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Knowledge to Wisdom

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CHAIRPERSON'S MESSAGE

This issue of the *Journal of Indian Research* contains several essays which are interesting read for scholars of various disciplines. Heena Kalra and Jyoti Kalra in their *Essay on Internet of Thing*s have delineated the fast changing technology. Both contributors write, "Following on from the Internet of computers, when our servers and personal computers were connected to a global network, and the Internet of mobile telephones, when it was the turn of telephones and other mobile units, the next phase of development is the Internet of Things, when more or less anything will be connected and managed in the virtual world..… This revolution will be the Net's largest enlargement ever and will have sweeping effects on every industry — and all of our everyday lives." There are several advantages of technology. But, technology comes at a cost. The authors warn that we are standing on the brink of a post-privacy society. After implementation of IOT, we may well be living in the last era of privacy.

Even though, privacy is withering away due to advent of biometric and Aadhar enabling of much of our activities, academic works are getting firewalled behind payment gateways. In the Knowledge Society, what is required is the free access to the humongous research output to the young researchers world across.

Though, we have maintained free access to all the papers that we have been publishing, I would take this opportunity to seek support of universities for establishing a free access to research output. Wisdom deepens with collaboration. I wish vibrant academic communities flourish all across the world.

Dr. Ashok Kumar Gadiya

EDITORIAL

Is sentience an algorithm? There has been explosion in research on artificial intelligence. The artificial intelligence is evolving through three stages- Artificial Narrow Intelligence (ANI) to Artificial General Intelligence (AGI) and finally Artificial Super Intelligence (ASI). Mankind is still struggling with building machines with AGI. An AGI will have the general intelligence across the spectrum just like human beings. Scientists are imbuing machines with artificial intelligence by working on the pattern recognition from large number of data and thereafter working out a heuristic tool as an algorithmic process. While intelligence is being considered as the capability of pattern recognition and combination of different algorithms, emotional experiences are being viewed as mere biochemical algorithm. A particular pattern of release and absorption of certain neurotransmitters and chemicals, if can be replicated; scientists are certain that the emotional experience can be generated. Even weeping, piloerection in awe and inspiration is being fully understood as merely a biochemical algorithm. AGI will have the ability of recognition of complex patterns like that of human intelligence, but AGI Machines would be faster and with higher memory storage. Philosopher Yuval Noah Harari talks about decoupling of intelligence from consciousness. Harari writes in his marvellous book, *Homo Deus*(2017), " We are now developing new types of non-conscious intelligence that can perform such tasks far better than humans. For all these tasks are based on pattern recognition, and non-conscious algorithms may soon excel human consciousness in recognition patterns."(pp.361-362).

Consciousness is the power of self-reflection of idea over itself. Indian philosophers have therefore used the simile of mirror image to describe the mechanism of consciousness. When we do typing, sometimes we keep on typing without being conscious. Similarly, several routine works are being performed by us without being conscious. We breath, our digestive system, circulatory system, nervous system, muscular system keep on working continuously without we being aware of their functioning. To be conscious is thus state of being aware or the self-awareness. But consciousness is not always pure consciousness. There are levels of consciousness. From coma to superconsciousness, a proper gradient scale of consciousness has been proposed.

If intelligence is algorithmic whereby machines can be intelligent without being conscious, can consciousness be seen as an algorithm? This can be formulated only when one is able to measure sentience. Two scientists, Marcello Massimini and Giulio Tononi pioneered a technique called "zap and zip" to probe whether someone is conscious or not. This is their consciousness-meter. The team applied mathematics of probability to measure the Perturbational Complexity Index(PCI) in brain when signals are induced inside brain. When 102 healthy and 48 responsive but brain-injured patients were zapped and zipped during both state of conscious and unconscious, it was discovered that when the PCI value was above 0.31, the person was conscious and if below this figure, the person was always unconscious. The PCI in normal awake state was always between 0.31 and 0.70.

Tononi is also the architect of the Integrated Information Theory (IIT). IIT posits that consciousness is a feature of the universe that emerges with the complexity of the network. Just as Einstein postulated in his Theory of General Relativity that gravitational force is a feature of universe arising from geometry of the space-time; IIT brings in geometry of neuronal arrangements as the cause of consciousness. IIT proposes to measure consciousness by a parameter phi,**Φ.** PCI is an approximation of phi, as of now. In general anaesthesia, PCI is down. Many patients with vegetative state have been found to show PCI above 0.31 which shows that they are experiencing things around.

