as a filler material in concrete in road construction or other ground works such as paver block construction, waist slab and other water retaining structures. Bamboo pieces may also be used with some effectiveness as a partial replacement of

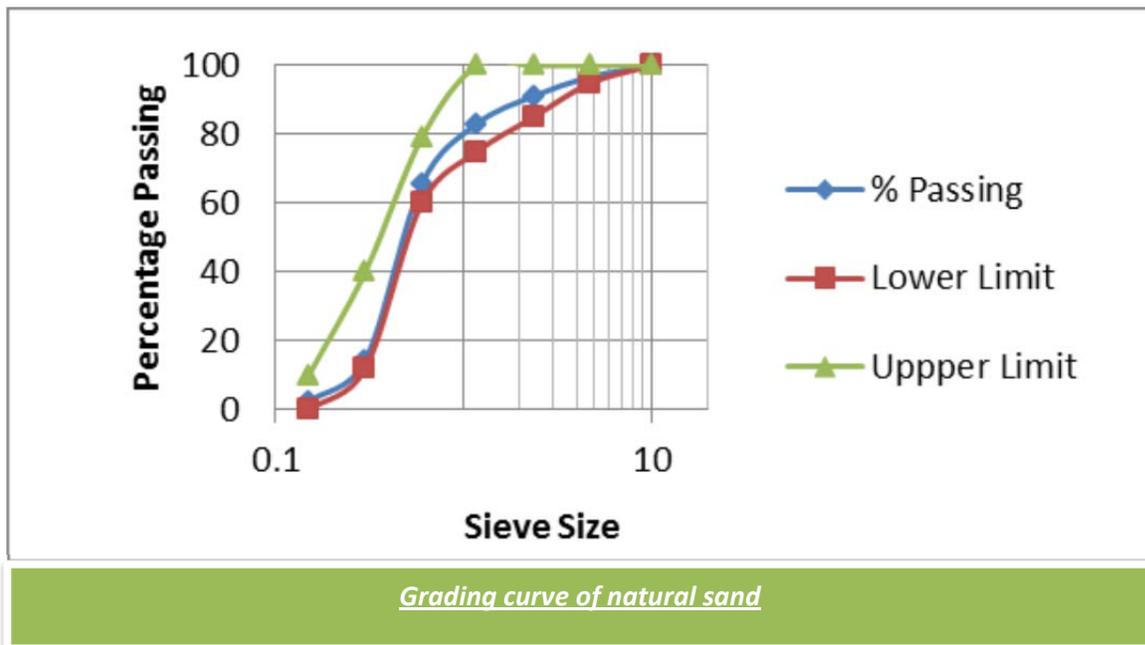
inorganic aggregates in concrete applications to decrease the dead weight of structures.

Materials used:-

PPC approving to IS 1489-1991 part 1 has been used in the experiment. Coarse aggregates of 10 mm and 20 mm size and natural sand confirming to zone III has been used. Bamboo fibres with size of varying length from 2 to 4 cm, breadth from 1 to 2 cm, and thickness of 1 cm is also used as a partial replacement of coarse aggregate at the replacement levels of 0%, 1%, 2% and 3%. The physical properties of all these materials were tested as per IS 383-1970.

<u>Property of Cement used</u>			
	Particulars	Test results	Requirements as per IS:1489;1991
1.	Standard Consistency	32%	
2.	Setting Time (In Minutes)		
	a. Initial	34	30
	b. Final	484	60
3.	Compressive strength		
	a. 72 +/- 1hr. (3 days)	30.5	16( Min)
	b. 168 +/- 2hr. (7 days)	40.3	22( Min)
	c. 672 +/- 4hr. (28 days)	55.2	33( Min)
4.	Fineness of cement	12%	

<u>Physical properties of aggregates used</u>		
Particulars	Specific gravity	Water absorption(In %)
Coarse Aggregate	2.93	.9
Fine aggregates (sand)	2.71	1.20
Bamboo	.74	22



### Experimental Methodology

Before starting the experiment, mix design of M20 grade is carried out as per IS 10262-2009. The engineering properties of concrete mixes such as slump ( through cone test) as per 1199-1959, compressive strength test and flexural strength test as per IS 516-1959 and split tensile test as per IS 5816-1999 were carried out.

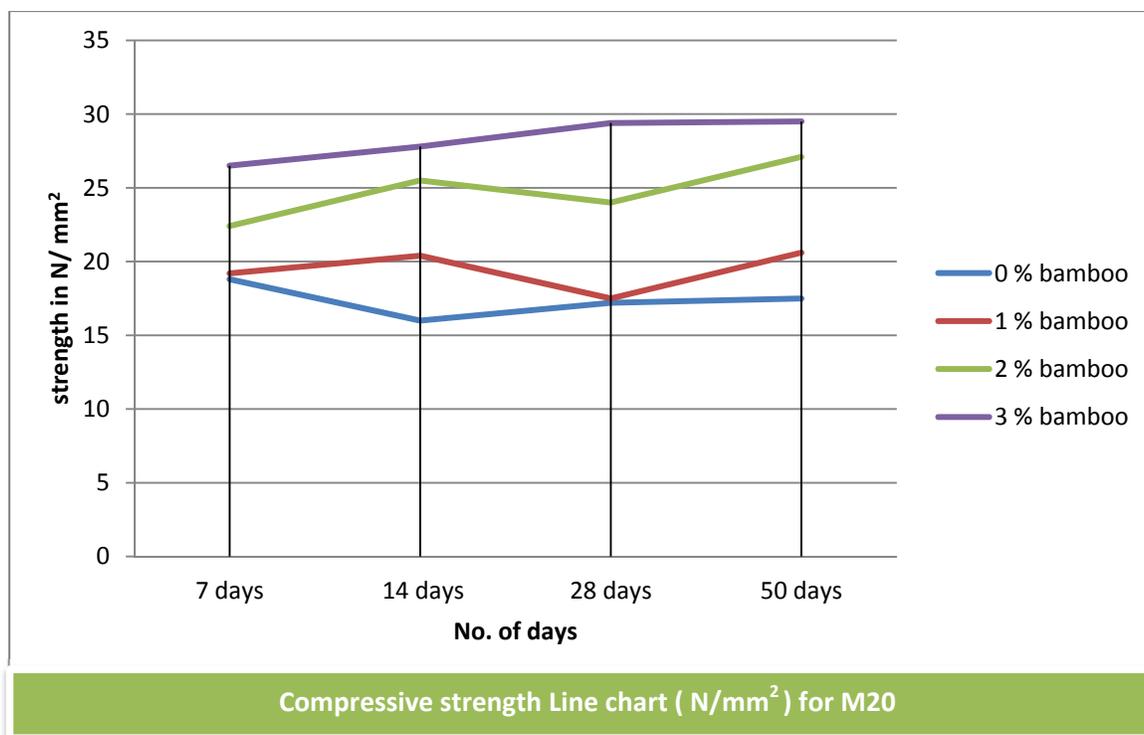
A total of 96 specimens were casted ( 24 specimens of 0%, 1%, 2%, and 3% bamboo pieces having 12 cubes, 6 cylinders and 6 beams). The cube test carried at 7,14, 28 and 50 days, flexural test and tensile test at 28 and 50 days.

S. No.	Mix		Ingredient (Kg/m <sup>3</sup> )			Water (In Kgs)
	Bamboo cuttings percentage	Cement	Fine Aggregate	Coarse Aggregate	Bamboo cuttings weight	
<b>M 20 mix design of Concrete</b>						
1	0%	59.4	97.62	230.38	0	32.64
2	1%	59.4	97.62	228	2.30	32.64
3	2%	59.4	97.62	225.7	4.6	32.64
4	3%	59.4	97.62	223.5	7	32.64

## Results and Observations

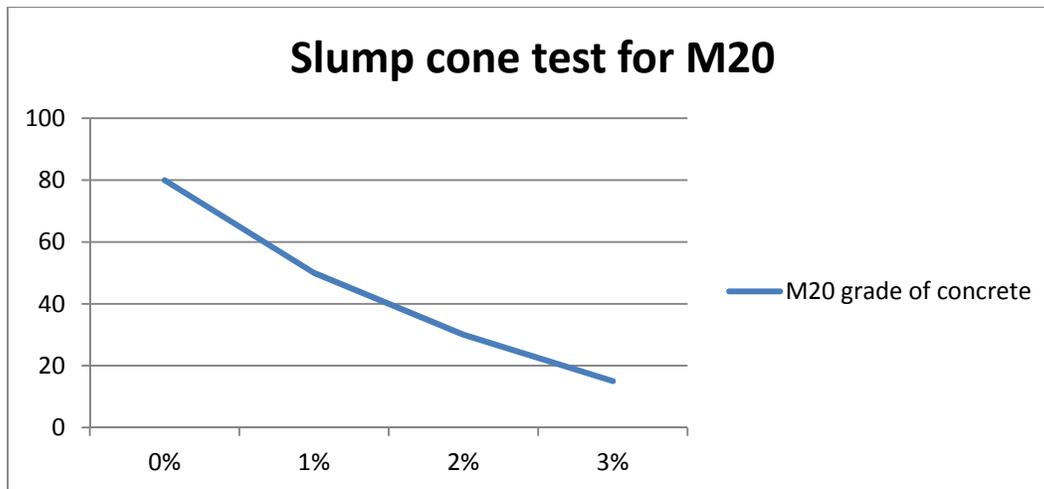
Compressive strength test result:-

Bamboo cuttings waste	Compressive strength ( N/mm <sup>2</sup> ) for M20			
	7 days	14 days	28 days	50 days
0%	18.8	19.2	22.4	26.5
1%	16	20.4	25.5	27.8
2%	17.2	17.5	24	29.4
3%	17.5	20.6	27.1	29.5



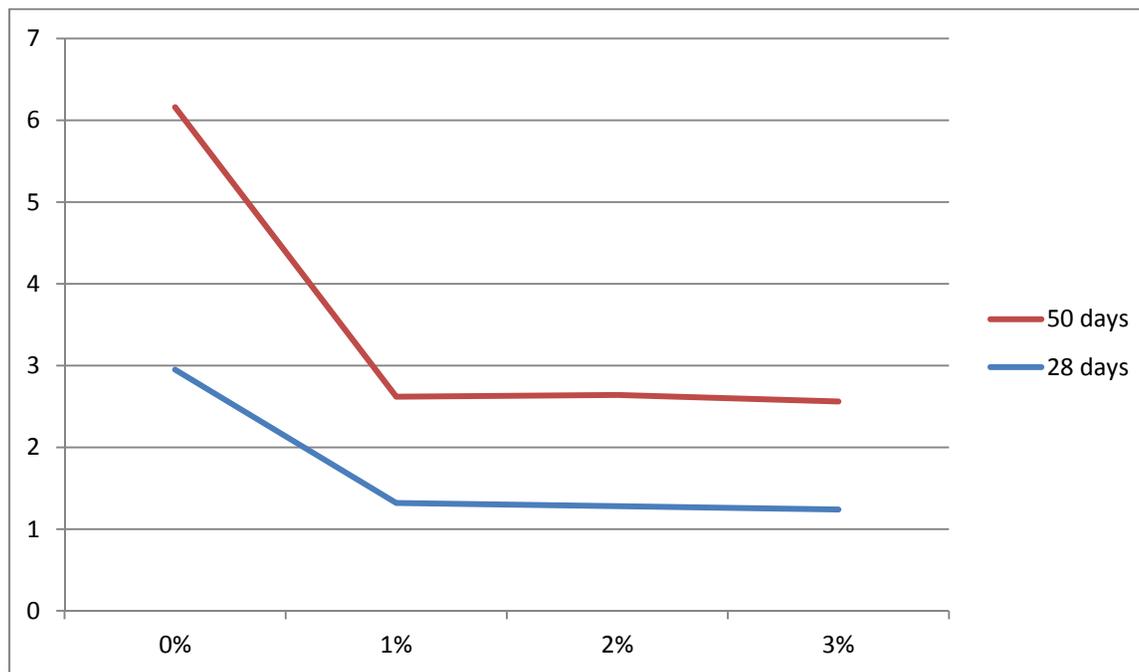
Slump cone test:-

Bamboo cuttings waste	Slump( in mm )
<b>M20</b>	
0%	80
1%	50
2%	30
3%	15



Flexural test result and analysis:-

Bamboo cutting percentage	Flexural strength test	
	28 days	50 days
<b>M20</b>		
0%	2.95	3.21
1%	1.32	1.30
2%	1.28	1.36
3%	1.24	1.32



Flexural strength Test results line chart

## Tensile test results:-

Bamboo cutting percentage	Tensile strength test	
	28 days	50 days
0%	2.19	2.33
1%	1.96	2.43
2%	1.65	1.73
3%	1.56	1.70