IIT finds that higher the information integration a system possess, more phi it has, and higher would be the level of consciousness. Cerebellum though has 69 billion neurons is not integrated internally. The neurons work in grids and in sequence in a linear mode. But, it is cerebral cortex with 16 billion neurons where there are complex integration and feedback loop mechanisms. When a person is in deep sleep, even though he has all the cerebral neurons functioning; he is not conscious since the information integration circuit is broken. Similarly, even a conscious person when is applied anaesthesia, his information integration gets broken and he loses the consciousness. IIT explains how with drugs or alcohol intake, the capacity of integration of information gets affected. IIT predicts that the "spatio-temporal grain of the physical elements specifying consciousness is that yielding the maximum Φ**."** Loss and recovery of consciousness is associated merely with this breakdown and recovery of the capacity for information integration**.** IIT also explains that consciousness cannot be computed, this must be built into the structure of the system. A simulation of nuclear blast does not kill the person. Similarly, even if human brain is simulated and a digital brain is created, consciousness cannot emerge. Consciousness is property of a network. IIT postulates that any system-architecture similar to topographically organized areas in human cortex (posterior cortex is where the seat of information integration is guessed), the system would be highly conscious even if not engaged in intelligent behaviour.

If consciousness is state of degree of information integration, thence consciousness itself gets dehumanized. Rather than limited to human beings under certain favourable conditions, any system that integrates information can be considered to be sentient to some extent. This brings in the pan-psychism in the forefront of AI philosophy. Consciousness is the causal power of a system which exists in itself and does not depend on observer. Decoupling of intelligence from consciousness which is already occurring in AI machines would have their exact opposites where conscious systems without intelligence would be said to exist.

Consciousness, if is measurable, can be viewed as a bio-physical algorithm. Intelligence on the other hand is postulated as mere a bio-chemical algorithm. Algorithm is what is propelling the acceleration of technological innovation. It is necessary for the current generation of researchers to understand the impact such algorithmic dominance would have on our lives. Sociology should not lag behind technology. Let Humanities walk hand in hand with Technical Sciences.

Niraj Kumar
Honorary Editor

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HISTORY

GLEANINGS FROM PRINT MEDIA ON MAHATMA GANDHI

***Dr. Neeta Khandpekar* ***

ABSTRACT

The year 2015 marked the centenary year of Gandhi returning from South Africa to India which motivates us to look back at some lesser known events and views about Gandhi. For example, Gandhiji himself disliked lavish spending in marriages which has recently influenced some Islamic organizations in Mumbai to appeal for no extravagance in marriage in order to have better future. Journalism being very upcoming field, a number of journalistic articles which are still very relevant has been highlighted. The present work covers Gandhiji's lesser known views on Khadi, dowry, marriage etc. Gleanings from newspapers, journals, books and printed advertisements after the second half of the twentieth century have been used. A cursory look at how Gandhi is being used as brand today is included. This paper is written as a prelude for fresh research on Gandhiji using various print sources.

Keywords: Advertisements, Gandhi, Journalism, Newspapers, Print Media.

INTRODUCTION

Gandhiji as a journalist had wide experience: he worked as a reporter and an editor, folded copies and composed type, wrote articles and proof-read pages. He was editor for more than 30 years and during this period he edited four weekly newspapers-*Indian Opinion*[1], *Young India*, *Navajivan*[2] and *Harijan*[3]. Truth, pole star of Gandhiji's life and philosophy, permeated his weeklies. This explains the absence of exaggerated or loaded accounts in his papers. "Publication of false news I hold to be a crime against humanity" (*Harijan,* 20 April 1947), "*Young India* will be stale when Truth becomes stale" he wrote (YI, 3 April 1934). He fought vigorously for freedom of the press, which was to him "a dear privilege". His imprisonment for writing three seditious editorials in *Young India* in 1921 and 1922 symbolized his dedication to freedom of the press. His weeklies suffered under press rules and restrictions. In 1932

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two weeklies –*Young India* and *Navajivan* ceased publication rather than surrendered to the governmental restrictions on their freedom. *Harijan* was revived in 1946 after a gap of three and half years (Bhattacharya, 1965, p.63). This was done after the arrest of Mahatma Gandhi during Quit India Movement in 1942.

The focus of the present paper is on some lesser known aspects of the life of Mahatma Gandhiji[4] as covered by various newspapers, journals and other related print sources. This paper primarily has been divided into two parts namely, some impressions of Gandhi as a journalist and Gandhiji acting as a priest.