## Conclusion

All these tests are performed in the laboratory of LNCT College, Bhopal Based on the results of the experimental investigation, following conclusions could be drawn as follows :-

- 1.1. With the increase in bamboo percentage, earlier achievement of compressive strength occurred but at the end of 50 days there is not much percentage increase. This indicates towards the earlier strength gain of concrete due to replacement of bamboo.
- 1.2. Slump results shows that there is decrease in workability with increase in bamboo

percentage. This workability can be increased by the use of plasticizers

- 1.3. Flexural strength decreases up to 50 percent with simply one percent of bamboo and then decrease with slow rate. This shows that the concrete having replaced coarse aggregate with bamboo pieces are weak in taking bending moment. So it's not recommended for upper floors.
- 1.4. Tensile strength line chart also show a gradual decrease in the tensile strength

## References:-

1. Lakkad, S.C. and J.M. Patel. 1980. Mechanical properties of bamboo, a natural composite. *Fiber Sci. Technol.* 14: 319-322.
2. Abd.Latif, M., W.A. W. Tarmeze, and A. Fauzidah. 1990. Anatomical features and mechanical properties of three Malaysian bamboos. *J. Tropical Forest Sci.* 2(3): 227-234.
3. Janssen, J.J.A. 1995. Building with bamboo (2<sup>nd</sup> ed.). Intermediate Technology Publication Limited, London. pp. 65.
4. Amada, S., Y. Ichikawa, T. Munekata, Y. Nagase, and K. Shimizu. 1997. Fiber texture and mechanical graded structure of bamboo. *Composite Part B.* 28(B): 13-20.
5. Guinness. "[Fastest growing plant](#)". Retrieved 22 August 2014.
6. Higuchi, H. 1957. Biochemical studies of lignin formation, III. *Physiologia Plantarum* 10:633-648.
7. Liese, W. 1980. Preservation of bamboos. In: (G. Lessard and A. Chouinard, eds). *Bamboo Research in Asia*. IDRC, Canada. pp. 165-172.
8. Mathew, G. and K.S.S. Nair. 1990. Storage pests of bamboos in Kerala. In: (R. Rao, R. Gnanaharan, and C.B. Sastry, Eds.). *Bamboos: Current Research*. IV. Proc. International Bamboo Workshop, KFRI/IDRC. pp. 212-214.
9. Liese, W. and G. Weiner. 1997. Modifications of bamboo culm structures due to ageing and wounding. In: (G. Chapman, eds.). *The Bamboos*. The Linnean Society, London. pp. 313-322.
10. Grosser, D. and W. Liese. 1971. On the Anatomy of Asian Bamboos, with Special Reference to their Vascular Bundles. *Wood Sci. Technol.* 5: 290-312.
11. Kishen, J., D.P. Ghosh, and M.A. Rehman. 1956. Studies on moisture content, shrinkage, swelling and intersection point of mature (*Dendrocalamus strictus*) male bamboo. *Indian For. Rec.* 1: 1-30.
12. Lee, A.W.C, X.S. Bai, and P.N. Peralta. 1994. Selected physical and mechanical properties of giant timber bamboo grown in South Carolina. *Forest Prod. J.* 44(9):40-46.
13. Fujii, T. 1985. Cell-wall structure of the culm of Azumanezasa (*Pleuroblastus chino* Max.). *Mokuzai Gakkaishi*. 31:865-872.
14. Wikipedia, the free encyclopedia
15. IS 10262: 2009, Bureau of Indian Standard, New Delhi.
16. IS 516-1959, Bureau of Indian Standard, New Delhi.
17. IS 456:2000, Bureau of Indian Standard, New Delhi.
18. IS 1343:1980, Bureau of Indian Standard, New Delhi.
19. IS 383, Bureau of Indian Standard, New Delhi.
20. IS 460-1962, Bureau of Indian Standard, New Delhi.
21. IS 516:1959, Bureau of Indian Standard, New Delhi.
22. IS 2386(part IV) -1963, Bureau of Indian Standard, New Delhi.
23. IS 7320-1974, Bureau of Indian Standard, New Delhi.
24. IS 509-1959, Bureau of Indian Standard, New Delhi.

## Evolution of Properties Of Concrete Using bamboo pieces as partial replacement for Coarse Aggregate for M 25 grade of concrete

Deepak Kumar Tiwari<sup>2</sup> , Professor Anil Kumar Saxena<sup>1</sup>

1 Professor in Civil Engineering Department, Laxmi Narayan Institute of Technology, Raisen Road Bhopal, (M.P.)

2 M Tech. (Thesis) Student, Construction Technology and Management Civil Engineering Department, Laxmi Narayan Institute of Technology, Raisen Road Bhopal, (M.P.)

### ABSTRACT

The purpose of this experimental study is owing to the fact that now a days natural aggregate conforming to Indian standards becoming costly and scarcely available due to it's non-availability with time because of Land Laws, access to the land quarries, especially during rainy season, illegal cutting by concerned mafia.

Concrete is an extensively used construction material for its various advantages such as low cost, availability, fire resistance etc. But it cannot be used alone everywhere because of its low tensile strength. So, generally steel is used to reinforce the concrete. But considering high cost of steel, bamboo is one of the suitable replacements of reinforcing bar in concrete for low cost constructions. Bamboo is natural, cheap, widely available and most importantly strong in both tension and compression. This experiment will show that bamboo can also be used as alternative for the coarse aggregate. To see the effect of bamboo fibre on compressive and flexure strength, bamboo reinforced Concrete cubes, cylinders and beams have been tested. On comparing the results with plain concrete cubes, strength becomes double in 50 days testing. It has been found that there is remarkably increase in the flexural strength and Modulus of elasticity of bamboo reinforced beam.

First of all cubes, beams and cylinders are casted with traditional methods and later same casted by replacing coarse aggregates with 1%, 2% ,and 3% bamboo fibres. The behavior of specimens has to be studied and compared with conventional specimens.

### INTRODUCTION

Concrete is a mixture material composed of coarse granular material (the aggregate or filler) surrounded in a hard matrix of material (the cement or binder) that fills the gap among the aggregate particles and cements them together. The usage of concrete, worldwide, is twice as much as steel, wood, plastics, and aluminium combined. Concrete's use in the modern world is only exceeded by the usage of naturally occurring water. The economy, efficiency, durability, shape retaining ability and rigidity of reinforced concrete make it an amazing material for a wide range of structural applications.

Concrete is widely used for making architectural structures, foundations, brick/block walls, pavements, bridges/overpasses, motorways/roads,

runways, parking structures, dams, pools/reservoirs, pipes, footings for gates, fences and poles and even boats. Combining water with a cementitious material forms a cement paste by the process of hydration. The cement paste glues the aggregate together, fills voids within it, and makes it flow more freely.

Aggregate is one of the important constituents which has effect in strength development in the theory that the gaps of coarse aggregate is filled by the fine aggregate and the gaps of fine aggregate is filled by the binding materials. In addition the strength of concrete mainly depends on water/cement ratio, aggregate gradation, and aggregate size and shape, cement quality, mixing time, mixing ratios, curing etc. Concrete must be both strong and workable, a careful balance of the cement to water ratio is

required when making concrete. Fine aggregate are basically sands won from the land or the marine environment. Fine aggregates generally consist of natural sand or crushed stone with most particles passing through a 4.75mm sieve. For concrete sand fineness modulus range is 2.3-3.1.

In this experiment it has been observed that coarse aggregates can be replaced with coarse bamboo pieces. Bamboo fibres can also be used as a filler material in concrete in road construction or other ground works such as paver block construction, waist slab and other water retaining structures. Bamboo pieces may also be used with some effectiveness as a partial replacement of inorganic aggregates in

concrete applications to decrease the dead weight of structures.

### Materials used:-

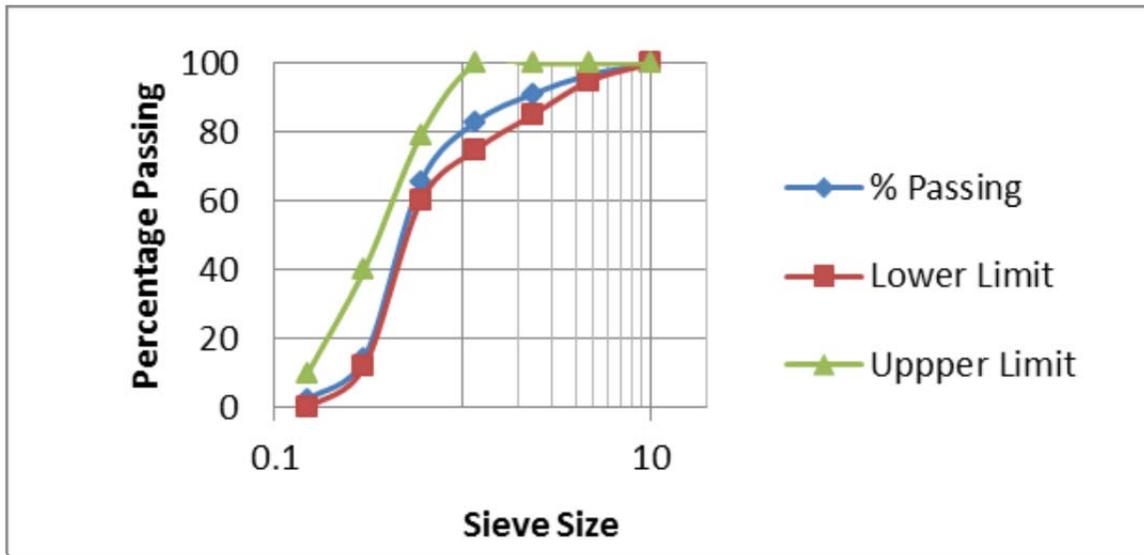
PPC approving to IS 1489-1991 part 1 has been used in the experiment. Coarse aggregates of 10 mm and 20 mm size and natural sand conforming to zone III has been used. Bamboo fibres with size of varying length from 2 to 4 cm, breadth from 1 to 2 cm, and thickness of 1 cm is also used as a partial replacement of coarse aggregate at the replacement levels of 0%, 1%, 2% and 3%. The physical properties of all these materials were tested as per IS 383-1970.

**Table No. 1 Property of Cement used**

	Particulars	Test results	Requirements as per IS:1489;1991
1.	Standard Consistency	32%	
2.	Setting Time (In Minutes)		
	a. Initial	34	30
	b. Final	484	60
3.	Compressive strength		
	a. 72 +/- 1hr. (3 days)	30.5	16( Min)
	b. 168 +/- 2hr. (7 days)	40.3	22( Min)
	c. 672 +/- 4hr. (28 days)	55.2	33( Min)
4.	Fineness of cement	12%	

**Table No. 2 Physical properties of aggregates used**

Particulars	Specific gravity	Water absorption(In %)
Coarse Aggregate	2.93	.9
Fine aggregates (sand)	2.71	1.20
Bamboo	.74	22



*Fig. 1 Grading curve of natural sand*

### Experimental Methodology

Before starting the experiment, mix design of M20 grade is carried out as per IS 10262-2009. The engineering properties of concrete mixes such as slump ( through cone test) as per 1199-1959, compressive strength test and flexural strength test as per IS 516-1959 and split tensile test as per IS 5816-1999 were carried out.

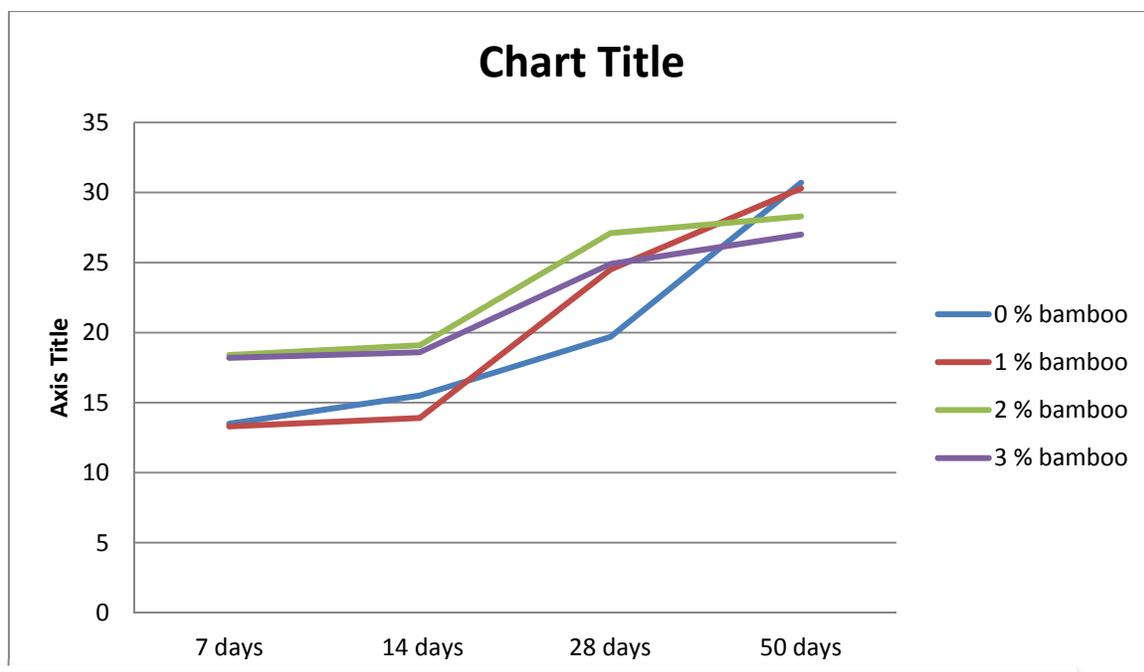
A total of 96 specimens were casted ( 24 specimens of 0%, 1%, 2%, and 3% bamboo pieces having 12 cubes, 6 cylinders and 6 beams). The cube test carried at 7,14, 28 and 50 days, flexural test and tensile test at 28 and 50 days.