SOME IMPRESSIONS OF GANDHI AS A JOURNALIST

Louis Fischer believed that Gandhiji was "a great editor" (*Bhavan's Journal*, 1974). Henry S.L. Polak writes, "As in his professional work….so in all that applied to public affairs Gandhiji always maintained a high standard of responsibility. He was always exact in his facts, and he would never magnify his case for the sake of argument (*CWMG*, 1970). Brij Krishna Chandiwala, who came in direct contact with Gandhiji in July 1924, wrote "He was a journalist of the first rank, and was well aware of the vital importance of the time factor and topicality of subject –matter" (*Narayan*, 1964, p.6).

Young India has interesting coverage about Gandhiji like when Appasaheb Patwardhan also known as *Konkan Gandhi* (an M.A. and a brilliant Elphinstonian) introduced a friend as a staunch *khadiwalla* and supported his request to have Gandhi at his place for a minute. 'Why?asked Gandhiji. 'He is a good worker, and he deserves it', was the reply (*YI*, February1927). Gandhi said 'Multiply the process and I should be visiting the house of every *khadi* weaver and *khadi* worker. Instead I should expect them to forego their desire and leave me free to visit those who have no faith in *khadi* and whom I would like to convert (YI, 17 March 1927). You must understand my principle of *Satyagrahi Pakshyapata* (righteous partiality).

Gandhi Marg (GM) was the quarterly journal of Gandhian Thought till 1965, and later became *Journal of Gandhi Peace Foundation* since 1966[5]. It is the official organ of *The Gandhi Smarak Nidhi* founded in 1949. The name of the journal was suggested by C Rajgopalachari. He named it so since the quarterly was going to expound a system of philosophy which Gandhi propounded (*GM*, January 1957).

The first issue carried messages of greetings from Dr. Rajendra Prasad, Jawaharlal Nehru, S Radhakrishnan, Vinoba Bhave, V.R.R. Diwakar, Kakasaheb Kalelkar, E Elath[6], and Lord P Lawrence.

J.S. Mathur's '*Technology from a Gandhian Angle*' in 1958 shows the consequences of automation on the economic and social life of a nation (GM, p.316). In 1960, Mark Hannon wrote "*Gandhi in the New York Times 1920-1930*", (*GM*, p.127). The writer says during 1920-1930 the West made only a meager attempt to elucidate the philosophy of Gandhi in his own terms.

Some interesting list of articles in *Gandhi Marg* is given below which can be used as source by researchers:-

Author	Name of Article	Year
Muriel Lester *She was Gandhi's hostess during his visit to England during Second Round Table Conference. She says she came to India in 1926 specifically to see Gandhi.She wrote, 'A months stay at the Ashram brought me great satisfaction'.*	*Gandhi :The Leader*	Jan. 1957, p.15
Roy Walker *A pacifist and ardent vegetarian, he wrote a book on Gandhi, "Sword of Gold"*	*Our Fault*	Jan. 1957, p.20
Richard B Gregg *A graduate of Harvard University, he stayed at Gandhigram in Tamil Nadu many times.*	*A Possible Help for the Indian Scavenger*	Jan. 1957
G Ramachandram *Was Director of Gandhigram*	*My First Darshan of Gandhi*	Jan. 1957, p.43
W.E.B Du Bois *He was G.O.M. of the American Blacks In this article he remembers the discussion they had on inviting Gandhi to visit America and how they were forced to conclude that this land was not civilized enough to receive a coloured man as a honoured guest.*	*Gandhi and the American Negroes*	Jan. 1957, p.174
K.A.L. Narasingh	*Industrialisation & Sarvodaya*	1957, p.128
S.G. Bhave	*Satyagraha & Democrary*	1957, p.293
B .Natesan	*Tagore and Gandhi*	1961, p.167
T.S. Avinashilingam	*Vivekanand & Gandhi : Some Aspects*	1962, p.351
William Robert Miller	*Gandhi & King (Martin Luther) Pioneers of Modern Non-Violence*	1969-70, p.21
T.K. Mahadevan	*An Approach to the Study of Gandhi*	Jan.1969 p.29
Devi Prasad	*Lenin & Gandhi: Contemporary Revolutionaries* [7]	Oct.1970, p.369-378
N Malla	*Swaraj, Science & Civilization*	1980, p.345

Devdutt	*The Past & Present of the Problem of Reservation*	1981, p.36
Ashu Pasricha	*Was Gandhi a Mystic?*	2001, p.98
William Bhaskaran	*Mahatma Gandhi's Peace Army : A Paradigm* (A Nice big circle showing Paradigm of Peace Army shown on p. 432).	2002, p.429