S. No.	Mix		Ingredient (Kg/m <sup>3</sup> )			Water (In Kgs)
	Bamboo cuttings percentage	Cement	Fine Aggregate	Coarse Aggregate	Bamboo cuttings weight	
<b>M 25 mix design of Concrete</b>						
1	0%	65.3	101.82	221.13	0	32.64
2	1%	65.3	101.82	218.9	2.2113	32.64
3	2%	65.3	101.82	216.7	4.4226	32.64
4	3%	65.3	101.82	214.5	6.6339	32.64

## Results and Observations

Compressive strength test result:-

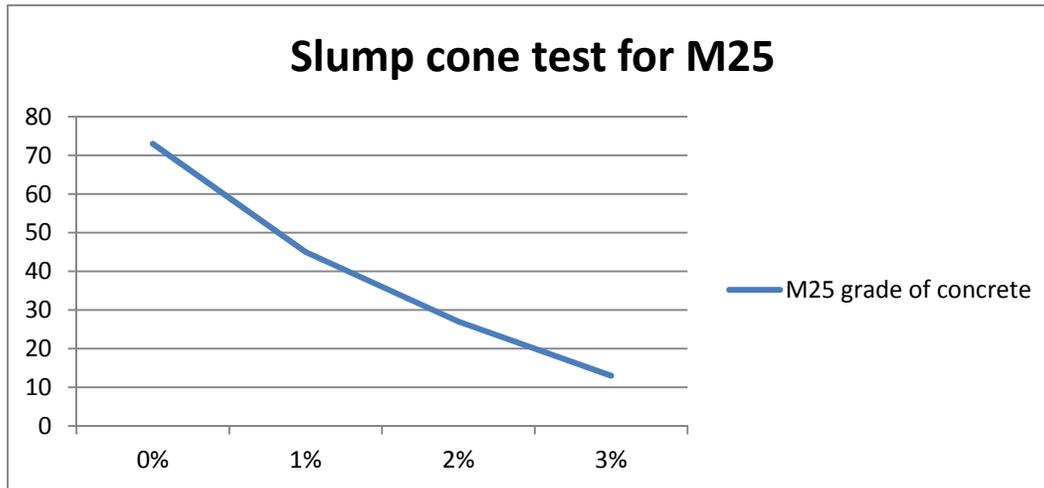
Bamboo cuttings waste	Compressive strength ( N/mm <sup>2</sup> ) for M20			
	7 days	14 days	28 days	50 days
0%	13.5	15.5	19.7	30.7
1%	13.3	13.9	24.5	30.3
2%	18.4	19.1	27.1	28.3
3%	18.2	18.6	24.9	27



Compressive strength Line chart ( N/mm<sup>2</sup> ) for M 25

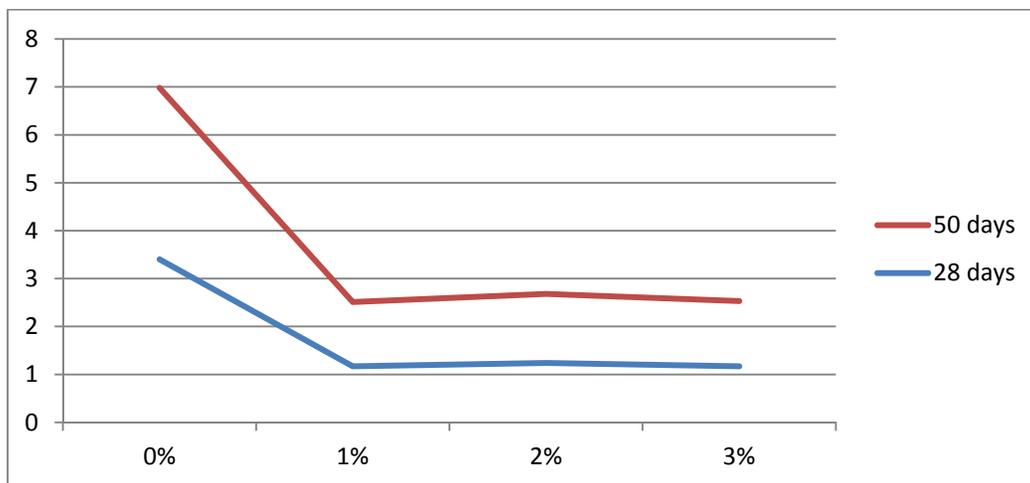
Slump cone test:-

Bamboo cuttings waste	Slump( in mm )
<b>M25</b>	
0%	73
1%	45
2%	27
3%	13



Flexural test result and analysis:-

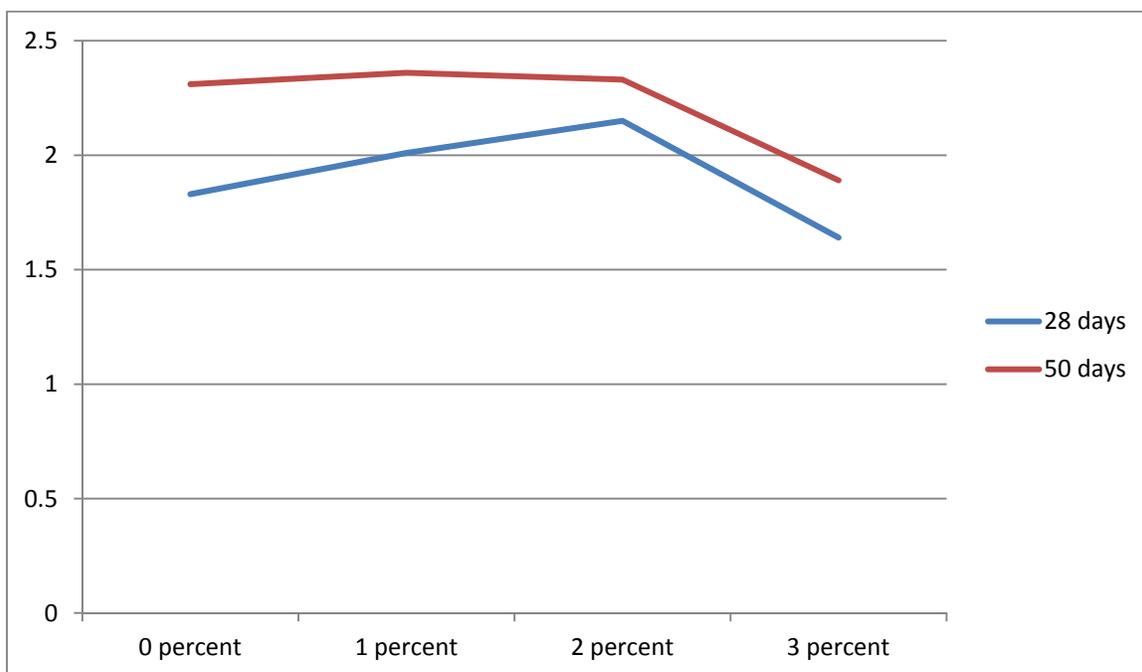
Bamboo cutting percentage	Flexural strength test	
	28 days	50 days
<b>M25</b>		
<b>0%</b>	3.4	3.58
<b>1%</b>	1.17	1.34
<b>2%</b>	1.24	1.44
<b>3%</b>	1.17	1.36



Flexural strength Test results line chart

Tensile test results:-

Bamboo cutting percentage	Tensile strength test	
	28 days	50 days
0%	1.83	2.31
1%	2.01	2.36
2%	2.15	2.33
3%	1.64	1.89



Tensile strength test results in line chart

## **CONCLUSION**

All these tests are performed in the laboratory of LNCT College, Bhopal Based on the results of the experimental investigation, following conclusions could be drawn as follows :-

- 1.1. With the increase in bamboo percentage, earlier achievement of compressive strength occurred but at the end of 50 days there is not much percentage increase. This indicates towards the earlier strength gain of concrete due to replacement of bamboo.
- 1.2. Slump results shows that there is decrease in workability with increase in bamboo percentage. This workability can be increased by the use of plasticizers
- 1.3. Flexural strength decreases up to 50 percent with simply one percent of bamboo and then decrease with slow rate. This shows that the concrete having replaced coarse aggregate with bamboo pieces are weak in taking bending moment. So it's not recommended for upper floors.
- 1.4. Tensile strength line chart also show a gradual decrease in the tensile strength

## **REFERENCES**

1. Lakkad, S.C. and J.M. Patel. 1980. Mechanical properties of bamboo, a natural composite. *Fiber Sci. Technol.* 14: 319-322.
2. Abd.Latif, M., W.A. W. Tarmeze, and A. Fauzidah. 1990. Anatomical features and mechanical properties of three Malaysian bamboos. *J. Tropical Forest Sci.* 2(3): 227-234.
3. Janssen, J.J.A. 1995. Building with bamboo (2<sup>nd</sup> ed.). Intermediate Technology Publication Limited, London. pp. 65.
4. Amada, S., Y. Ichikawa, T. Munekata, Y. Nagase, and K. Shimizu. 1997. Fiber texture and mechanical graded structure of bamboo. *Composite Part B*. 28(B): 13-20.
5. Guinness. "Fastest growing plant". Retrieved 22 August 2014.
6. Higuchi, H. 1957. Biochemical studies of lignin formation, III. *Physiologia Plantarum* 10:633-648.
7. Liese, W. 1980. Preservation of bamboos. In: (G. Lessard and A. Chouinard, eds). *Bamboo Research in Asia*. IDRC, Canada. pp. 165-172.
8. Mathew, G. and K.S.S. Nair. 1990. Storage pests of bamboos in Kerala. In: (R. Rao, R. Gnanaharan, and C.B. Sastry, Eds.). *Bamboos: Current Research*. IV. Proc. International Bamboo Workshop, KFRI/IDRC. pp. 212-214.
9. Liese, W. and G. Weiner. 1997. Modifications of bamboo culm structures due to ageing and wounding. In: (G. Chapman, eds.). *The Bamboos*. The Linnean Society, London. pp. 313-322.
10. Grosser, D. and W. Liese. 1971. On the Anatomy of Asian Bamboos, with Special Reference to their Vascular Bundles. *Wood Sci. Technol.* 5: 290-312.
11. Kishen, J., D.P. Ghosh, and M.A. Rehman. 1956. Studies on moisture content, shrinkage, swelling and intersection point of mature (*Dendrocalamus strictus*) male bamboo. *Indian For. Rec.* 1: 1-30.
12. Lee, A.W.C, X.S. Bai, and P.N. Peralta. 1994. Selected physical and mechanical properties of giant timber bamboo grown in South Carolina. *Forest Prod. J.* 44(9):40-46.
13. Fujii, T. 1985. Cell-wall structure of the culm of *Azumanezasa (Pleioblastus chino* Max.). *Mokuzai Gakkaishi*. 31:865-872.
14. Wikipedia, the free encyclopedia
15. IS 10262: 2009, Bureau of Indian Standard, New Delhi.
16. IS 516-1959, Bureau of Indian Standard, New Delhi.
17. IS 456:2000, Bureau of Indian Standard, New Delhi.
18. IS 1343:1980, Bureau of Indian Standard, New Delhi.
19. IS 383, Bureau of Indian Standard, New Delhi.
20. IS 460-1962, Bureau of Indian Standard, New Delhi.
21. IS 516:1959, Bureau of Indian Standard, New Delhi.
22. IS 2386(part IV) -1963, Bureau of Indian Standard, New Delhi.



23. IS 7320-1974, Bureau of Indian Standard, New Delhi.
24. IS 509-1959, Bureau of Indian Standard, New Delhi.

## TOXICITY DETERMINATION OF DETERGENT (TIDE) AND ITS EFFECTS ON THE MORPHOLOGY AND BEHAVIOUR OF *CLARIUS BATRACHUS*

B. Kalita, K.C. Bhuyan, D. Kusre, A.Q.Osmani

Department of Zoology, Morigaon College,  
Morigaon, Assam.

### ABSTRACT

Indiscriminate use of different detergents, shampoos, soaps etc. cause water pollution. Concentration dependent morphological and behavioural abnormalities were observed in a freshwater fish (*C.batrachus*) treated with three concentrations of detergents for 48, 72 and 96 hours. Detergent not only affects the chemical speciation of the water body and the metabolic rhythm of the biota but it also accelerates eutrophication and death of such aquatic system. LC50 expressed as mg/l were 3.7, 4.1 and 4.7 mg/l for *C.batrachus* (a bottom feeder and carnivorous). Rearing the fish in different concentrations of detergent, it was found that the feeding rates of the fishes were decreased from 43.2mg/g/day to 32.5mg/g/day in *C.batrachus*. They enter in to the food chain of aquatic animals and absorbed through the gills or skin or through the alimentary canal. Exposure of fishes to different sub-lethal concentrations of detergent (Tide) showed slow movement, pale body colour, abnormal behaviour, less conversion efficiency, less responses to food, followed by mortality. The use of huge quantities of detergent is causing foam in the water, reducing the air-water interaction and causing destruction of pond or beel or riverine ecosystem and effect in the morphology, physiology or behavior of aquatic fauna.

### INTRODUCTION

The use of detergents, soaps or shampoos are increased by human due to washing or bathing and most of them are not degraded easily. Detergents are of two types, the alkyl-benzene-sulphonate that is not biodegradable and the linear alkyl sulphonate which is biodegradable (Mukherjee and Pandey, 2005). Ninety percent of the detergents are composed of a substance known as fillers these include polyphosphates, sodium silicates, sodium carbonate and sodium carboxymethyl cellulose (Manivasakam, 1989). Generally, all the domestic detergents are biodegradable as a result of conversion by manufacture from the hard alkyl-benzene-sulphonate (ABS) to the soft linear alkyl sulphonate (LAS) forms. Linear alkyl sulphonate is four times as toxic to aquatic organisms as alkyl-benzene-sulphonate. Detergents thus introduce both organic and inorganic substances in to the aquatic bodies, triggering a variety of effects (Mukherjee and Pandey, 2005). Detergents are alkaline with high pH,

high BOD, high COD with phosphates, carbonates and borax, effect on aeration and reoxygenation of water, causes frothing and toxic to flora and fauna. Detergents are widely used without the knowledge of its effect on receiving water bodies (Mukherjee and Pankajakshi, 1995). Though, a number of workers have studied the effects of pollutants on physiology and biochemistry of fishes (Rani *et al.*, 1998). Studies on the effects of commercial detergents on freshwater fishes are meager except the works of Abel (1974), Bhaskaran *et al.*(1991), Rani *et al.*, (1998), Bakirel *et al.*(2005), Saxena *et al.* (2005), Manoj *et al.* (2007), Sarma *et al.* (2012) and Opale *et al.* (2013). Hence, it is of interest to determine the toxicity of detergents and its effects on morphology and behavior of *C.batrachus*.

### MATERIALS AND METHODS

Juvenile *C.batrachus* weighing between 200g to 250g were collected from the local unpolluted pond and acclimated to laboratory conditions for 48 hours.

They were fed with grasses. The toxicity and effects of Tide detergent have been evaluated by laboratory bioassay experiments for 96 hours (Ipsen and Feigl, 1970) at 24°C water temperature on *C.batrachus*. Acclimatized specimens were divided into four groups of each consisting of 25 fishes and then transferred to test containers measuring 2.5x2x1.5 ft. holding 20 liters of water. The toxicity was estimated by determining 48 hours, 72 hours and 96 hours exposure values. The fishes were exposed to seven different concentrations (2.5 mg/l, 3.0mg/l, 3.5mg/l, 4.0mg/l, 4.5mg/l, 5.0mg/l, and 5.5mg/l) of detergent and the mortality of the fishes were recorded after 48hours, 72hours and 96hours. One control group was also maintained. In control group unpolluted pond water was kept without addition of detergent. During the experiment the water in the aquaria was changed every 24 hours to maintain the appropriate concentration of detergent in the test solution. The dead fishes were removed from the aquaria as and when noticed. After 96 hours study period, food was given and observed the feeding response. Morphological and behavioural toxicity were also recorded. The LC<sub>50</sub> was obtained by (i) plotting the mortality percentage against the detergent concentrations (Direct method) (ii) plotting Ds and Sg in the same set of axes. The curve

crossed at a dosage value at which the number of animals dying at this and smaller doses was equal to the number of animals living at this and greater doses (Reed-Muench Method of Ipsen and Feigl, 1970). At the concentration of 50% of the detergents the mortality was found to be 100%. The LC<sub>50</sub> values as estimated from the above methods was found to be 4.7mg/l at 48 hours, 4.2mg/l at 72 hours and 3.5mg/l at 96 hours for *C.idella*.

## RESULTS AND DISCUSSIONS

When *C.batrachus* was tested at different concentrations of detergents, their morphological and behavioural changes were studied. The food intake is an important factor governing the growth and reproduction. The growth represents the net outcome of series of biological processes such as food intake, digestion, assimilation, metabolism and excretion (Brett and Groves, 1979). Thus metabolism is elevated; growth will be limited unless the intake of food is increased. Certain environmental factors and pollutants influence the feeding rate, growth rate, metabolism of fishes (Palanivelu and Balasubramanian, 1997; Rani *et al.*, 1998).

Test	Parameter	Fishes from Control Group	Fishes from Experimental Group
1.	Habit	Calm and quiet	Active, move frequently
2.	Body position	Horizontal and slow	Vertical, frequently swimming
3.	Movement	Normal	Erratic body and barbel movement
4.	Body colour	Normal	Pale body colour
5.	Response for food	Slow response	Less response to food
6.	Air water interaction	Normal aeration/oxygenation	Engulf air frequently
7.	Operculum movement	32-38/minute	36-44/minute
8.	Swimming behaviour	Normal swimming	Loss of balance
9.	At the time of exposure	Come to the surface of water	Lethargic, dropped to the bottom of aquarium
10.	Feeding rate	Normal feeding (43.2mg/g/d)	No response for food, occasional jerking body

**Table-1:** Morphological or behavioural changes in *C.batrachus* after exposure to detergent Tide.

During the study period the control fishes were calm and quiet and preferred to confine themselves in to the bottom of aquaria. The control fishes swam slowly and horizontally. Normal fishes showed normal opercular movement (32-38/minute), normal feeding rate (43.2mg/g/day), normal aeration, normal body colour and normal response for food.

Exposure of different fishes to different concentrations of detergents has shown visible morphological changes like slow body movement, erratic barbell movement, pale body colour and abnormal behavioural responses followed by mortality. When treated with highest concentration of detergents about 100% mortality was observed. Within a few minutes after addition of detergents, the exposed fishes tried to engulf air frequently. This probably indicates enhance rate of oxygen uptake under toxicity stress. This is gradually started and showing erratic movement, loss of balance with occasional jerking of their bodies at last. Finally fishes dropped to the bottom of the aquaria and showing lack of sensitivity. Dead fishes showed stretched fins and slimy bodies. Similar reactions were also observed by Choudhury *et al.* (1984), when exposed to pesticides. All detergent destroys the external mucous layer of fishes that protect the fish from bacteria and parasites. Detergent exposed fishes were found slippery due to over secretion of mucous. Detergents may cause systemic toxicity including CNS depression, coma, seizures, hypotension, muscular weakness and fasciculation, collapse, pulmonary edema, and metabolic acidosis (Brant 2012). Omotoso *et al.* (2005) conducted a comparative study on the toxicity of some commercial detergents on Nile Tilapia, *Oreochromis niloticus* and found their adversity to survival of the species. Jain *et al.* (2011) studied on the role of linear alkyl benzene sulfonate using the common detergent "Henko" on *Puntius ticto* and observed the histopathological lesions on gill arches, gill rakers and gill filaments. Jha (2008) studied on toxicological impact of house hold detergent "Surf" on digestive tissue on fresh-water fish *Clarius batrachus* and marked the large scale destruction of the tissues of gastrointestinal mucosa and liver. Rejeki *et al.* (2006) observed significant retardation of growth and

development in *Lates calcarifer* larvae exposed to Alkyl-benzene sulfonate (Topale *et al.*, 2013).

The study suggests that detergent was highly toxic to fishes whether fishes are surface feeder or bottom feeder. Detergents have poisonous effects in all types of aquatic life if they are present sufficient quantities. Exposure of fishes to different sub-lethal concentrations of detergent showed slow movement, pale body colour, abnormal morphological or behavioural responses followed by mortality.

## REFERENCES

1. Abel P.D. (1974): Toxicity of synthetic detergents to fish and aquatic invertebrates: J. Fish Biol., 6 (3):279-298.
2. Bakirel T., O. Keles, S. Karatas, M. Ozcan, G. Turkman and A. Candan (2005): Effect of LAS on non-specific defence mechanisms in rainbow trout, *O. mykiss*. Aquat. Toxicol., 71:175-181.
3. Bhaskaran P., Gopalakrishnaswamy G. and Sathiyabama G. (1991): Impact of commercial detergents on feeding energetic and protein metabolism in the freshwater Teleost fish, *O. mossambicus*. J. Ecotoxicol. Environ. Monit., 1(1): 31-40.
4. Brant S.G. (2012): Toxicology of common household hazards: Courtesy- [http://www.vspn.org/Library/misc/VSPN\\_M01290.htm](http://www.vspn.org/Library/misc/VSPN_M01290.htm)
5. Brett J.R. and Groves T.D.D. (1979): Physiological energetic in fish. Vol.8, Horai W.S. and Randall D.J., Academic Press, New York.
6. Choudhury D.K., Sadhu A.K. and Mukhopadhyay P.K. (1984): Toxicity of two organophosphorus insecticides, Malathion and phosphamidon to the fish *C. striatus*. Environ. Ecol., 2. 143-147.
7. Ipsen and Feigl (1970): In Bancroft's Introduction to Biostatistics, Harper Row, New York.
8. Jain V., Mishra K.D., Madhuri S. and Pandey G. (2011): Linear alkyl benzene sulfonate, a detergent induced toxicity on the gill of *Puntius ticto*. : Int. Res. J. Pharm., 2(10): 76-78.
9. Jha B.S. (2008): Toxicological impact of household detergent, Surf on digestive tissues of

fresh water fish *Clarius batrachus* : “Fish Research”, Ed- Pandey, B. N., APH Pub., New Delhi, pp.107-114.

10. Manivasakam N. (1989): Environmental Pollution. 2<sup>nd</sup> ed, National Book Trust, India.

11. Manoj Kumar, S.P.Trivedi, A.Misra, Shuchi Sharma (2007): Histopathological changes in testis of the freshwater fish, *H.fossilis* (Bl.) exposed to linear Alkyl Benzene Sulphonate. J. Environ. Biol., 28(3): 679-684.

12. Mukherjee B. and Pankajkshi G.V.N. (1995): The impact of detergent on plankton diversity in freshwaters. J. Environ. Biol., 16(3):211-218.

13. Mukherjee B. and Pandey P.N. (2005): Detergents and environmental impact assessment. Biodiversity, Eco-physiology and Conservation of freshwater animals, pp-199-210.

14. Neil O.P. (1985): Environmental Chemistry , Allen and Unwin. London.

15. Omotoso F.O. and Fagbentro O.A. (2005): A comparative study on the toxicity of three commercial detergents on the survival of the Nile Tilapia, *Oreochromis niloticus*: J. Agric. Res. & Dev., 4 (2): 139- 147.

16. Palanivelu V. and Balasubramanian M.P. (1979): Food consumption of *O.mosambicus* exposed to sub-lethal concentration of Cartap hydrochloride. Geobios., 24.51-54.

17. Rani E.F., Elumalari M. and Balasubramian M.P. (1998): Toxic and sub-lethal effects of ammonium chloride on a freshwater fish, *O.mosambicus* . National Academy Sci. Lett., 22:135-141.

18. Rejeki S. Desrina and Mulyana A.R. (2006): Chronic Affects of Surfactant Detergent Linear Alkyl Benzene Sulfonate (LAS) On the Growth and Survival Rate of Sea Bass (*Lates Calcalifer* Bloch) Larvae: J. Coastal Dev., 95 (35): 496-599.

19. Sarma S., Barman N., Kusre D. and Kalita B. (2015): effect of sub-lethal exposure of detergent on gill and liver of *Heteropneustes fossilis* (bl.)

20. Saxena P., Sharma S., Sharma S., Suryavathi V., Grover R., Soni P., Kumar S., Sharma K.P. (2005): Effect

of an acute and chronic toxicity of four commercial detergents on the freshwater fish, *Gambusia affinis*.

J. Environ. Sci. Eng., 47(2):119-24.

21. Topale P.S., Ghaware A.U. and Jadhao R.G. (2013): Effect of detergent Tide on *Paratelphusa jaquemontii* (Rath.) freshwater crab from Vidarbha Region. Int. Res.J. Sci. Eng., 1(1):10-12.

## Impact of Personality on the purchasing behavior of FMCG products in MP

Sunil Kumar Agrawal  
Research Scholar, Barkatullah University,  
Bhopal (MP)

### ABSTRACT

Personality plays a significant role in the consumer buying behavior since different consumers have different personality traits which reflect their buying behavior. The serious problem that marketers must contend with is how to determine when personality is an important factor in buying decision and when it is not and analysing the different personality traits which are dominant among people of one region or another. This research work has the objective of assessing the relationship between personality factors and consumer buying behavior in selected districts of Madhya Pradesh. Survey method of data collection was used in the course of the research. Analysis of data which was collected through questionnaire and Chi-Square test has done. The results indicated that each of the six personality traits adopted exerts significant influence on consumption decision. Hence, the study reveals that the social character of people in the selected region, marketers should target their strategies on convincing the social influencers within any age grade, as their purchase decisions will go a long way in commanding the brand acceptance of each product.

### INTRODUCTION

Personality is one of the most studied concepts in Consumer Behavior. Personality is the result of social, economic and environmental influences on the person concentrated. Rather we can say that personality of an individual is the sum total of his hereditary. One individual is different from others not only in the physical aspects, but also in personality trait types. It is one of the factors that influence one's behavior in the marketplace. What a consumer purchases, when and how he or she purchases are influenced by his personality types. That is why marketers are interested in understanding the meaning of personality and traits as well as how these traits affect consumer behavior. *According to Harrold H. Kasssarjian 1981* it is the total of many personal and individual characteristics that determine his response tendencies to the environmental stimuli.

There are many important traits which form our personality .Our behaviour is the manifestation of these personality traits and vice versa. Let's talk about, how these trait influences our consumer behaviour taken for the study. What we purchase

and use is very much regulated by our nature and personality, as follows-

#### Various Personality Traits Types

During this research the researcher has studied and conducted research on most commonly used personality traits - **Openness** – Individuals those who are open, enjoys adventure and closed to several social groups. These peoples are very curious and experience the new environment. This category measures your range of interests and fascination with novelty. People who score 'High' in this trait are often creative, curious and artistically sensitive and also may have a broad range of interests. **Accepting** - Those individuals who fall under this category are always very happy as they accept the truth and reality of the circumstances. **Social** - Social character traits are the attitudes an individual have towards other people and their belongings. The Universal Law for Social Character states that an individual should not to cause harm or losses to others, because others may ultimately come back and cause harm to you. Instead, try to do things that will benefit others. **Convincing** – These types of individuals are very expressive and they tactfully behave in certain types

of environment and successfully keep their things in a very convincing way. They falls **Leadership** principles. These peoples normally having a tough individual quality and they are few in No. and leads rest of the others. They have their own perceptions, beliefs and attributes. **Enterprising** – These individuals have chosen their own ways and means to attain certain goals. They have very strong acumen and will to perform the task despite being several or no failures.

## **Personality Affects Consumer Buying Decision Making**

The biggest challenge with the marketing is to identify who are the buyers and what they do. This task is difficult with the marketers to understand the real consumer. This is to learn the consumer behavior and their purchasing intention. This is logical to assume that there is an individual difference which determines the consumer purchasing behavior. We have tried to find relationship among personality type and purchasing behavior.

## **Literature Review**

**Bhasin. H, 2006** stated that the consumer purchasing choice towards products differs with the difference in personality. Consumer product choice indicates the personality. The type of house, furniture, cloths, jewelry, utensils, house hold consumer goods he purchases may reflects his personality. It is seen that the peoples belong to higher class tend to buy expensive goods. Marketers therefore develop their marketing campaign, advertising and promotional campaign keeping in mind the personality of an individual as their target consumer.

**Baumgartner. H, 2002** state that understanding the individual person in his or her role as a consumer should be a key issue in the study of consumer behavior, but in order to realize this vision the scope of personality research has to be broadened.

## **Objectives**

The main objective of the study is to investigate consumer's personality towards FMCG products

amongst people living in Madhya Pradesh. It will help:

1. To examine the purchasing behavior, pattern, method of negotiation, choice of outlet by the consumer purchaser consequent to their attitude and personality.
2. To estimate the brand loyalty of the consumer for different types of FMCG products selected under study.

## **Hypothesis**

H01: There is no significant difference in the consumer attitude & personality for FMCG products if they are classified on the basis of **gender** in Madhya Pradesh.

## **Methodology**

This study has been designed in line with survey research using data collected from both primary and secondary sources. The secondary sources comprises of mainly text books, journals and periodicals, while primary source is only from questionnaires.

The study has been administered from 1000 respondents of selected cities of Madhya Pradesh – Bhopal, Sehore, Raisen, Hoshangabad and Betul. And based on their responses analytical study carried on the purchasing behaviour of the Indian family through chi-square test.

## **Data collected and summarize in present study to evaluate buying preference on the basis of personality type**

The survival and growth of business in today's fast-paced, globalized and increasing competitive market is dependent on their ability to satisfy—and even delight customers. Customers' satisfaction and delight hinge heavily on retailers' identifying, understanding and implementing in the marketing strategies, information on the behaviour consumers exhibit in searching for fulfilling his/ her demand. The given question deals with how various personality type consumers chooses different form of purchases.

## **Q3- While buying what are your buying preference?**

- (a). Cash
- (b). Credit

(c). Instalments

**Table 1 - The table below depicts that all the 963 respondents given their responses.**

Answered	Non-Answered	Total
963	00	963
100%	0.0%	100%

Source: Research Survey

**Table 2 – A comparison of buying preference on the basis of personality.**

Personality	Question-3			Total
	Cash	Credit	Instalments	
<b>Accepting</b>	246	20	40	306
Percentage	80.4%	6.5%	13.1%	100.0%
<b>Open</b>	177	12	28	217
Percentage	81.6%	5.5%	12.9%	100.0%
<b>Social</b>	214	20	22	256
Percentage	83.6%	7.8%	8.6%	100.0%
<b>Convincing</b>	31	8	6	45
Percentage	68.9%	17.8%	13.3%	100.0%
<b>Leadership</b>	96	4	13	113
Percentage	85.0%	3.5%	11.5%	100.0%
<b>Enterprising</b>	21	2	3	26
Percentage	80.8%	7.7%	11.5%	100.0%
<b>Total</b>	785	66	112	963
Percentage	81.5%	6.9%	11.6%	100.0%

Source: Research Survey

**Explanation and Interpretation-** The above table depicts that out of the total 963 respondents, the researcher has tried evaluating various personality type consumer and framed their response on the basis of the question. While buying what are your buying preferences? Three options to this question has been given and the data is collected for – **cash** - 80.4% accepting, 81.6% open, 83.6% social, 68.9% convincing, 85.0% leadership, and 80.8% enterprising, **credits-** 6.5% accepting, 5.5% open, 7.8% social, 17.8% convincing, 3.5% leadership, and 7.7% enterprising, **instalments-** 13.1% accepting, 12.9% open, 8.6% social, 13.3% convincing, 11.5% leadership, and 11.5% enterprising. Study depicts that the maximum number of personality type

consumers prefer buying in cash, while they go for buying FMCG individually or for their family use.

### Findings

The hypothesis have been framed to answer the issue arising in finding solutions. Researcher has chosen 6 major personality traits both Neo-Freudian and trait theory as the variables. To answer issues the questions relating to personality hypothesis the test question was –While buying what are your preferences. (Options – Cash, Credit & Instalments)?

### Hypothesis 1

Null Hypothesis

*H01: There is no significant difference in the consumer's personality in buying FMCG products if*

they are classified on the basis of gender in Madhya Pradesh.

Alternative Hypothesis

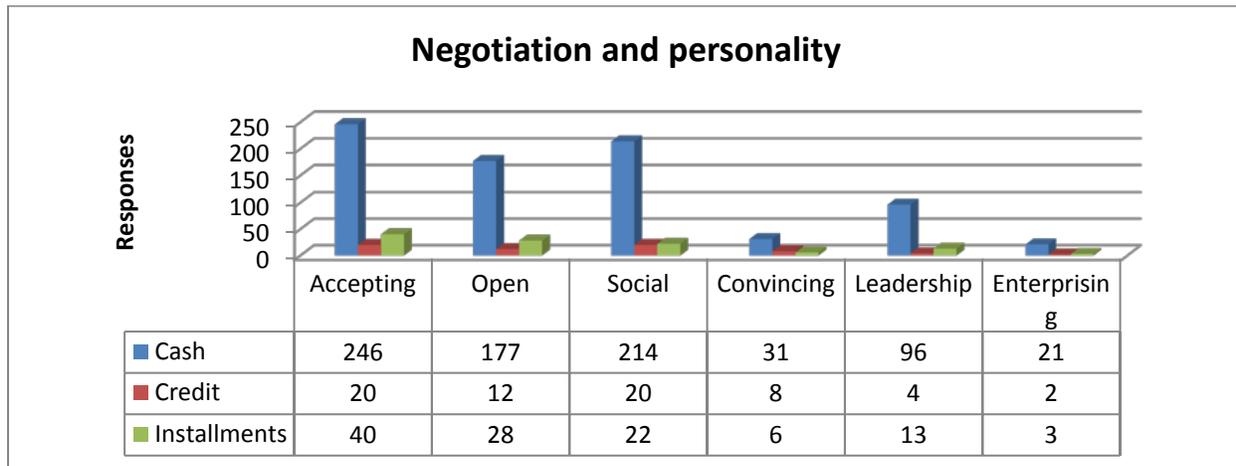
HA1: There is significant difference in the consumer's personality in buying FMCG products if they are classified on the basis of gender in Madhya Pradesh

**Table 1. Response to Questionnaire and Calculation of Chi- Square**

Pearson Chi-Square	Degree of Freedom	Asymp. Sig. (2-Sided)
14.838	10	0.138

Source – Calculation on the basis of field survey

**Figure 5.11 Graph depicting the negotiation preference on the basis of personality type.**



Graph depicts that how various personality type consumers prefer to negotiate with the retailer during FMCG purchases. The study reveals that most of the personality type – accepting, open, social, convincing, leadership and enterprising have opined for cash. They usually buy goods in cash and the shopkeepers prefer to charge for the sold goods on subsidised rates. Because cash helps the shopkeepers to pay for the stock to the distributors and stockiest.

### 5.12 Conclusion -

Measuring customer's attitude has become an important phenomenon in the FMCG industry. FMCG industry should deliver quality goods so that customers are satisfied and have positive attitudes

Since the table value of Chi-square is more than the calculated value at 5% level of significance, hence therefore it has been proved that the buying preference of different personality type consumer is same and as in such a case Null hypothesis (Ho) hold good, the variance in the sample statistics is not large in such case. It shows that the accepting, open, social, convincing, leadership and enterprising personality type consumers has utmost similar sort of buying preference when going for FMCG purchases. Therefore Null hypothesis is accepted. (Please refer Table No. 1&2 for detail work out there. This is a sub hypothesis to main hypothesis no.1, as indicated above

towards the products. Personality plays a significant role in the consumer buying behavior since different consumers have different personality traits which reflect their buying behavior. The study was conducted in the 5 districts of MP area to find out the factors of personality responsible.

Consumers' purchase and usage of product offerings is reflective of his personality. Consumers generally buy those products/brands, whose personality matches their own. For marketers this is important as they must know that consumers make purchase decisions to support their personality. Thus, it need to understand the congruity between personalities of the customers, Vis a Vis, the brand personality and image of the product offering. The study of

consumer personality can be useful in the following ways:

1. Every person is unique in oneself, and thus personality reflects individual differences. Yet, while we are different, we may be similar to each other on a trait (s), and could constitute a personality type (s). A person's decision with regard to the brand as well as the timing and place of purchase, the amount purchased, its usage, are all based on personality. This could have implications for a marketer who could treat each personality type as a separate segment, position his offering accordingly and design the 4Ps. Drawing upon from various theories on personality, marketers can formulate and implement marketing strategies, through first segmenting the market, targeting it, positioning their product offering, and designing the marketing mix accordingly. This would help classify segments, provide the product offering accordingly, and design the mix in terms of price, place and promotion.

2. Consumer decision making is closely related with personality, and individuals would buy such products, which match their concepts and personalities. The study of consumer behaviour helps to understand how the personality come into play in the marketplace. A consumer tries to relate his personality with the personality of the product offering, and the brand.

3. Similarly, there also exists a relationship between consumer and brand personality. Consumers match the product and/or brand personalities, with their taste, and buy those where they find a close or perfect match. In this manner they attempt to reaffirm and preserve their personality. Thus, the study of consumer personality (personality traits and types as well as general and consumption specific personality traits), is important, and holds relevance for a marketer in the design, development and implementation of his marketing strategies. After gaining an insight into the various personality types, a marketer could design his marketing strategy so to be able to serve consumers with the varying personality types in a better manner, leaving them more satisfied.

## References

1. Assael, H. (1992), *Consumer Behavior & Marketing Action*, 4th. Ed., PWS Kent, Boston, MA.
2. Dursun Tolga.(2009). *Process to Create a Brand Personality and a Study on Brand Personality*, Marmara İletişim
3. Ewen, R. B. (1998). *Personality: A topical approach*. Mahweh, NJ: Erlbaum.
4. Eysenck, H. J. (1991). Dimensions of personality: 16, 5, or 3?--Criteria for a taxonomic paradigm. *Personality and Individual Differences*, 12, 773-790.
5. Loudon, D.L. and Bitta A.J. Della, *Consumer Behavior*, Fourth Edition, 2002, Tata McGraw-Hill, New Delhi.
6. Kassarian, H. H., Sheffet, J. M. (1991). "Personality and Consumer Behavior An update" In H. H. Kassarian and T. S. Robertson (Eds.), *Handbook of Consumer Behavior*, 4th ed, 281-303. Englewood Cliffs, N.J. Prentice- Hall International Edition
7. Kotler P., and Keller K.L., ( 2009) *Marketing Management*, Thirteenth edition, . Pearson.
8. Peter, P.J. and Olson, J.C.,( 2005), *Consumer Behavior and Marketing Strategy*, Seventh Edition, . McGraw-Hill Higher Education.
9. Schiffman, L.G. and Kanuk, L.L.,( 2004 ) *Consumer Behavior*, Eight Edition, ., Prentice Hall, India.
10. Wells W.D. and Prenskey, D.,( 1996) *Consumer Behavior*, 1996, John Wiley & sons, Inc. Joint

## Attitude impact on the buying behaviour of FMCG in Madhya Pradesh

Sunil Kumar Agrawal  
Research Scholar, Barkatullah University,  
Bhopal (MP)

### ABSTRACT

Consumer's attitude normally reflects as an obstacle as well as an advantage for the consumers and marketers. While developing a marketing strategy, it is very important for the marketers to understand properly about the consumer's attitude for predicting the behaviour. There are three major components for predicting the consumer buying behaviour – Beliefs, Attitude, & Behaviour. They should be taken up distinctly from each other.

In this research paper the researcher tries to evaluate the attitude impact on the purchasing behaviour on fast moving consumer goods. With the help of the questionnaire he tries to study the consumer attitude, through this, whether his purchases have been affected by offers and discounts? Whether the consumer prefer to purchase these FMCG goods from the same place regularly? Whether how much he is inclined towards brand switching? The theoretical part is equally important for better understanding of the consumer attitude. Analytical study have been carried out for proper investigation of consumer attitude.

### INTRODUCTION

A consumer thinks, perceives, and learns and is a psychological being, which has motives, personality, and attitudes. These psychological forces affect the behavior of the consumers and marketers seek to influence or may capitalize on them. Businesses and social agencies alike frequently succeed in altering behavior by changing attitudes towards a product, service, or activity; and these changes can result in injurious or beneficial in consumption decisions. This chapter recognizes that consumer attitudes can only be indirectly changed by altering its components. It tries to show some illumination on the concept of attitudes, its functions, its measurements, its components, the modification of its components, its strategic marketing implications. A good grasp of these will most likely enable businesses design far-reaching rent-yielding strategies.

#### Definition of Attitude

The term attitude is defined as a general evaluation of a product or services for overtime. Consumer's buying habits are affected by the personal motives. The motive is governed by attitude **Solomon (2008)**

#### Literature Review

*Hoyer and MacInnis (2001)* whether an individual's attitude will affect his/her behaviour do not depend on factors: level of involvement or elaboration, knowledge and experience, accessibility of attitudes, situational factors and also personality variables. *Soonthonsmai (2001)* Purchase behaviour is the consumer act of purchasing some specific product or service. *Ferrel (1991)* find out in his research -"There is a lot of controversy on how a positive attitude towards a company or a brand can influence behaviour". These two authors believe that consumer attitude towards a company and its products greatly influences the success or failure of the firm's marketing strategy. *Solomon (2004)* says that there is no evidence that such a relationship can be established or not. *Fishbein (1963)* Models in attitude measurement to predict and understand buyer behaviour are important and should be applied to different types of industry.

*Solomon (2008)* explained in research that "Attitude in marketing terms is defined as a general evaluation of a product or service formed over time. An attitude

satisfies a personal motive—and at the same time, affects the shopping and buying habits of consumers. While *Dr. Lars Perner* (2010) defines consumer attitude simply as a composite of a consumer's beliefs, feelings, and behavioral intentions toward some object within the context of marketing. A consumer can hold negative or positive beliefs or feelings toward a product or service. A behavioral intention is related with consumer's belief or feeling towards the product or service.

*Endler and Magnusson* (1976) *Magnusson and Endler* (1977) stated in his research "The relationship (or lack of relationship) between personality constructs and behavior is as much a problem for the field of psychology as it is for consumer behavior". With the development of the person-situation controversy, a challenge was raised to many traditional and apparently inadequate notions of personality. *Pervin* (1982) further clarifies that the basic problem involves understanding the consistency of personality in the face of behavioral variability differs from situation to situation. *Belk* (1975) examined the issue has particular importance in the study of consumer behavior which is known to be quite situation dependent

*Fishbein* (1983) researched about "Multi-attribute attitude model", have proved useful in specifying the different elements that work together to influence people's evaluations of attitude objects and ultimately predict consumer attitudes; products or services may be composed of many *attributes*, or qualities. Some of which may be more important than others to particular people. Also a person's decision to act on his or her attitude is affected by other factors. Whether buying a product would be met with approval by friends and family? The complexity of attitudes is underscored by multi-attribute attitude models, in which sets of beliefs and evaluations are identified and combined to predict an overall attitude.

*Doob* (1947) find out the learning theory principles to the attitude formation process, considered attitude to be ". . .(1) an implicit response, (2) which is both (a) anticipatory and (b) mediating in

reference to patterns of overt responses, (3) which is evoked (a) by a variety of stimulus patterns (b) as a result of previous learning or of gradients of generalization and discrimination, (4) which is itself cue- and drive-producing, (5) and which is considered socially significant in the individual's society." Generally, later theorists maintained the essence of *Doob's* conceptualization while frequently emphasizing, after *Allport* (1935), that the implicit (i.e., internal) attitudinal response is of an evaluative nature (cf. *Rhine*, 1958; *Staats & Staats*, 1958). Our interest, of course, is with the process by which a subject acquires that implicit evaluative response called attitude.

*Kassarjian* (1971) studied Consumer attitudes have been used to predict energy conservation, recycling and ecologically conscious purchase and use of products. Further to this the consumers' reaction toward a gasoline that reduced air pollution and found that there was a positive correlation between concern for air pollution and willingness to pay higher prices for it. Attitude toward air pollution was the most important variable in determining consumers' behavior toward the product.

### Objectives of the Study:

The main objective of the study is to investigate consumer's attitude towards FMCG products amongst people living in Madhya Pradesh. It will help:

1. To examine the purchasing behavior, method of negotiation, choice of outlet by the purchaser consequent to their attitude
2. To estimate the brand loyalty of the consumer.
3. To understand and formulate the strategies of sale to consumer purchasers having different attitude coming to purchase from kirana store –mall.

### Hypothesis:

#### Null hypothesis:

H01: There is no significant difference in the consumer attitude for FMCG products if they are

classified on the basis of **occupation** in Madhya Pradesh.

H02: There is no significant difference in the consumer behaviour for FMCG products if they are classified on the basis of **gender** in Madhya Pradesh.

H03: There is no significant difference in the consumer attitude for FMCG products if they are classified on the basis of **region** in Madhya Pradesh.

### Research Methodology

This study has been designed in line with survey research using data collected from both primary and secondary sources. The secondary sources comprises of mainly text books, journals and periodicals, while primary source is only from questionnaires.

The study has been administered from 1000 respondents of selected cities of Madhya Pradesh – Bhopal, Sehore, Raisen, Hoshangabad and Betul. And based on their responses analytical study carried on the purchasing behaviour of the Indian family through chi-square test.

### Theoretical Underpinnings

**Cognition (Beliefs)** – This is the first components of attitude. A consumer attitude may be both positive and negative towards certain products (for example-coffee is very good in taste. In negative term – coffee is easily spilled and stains on clothes). There are some neutral beliefs also (for example – coffee is black) and there are certain different situations depending on the person or the situation (for example – coffee is hot and it stimulates good during cold days and at the same time it affects during hot summer days and disturbs sleep), Since consumer holds various beliefs, so it may be difficult to draw some inferences to a bottom line. Overall belief is that –McDonalds is good or bad. The multiple attribute model sometimes known as Fishben model and it attempts to summarize overall attitudes into one score using the equation.

**Affect (Feelings)** – Consumer hold some feelings towards brand or some other product, normally

speaking these feelings are based on beliefs for example, few people feel nausea, while thinking about a hamburger just because of tremendous amount of cheese, fat and sausages and toppings it contains. There can also be another feeling which is relatively independent in nature, - for example cutting down trees is normally wrong in view of extreme environmentalist, but may be positive affect toward Christmas tree, as he or she believes that these trees would associate during Christmas as a child. Now the next component is behavioural intention.

**Behavioral (Intention)** – This is what the consumer plans to do with respect to some object for example – whether he will buy or not buy that particular brand of product. At certain point of time, the same thing would reflect as an affect or belief but sometimes it may reflect other circumstances. Consumer does not really like a restaurant, but he or she has to go there just because it is best place for hangout for his or her friends.

### Changing attitudes to change behaviour

Attitude and behaviour are woven into the fabric of daily life. Research has shown that individuals register an immediate and automatic reaction of "good" or "bad" towards everything they encounter in less than a second, even before they are aware of having formed an attitude. Advertising, political campaigns, and other persuasive media messages are all built on the premise that behaviour follows attitude, and attitude can be influenced with the right message delivered in the right way.

### Attitude understanding – Challenger for marketers

**Oskamp & Schultz (2005)** narrates attitude has been formed on the basis like positive and negative personal experience. It would be possible that outside influences of other individuals persuaded the consumer opinion for the same products or services. Attitudes are relatively enduring. Attitudes are learned predisposition to proceed in favor of or opposed to a given object. In marketing context, an attitude is the filter to which product or services are scrutinized.

Researcher has try to evaluate the different attitude type respondents to know how they react on brand shifting. What are their thinking towards the frequent change of brands? The collected data has statically evaluate on the basis of the following questions asked with various respondents.

1. Is your FMCG purchase affected by offers or discounts?
  - A. Always
  - B. Often
  - C. Sometimes
  - D. Never
2. Do you prefer to purchase FMCG goods from the same place regularly?
  - A. Yes
  - B. No
  - C. Often
3. How frequently you change the brand?
  - A. Very Often
  - B. Never
  - C. Every Time
  - D. Some time

### Hypothesis 1

*H01: There is no significant difference in the consumer attitude for FMCG product if they are classified on the basis of occupation in Madhya Pradesh.*

Researcher has chosen 4 major Attitude factors variables in line with the formulated hypothesis. The hypothesis tested on the question related to Attitude – How frequently do you change the brand. (Options – Very often, Never, Every time, Some time). The

**Table 2 Table below depicts that all 963 respondents gave their responses regarding consumers frequent brand change habit.**

Answered	Non-Answered	Total
963	00	963
100%	0.0%	100%

Source: Research Survey

validity of the responses has been tested with the help of Chi-square test.

**Table -1 Response to Questionnaire and Calculation of Chi- Square**

Pearson Chi-Square	Degree of Freedom	Asymp. Sig. (2-Sided)
19.860	9	0.019

Source – Calculation on the basis of field survey

Since the calculated value of chi-square is more than table value at 5% level of significance. Hence alternate hypothesis ( $H_a$ ) holds good, as the sample variance is large. The responses from various respondents vary significantly. From the field survey it has been revealed that the consumer life style, habits, and taste differs this can be one reason of brand shifting and some time product - price, availability and convenience in buying also become responsible for the frequent changes of brand. Thus, alternate hypothesis is accepted as the sample variance is large. This is a sub hypothesis to the main hypothesis no. 1, as indicated above in this Research paper

*HA1: There is significant difference in the consumer attitude for FMCG product if they are classified on the basis of occupation in Madhya Pradesh*

It holds true and is accepted, Please refer Table No. 2 & 3, where details are worked out).

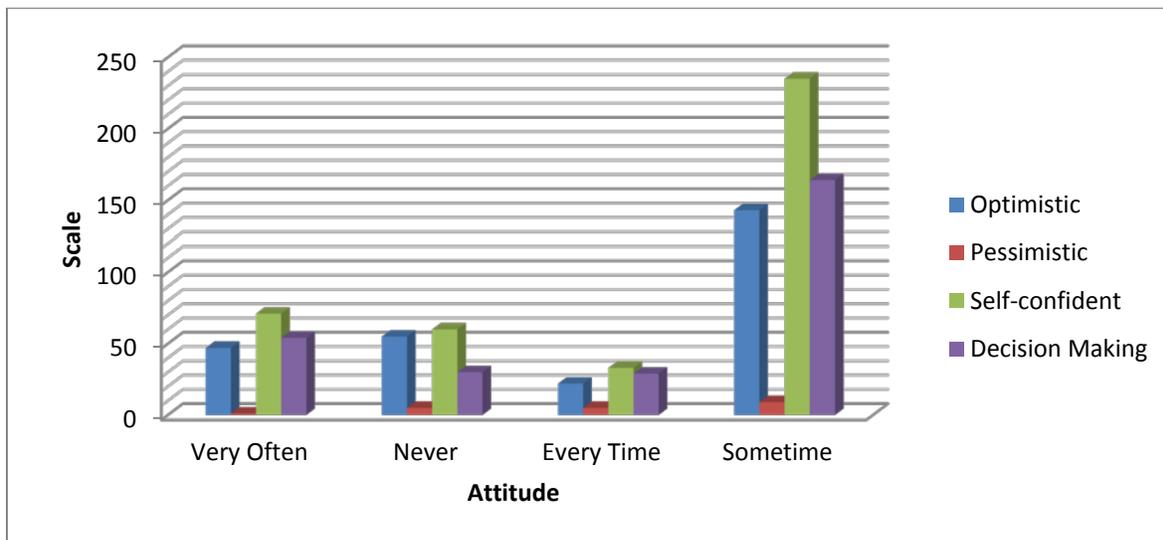
**Table 3** Table indicates the attitude of respondent towards frequent brand change habit.

Attitude	Options				Total
	Very Often	Never	Every Time	Sometime	
<b>Optimistic</b>	47	55	22	143	267
<i>Percentage</i>	17.6%	20.6%	8.2%	53.6%	100.0%
<b>Pessimistic</b>	1	5	5	9	20
<i>Percentage</i>	5.0%	25.0%	25.0%	45.0%	100.0%
<b>Self-confident</b>	71	60	33	235	399
<i>Percentage</i>	17.8%	15.0%	8.3%	58.9%	100.0%
<b>Decision Making</b>	54	30	29	164	277
<i>Percentage</i>	19.5%	10.8%	10.5%	59.2%	100.0%
<b>Total</b>	173	150	89	551	963
<i>Percentage</i>	18.0%	15.6%	9.2%	57.2%	100.0%

Source: Research Survey

**Explanation and Interpretation-** The above table depicted that out of the total 963 respondents, the researcher has try to find it out about how the different attitude respondent responded to the question that – **How frequently you change the brand?** Four options (Very often, Never, Every time and Some time) provided to reply to this question, and the data has been collected. The various attitude opine - ‘**Optimistic**’ (17.6% Very often, 20.6% Never, 8.2% Every time, 53.6% Some time). ‘**Pessimistic**’ (5.0% Very often, 25.0% Never, 25.0% Every time, 45.0% Some time). ‘**Self-Confident**’ (17.8% Very often, 15.0% Never, 8.3% Every time, 58.9% Some time). ‘**Decision Making**’ (19.5% Very often, 10.8% Never, 10.5% Every time, 59.2% Some time).

**Figure 1** Graph depicting various attitude respondents V/s frequency of brand switching.



Source: Research Survey

Graph indicates that majority of ‘Self-confident’, ‘Decision Making’ & ‘Optimistic’ attitude type respondents frequently changes their brands as they opine to ‘Sometime’. As sometime the consumers changes their brands due to the convenience,

product availability, product quality, product features, product manufacturing contents, product competitive prices and etc.

Results indicate a significant difference among experienced consumers' cognitive processes with respect to whether switching behavior is attributed to extrinsic motives (price, coupon) or intrinsic incentives (the desire to try a new brand). If extrinsic incentives are the cause of switching, consumers are willing to switch despite a higher level of satisfaction with the previous brand, as compared to switching caused by intrinsic motives. Regarding consumers with limited consecutive purchase experience, no significant difference was found between consumers' brand choice prior to switching behavior (e.g., Faison, 1974; Hirschman and Wallendorf, 1980; McCann, 1974).

## Hypothesis 2

*H02: There is no significant difference in the consumer behaviour for FMCG products if they are classified on the basis of Gender in Madhya Pradesh.*

The hypothesis tested on the question related to Environment (Consumer behaviour) – What is reaction of the retailer during price negotiation. (Options –Very happy, Some what happy, Bad, No reaction). Hypothesis tested on Gender (Male and Female)

**Table 4 - Response to Questionnaire and Calculation of Chi- Square on the opinion based on Gender (Male & Female)**

Pearson Chi-Square	Degree of Freedom	Asymp. Sig. (2-Sided)
12.466	3	0.006

Source – Calculation on the basis of field survey

Since the calculated value of Chi-square is more than table value at 5% level of significance, therefore alternate hypothesis (Ha) holds good in this case. Moreover the sample variance is large in such case, the feedback of male and female consumers vary significantly. Study depicts that there is a high level variance in male and female consumer's responses regarding the retailer's behavior during purchases done by them on several occasions. Therefore alternative hypothesis is accepted. This is a sub

hypothesis to main hypothesis No.2, as indicated in this research paper above.

*HA2: There is significant difference in the consumer behaviour for FMCG products if they are classified on the basis of Gender in Madhya Pradesh.*

It holds true and is accepted, (Please refer above Table No. 2 & 3, where details are worked out).

## Hypothesis 3

*H03: There is no significant difference in the consumer behaviour for FMCG products if they are classified on the basis of Region in Madhya Pradesh.*

The hypothesis is tested on the question related to Environment - Consumer behaviour – What is the reaction of the retailer during price negotiation. (Options –Very happy, Some what happy, Bad, No reaction). Hypothesis tested on Region wise (Urban and Rural)

**Table 5 Response to Questionnaire and Calculation of Chi- Square on the opinion based on Region wise (Urban & Rural)**

Pearson Chi-Square	Degree of Freedom	Asymp. Sig. (2-Sided)
16.144	3	0.001

Source – Calculation on the basis of field survey, 2015

Since the calculated value of Chi-square is more than the table value at 5% level of significance, therefore alternate hypothesis (Ha) holds good in this case. As the sample variance is large in such case, the consumption pattern of rural and urban consumers vary significantly depending upon the business environment from where the individual purchases FMCG for his personal use. Therefore alternative hypothesis is accepted.

*HA3: There is significant difference in the consumer behaviour for FMCG products if they are classified on the basis of Region in Madhya Pradesh.*

This is a sub hypothesis to the main hypothesis No-3, below Table No. 6 & 7, where details are worked out. as indicated above in this research paper Please refer

**Table 6** - The table below depicts that out of the 963 respondents 960 (99.7%) answered and 3 (0.3%) did not responded to the answer.

Answered	Non-Answered	Total
960	3	963
99.7%	0.3%	100%

Source: Research Survey

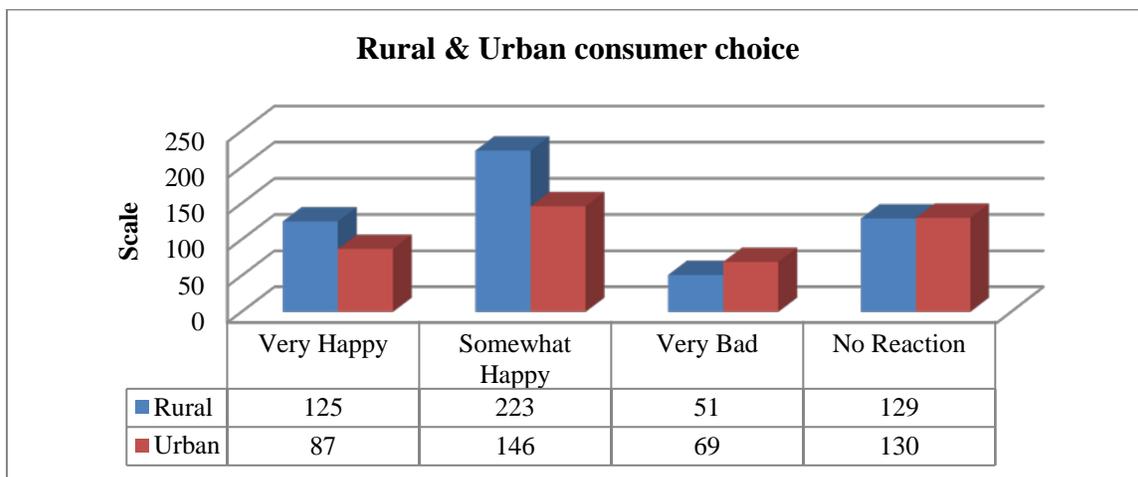
**Table 7** – A comparison of rural and urban consumer feedback on retailer reactions during price negotiation.

Region					Total
	Very Happy	Somewhat Happy	Bad	No Reaction	
Rural	125	223	51	129	528
Percentage	23.7%	42.2%	9.7%	24.4%	100.0%
Urban	87	146	69	130	432
Percentage	20.1%	33.8%	16.0%	30.1%	100.0%
Total	212	369	120	259	960
Percentage	22.1%	38.4%	12.5%	27.0%	100.0%

Source: Research Survey

Explanation and interpretation – The above table depicting that out of the total 960 respondents 125 (23.7%) rural and 87 (20.1%) urban consumer say retailer is very happy, 223 (42.2%) rural and 146 (33.8%) urban says somewhat happy, 51 (9.7%) rural and 69 (16.0%) urban replies for the option bad, 129 (24.4%) rural and 130 (30.1%) urban pointed no reaction This would be possible often the retailers are seems to be very happy during the price negotiation done by the rural and urban consumers. Because they are old customer of his shop and the shopkeeper doesn't want to lose such kind of permanent at the shop. Though he may earn low profit but regular earning is there with that shopkeeper. Still the more no. of Indian consumer feels very happy where he is having a liberty of doing price negotiation.

**Figure 2** Graph depicting the product categorization on the basis of rural and urban consumer



Graph depicts that during price negotiation they are not very much happy but because some of the buyers are the regular clients of that particular shop that's why the retailer are somewhat happy. The reason behind is somewhat happy is that he doesn't want to lose this type permanent consumers permanently. And welcome the price negotiation.

## Hypothesis 5

*H05: There is no significant difference in the consumer behaviour for FMCG products if they are classified on the basis of Occupation in Madhya Pradesh.*

The hypothesis tested on the question related to Environment (Consumer behaviour) – What is the reaction of the retailer during price negotiation. (Options –Very happy, Some what happy, Bad, No reaction). Hypothesis tested on parameter Occupation (Govt. Service, Private, Business, Agriculture, and Retired)

## Table 8- Response to Questionnaire and Calculation of Chi- Square on the opinion based on Occupation

**Table 9** - The table below depicts that out of the total 963 respondents 961(99.8%) answered and 2 (0.2%) did not responded to the answer.

Answered	Non-Answered	Total
961	2	963
99.8%	0.2%	100%

Source: Research Survey

**Table 10** – A comparison of price negotiation reaction of retailer on the basis of occupation

Employment					Total
	Very Happy	Somewhat Happy	Bad	No reaction	
Govt. Service	30	60	25	46	161
<b>Percentage</b>	18.6%	37.3%	15.5%	28.6%	100.0%
Private Service	30	44	27	44	145
<b>Percentage</b>	20.7%	30.3%	18.6%	30.3%	100.0%
Business	25	60	19	62	166
<b>Percentage</b>	15.1%	36.1%	11.4%	37.3%	100.0%
Agriculture	119	190	44	94	447
<b>Percentage</b>	26.6%	42.5%	9.8%	21.0%	100.0%
Retired	9	15	5	13	42
<b>Percentage</b>	21.4%	35.7%	11.9%	31.0%	100.0%
Total	213	369	120	259	961
<b>Percentage</b>	22.2%	38.4%	12.5%	27.0%	100.0%

Source: Research Survey

Pearson Chi-Square	Degree of Freedom	Asymp. Sig. (2-Sided)
35.331	12	0.000

Source – Calculation on the basis of field survey, 2015

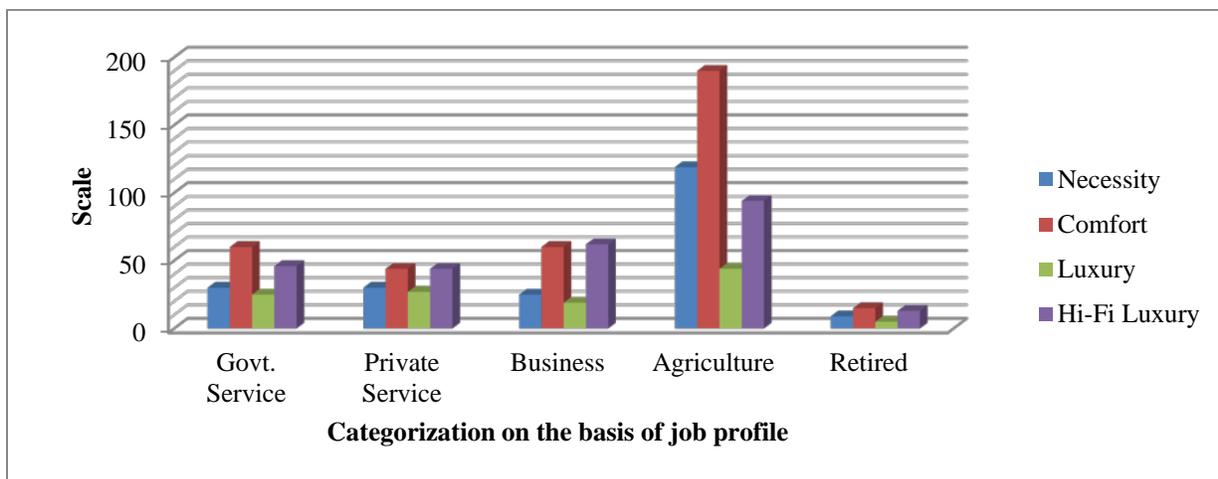
Since the calculated value of Chi-square is more than table value at 5% level of significance, therefore alternate hypothesis (Ha) holds good.as the sample variance is large in this case, the feedback regarding the retailer behavior has been recorded on the basis of their employment status which vary significantly. Therefore alternative hypothesis is accepted. Hence it is observed that there is a huge difference in retailer's behavior which has been noticed by different consumers working in different profile of segments. Hence alternate hypothesis (Ha)

*HA5: There is significant difference in the consumer behaviour for FMCG products if they are classified on the basis of Occupation in Madhya Pradesh.*

It hold good and is accepted. Please refer below Table No. 9 & 10, where details are worked out.

**Explanation and Interpretation-** The above table depicts out of the total 961 respondent, the researcher has tried to find it out about how the various types of consumers do negotiate the price with the retailer during the purchasing of FMCG and researcher then collected the feedback for the various options to the question. The replies for the options for - very happy (18.6% govt. employee, 20.7% private sector employee, 15.1% business people, 26.6% agriculture, 21.4% retired people ), somewhat happy (37.3% govt. employee, 30.3% private sector employee, 36.1% business people, 42.5% agriculture & 35.7% retired people), bad (15.5% govt. sector employee, 18.6% private sector employee, 11.4% business, 9.8% agriculture & 11.9% retired person). While there was no reaction with (28.6% govt. employee, 30.3% private sector employee, 37.3% business people, 21.0% agricultural people and 31.0% retired people)

**Figure 3** Graph depicting the product categorization on the basis of their employment.



**Graph depicts that agricultural based respondents opine that the FMCG goods they are using as a daily need falls under the category of necessity and comfort.**

### Discussion and Recommendations

Negotiation is the birth right of Indian consumer (feel so)—it seems because they usually try to influence the seller with his logics of negotiation. Their negotiation is not only stick to FMCG purchases but they try negotiating each and every purchases of his life. But it is also true that the shopkeeper’s success story lies on this negotiation. And his failure is also depends on this negotiation. As the Indian consumer has this perfect skills of price negotiation and if shopkeeper is not clever enough to handle this situation, so this would be possible about his fame and defame.

Seller’s behaviour is one of the most important aspect in attracting consumer for their purchases. It has seen that if you buy goods from a nearby Kirana store, he treats you well may he will enquire you about your family members during purchases. The reason behind his interaction is happened due to your long association with that retailer. And many a time different family members from your family would have visiting that particular shop during your absence. So he would have a complete details about your family members. So this kind of personal touch has normally attract consumers to buy goods from that particular shop regularly. These are the places where we free to asking for offers and discounts.

The customers normally buys goods form the place where they get the liberty of bargaining. There is a

perfect price tag for the products. Because this is the mindset of most of the Indian consumer that they buy goods if the price of the product or cost is low for them. It has seen that when the price is low sales increases (law of demand) and the prices up, sales down. It happens when the discount is allowed to the consumer and the consumer has to pay less price than the determined prices. So that he may buy the goods in quantity.

There is a theory relating to price when price down, purchasing power of consumer goes up means with less money he get more products to buy. Similarly when discounts is offered in terms of cash concession or in terms of more products the sale increases. Price and its fluctuation affects the total quality of goods purchase.

Motivation refers to the process that care consumer to behave as they do. It occurs when need is aroused which consumer wishes to satisfy. Once the need for a product arise in the consumer he feels a desire to fulfill by purchasing and consuming the product. He remains un satisfied and feels uncomfortable till the need is satisfied example when a person feels that his teeth should sparkle like jewels he thinks in a tooth paste which can give him that glow, and those who are to prefer getting their teeth on the verge of decay or feel pain. They need another kind of brand of tooth paste which stop the decay and care for his teeth.

Environment to consumer and seller plays a vital role in the entire process in buying behaviour. It reflects the factors which are responsible for their behaviour. Local seller has the all-time liberty to maintain his owns selling strategy, whereas big stores and malls have several fixed policy which they have to follow and they cannot form their own strategy for individual consumer.

## Conclusion and Implication

Results indicate a significant difference among experienced consumers' cognitive processes with respect to whether switching behavior is attributed to extrinsic motives (price, coupon) or intrinsic incentives (the desire to try a new brand). If extrinsic

incentives are the cause of switching, consumers are willing to switch despite a higher level of satisfaction with the previous brand, as compared to switching caused by intrinsic motives. Regarding consumers with limited consecutive purchase experience, no significant difference was found between consumers' brand choice prior to switching behavior (e.g., Faison, 1974; Hirschman and Wallendorf, 1980; McCann, 1974).

## References

- Allport, G. W. 1935 . In C. Murchison (Ed.), *Handbook of social psychology*. Worcester, Mass.: Clark University Press., 798-884. and Rapture," *Journal of Retailing*, 65 (Winter), 421-429. 95
- Anderson, L. R., & Fishbein, M. , 1965 Prediction of attitude from the number, strength, and evaluative aspect of beliefs about the attitude object: A comparison of summation and congruity theories. *Journal of Personality and Social Psychology*, . 3. 437-443.
- Anderson, N. H., & Hulbert, S. 1963 Effects of concomitant verbal recall on order effects in personality impression formation. *Journal of Verbal Learning and Verbal Behavior*, . 2, 379-391.
- Anderson, Thomas W. and William H. Cunningham (1972), "The Socially Conscious Consumer," *Journal of Marketing*, 36 (July), 23-31.
- Anderson, Thomas W., Karl E. Henion, and Eli P. Cox (1975), "Socially vs Ecologically Responsible Consumers," in 1974 Combined Proceedings, ed. Ronald C. Curhan, Chicago: American Marketing Association, 304-311.
- Ariely, Dan, Joel Huber, and Klaus Wertenbroch (2005), "When Do Losses Loom Larger
- Bandura, A., & Rosenthal, T. L.( 1966 ), Vicarious classical conditioning as a function of arousal level. *Journal of Personality and Social Psychology*., 3, 56-67

Baron, Reuben M. and David A. Kenny (1986), "The Moderator-Mediator Variable Bass, F. M. Fishbein and brand preference: A reply. *Journal of Marketing Research*, 1972, 9, 461.

Bass, F. M., & Talarzyk, W. W. ,( 1972) An attitude model for the study of brand preference. *Journal of Marketing Research*, . 9, 63-72.

*Behavior and Human Decision Processes*, 60 (December), 431-457. Belk, Russell W. (1988), "Possessions and the Extended Self," *Journal of Consumer*

Bhuiyan, S.N. (1997) "Saudi consumers' attitudes towards European, US and Japanese products and marketing practices", *European Journal of Marketing*, Vol. 31, No. 7/8, pp. 467-486.

Beaudoin, P. et al. (1998) "Young fashion leaders' and followers' attitudes toward American and imported apparel", *Journal of Product & Brand Management*, Vol. 7, No. 3, pp. 193-208.

Burt, S., Carralero-Encinas, J. (2000) "The role of store image in retail internationalisation", *International Marketing Review*, Vol. 17, No. 4/5, pp. 433-454.

Burger, J. M. (1997). *Personality* (4th ed.). Pacific Grove, CA: Brooks/Cole.

Boyce, Rebecca R., Thomas C. Brown, Gary H. McClelland, George L. Peterson, and Camerer, Colin (1988), "Gifts as Economic Signals and Social Signals," *American Journal of Sociology Supplement*, 94, S180-S214. 92

Cattell, R. B.; Marshall, MB; Georgiades, S (1957). "Personality and motivation: Structure and measurement". *Journal of Personality Disorders* 19 (1): 53–67.

Chambers, D. K. Repetition and order effects in attitude formation. *Journal of Personality and Social Psychology*, 1971, 17, 219-228.

Chen, M.F. (2007) "Consumer attitudes and purchase intentions in relation to organic foods in Taiwan: Moderating effects of food-related personality traits", *Food Quality and Preference*, Vol. 18, No. 7, pp. 1008-1021.

Chaney, I., Gamble J. (2008) "Retail store ownership influences on Chinese consumers", *International Business Review*, Vol. 17, No. 2, pp. 170-183.

Cialdini, Robert B. and Douglas T. Kenrick (1976), "Altruism as Hedonism: A Social Cialdini, Robert B., Mark Schaller, Donald Houlihan, Kevin Arps, Jim Fultz, and Arthur Cofer, C. N., & Foley, J. P. Mediated generalization and the interpretation of verbal behavior: I. Prolegomena. *Psychological Review*, 1942, 49, 513-540.

Cohen, J. B., Fishbein, M., & Ahtola, O. T.( 1972) The nature and uses of expectancy-value models in consumer attitude research. *Journal of Marketing Research*, . 9, 456-460.

Consumption Experience," in *Service Quality: New Directions in Theory and Coulter*, Robin A. and Mark Ligas (2003), "To Retain or To Relinquish: Exploring the Dahlke, A. E. The effects of reinforcement and punishment on attitude change. Unpublished doctoral dissertation, University of Minnesota, 1963

Day, G. S.( 1973). Theories of attitude change and structure. In S. Ward & T. Robertson (Eds.), *Consumer behavior: Theoretical sources*. Englewood Cliffs, N. J.: Prentice-Hall, .

Decisions under Risk," *Econometrica*, 47 (March), 263-291.

Decisions," *Journal of Consumer Research*, 27 (March), 433-446.

Delorme, Denise E., George M. Zinkhan, and Scott C. Hagen (2004), "The Process of Determinant of Customer Preferences Toward Frequency Program Rewards,"

Digman, J.M. (1989). "Five robust trait dimensions: Development, stability, and utility". *Journal of Personality* **57** (2): 195–214. doi:[10.1111/j.1467-6494.1989.tb00480.x](https://doi.org/10.1111/j.1467-6494.1989.tb00480.x). PMID [2671337](https://pubmed.ncbi.nlm.nih.gov/2671337/).

Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology*, *41*, 417-440. Disposition of Special Possessions," *Journal of Consumer Research*, *27* (September), 179-201.

Disposition Practices of Packrats and Purgers," in *Advances in Consumer Research*, Disposition?" *Journal of Marketing*, *41* (April), 22-28.

Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations," *Journal of Personality & Social Psychology*, *51* Doob, L. W. The behavior of attitudes. *Psychological Review*, 1947, *54*, 135-156.