K Santhanam's theme of the article entitled '*Some Thoughts on Gandhi Jayanti*' (*Hindu*, 2 October 1961) is based on "How far India has been able to conform to the teachings of Gandhiji in her international policies and national efforts for the attainment of freedom?" He writes Gandhiji was not only the matchless leader of our struggle for freedom and the great *Father of Our Nation* but also the unique embodiment of the ideals to which freedom and democracy should be dedicated. For Gandhiji, spiritual life was not a mere matter of calm contemplation or pious prayer though he valued both. He required constant effort and continuous striving. His greatest services to humanity were his discovery that cowardly submission to evil and violent revolt against injustice are not only alternatives and his careful elaboration of the principles and techniques of the third alternative, *Satyagraha*, based on Truth, Love and Non-violence. Let us reflect as to how far we have been able to conform to his teachings in our international policies and national efforts.

Gandhi's greatest services to humanity were his discovery of *Satyagraha* based on Truth, Love and Non-violence. The involvement of India in non-alignment in the Cold War period was in a way due to the influence of Gandhian thought. He also wrote the establishment of Panchayat Raj (1960) should be deemed to be a significant victory for Gandhian ideas in free India.

A very interesting article by Anu Bandyopadhyaya entitled '*Mahatma Gandhi as a Matchmaker*' appears in *The Times of India* dated 1st October 1961. It narrates how at the age of 37, Gandhiji assumed the life of a "*Brahmachari*" and undertook voluntary poverty. He thought that those who wanted to do humanitarian service should remain unmarried.

Before this idea gripped him, he was keen on getting his bachelor friends married. He urged his Indian workers to come with their wives and encouraged his English friends, Mr.West and Mr Polak to get married soon. Mr Polak was hesitant because of financial difficulties. Gandhi said it was not right to postpone marriage for long when there was already a union of hearts. In South Africa, Gandhiji made all the arrangements himself for his marriage which made the Registrar of European Marriages suspicious. He tried to delay it without success.

ACTING AS A PRIEST

In his ashrams in India, Gandhi sometimes acted as a priest (Mahmud, 2004, p. 108). His method of match-making or of performing the priest's duty was unorthodox. In marriages blessed by him, the bride or the groom wore hand-spun woven khadi and used no ornament other than a garland of hand-spun yarn which they exchanged before a

sacrificial fire. They chanted Vedic mantras. No costly presents or dowry changed hands (Bandhopadhyaya, 1964).

He disliked pomp, elaborate arrangements and great feasts in marriages. Today many Islamic organizations in Mumbai are appealing for no extravagance in marriage for better future. To peasants who incur heavy debts owing to marriages or the *Shradh* ceremony, he said: "I shall become your priest, much money is not needed to perform marriage or the *Shradh* ceremony." He did not demand any fee but sometimes asked for donations to the *Harijan* fund (Pyarelal, 1961, p.152) .He would build wells for them with this fund.

He did not think that the groom needed any friends or relatives to accompany him. When he saw a party of seven, he said: "Ah, the *Saptarshi* (set of seven sages) has come" They Added: "Yes Arundhatti too"(meaning the groom's mother). When Mahatma Gandhi's third son was married, he presented him with a copy of the *Gita*, *Ashram Bhajanavali*, a *mangalmala* and *takli* and told him: "You will guard your wife's honour and be not her master, but her true friend. Let your lives be consecrated to the service of the motherland. You will both earn your bread by the sweat of your brow." (*YI,* 12 February 1928). His son's betrothal was kept pending for two years till the bride reached an age of 18 years. He discouraged child marriages. "As I see youngsters of the age of 13 about me, I think of my own Marriage (*CWMG, op.cit*, p.11) (He was married at 13). I am inclined to pity myself. I can see no moral argument in support of such early marriages." He also supported inter- caste marriages and was happy when his youngest son married a South Indian girl.

V.L. Mehta in his write up, "*Village Industries-Gandhian Concept: Integrated Economy"* (*Times of India*, 2 October 1961) focuses on decentralization, *Khadi* Industry in detail. The decentralized system of economy which Gandhiji visualized was aimed at evoking the maximum of participation among producers engaged in rural industries and at making the rural community conscious of its productive capacity and economic solidarity.

President Dr. Radhakrishnan once recounted, "Gandhiji was first and foremost a religious man and a politician only in action. He said that by describing Gandhiji as a religious man he did not mean that the Father of the Nation followed any priestly or ritualistic religion. He had himself declared that all his endeavours were directed to seeing God face to face. The President further added , "Gandhiji had also given us the proper concept of "What now passes for Socialism." "There are a hundred ways in which this world has planned Socialism but the kind of socialism which he adopted is the democratic and ethical type of socialism which is not to ignore or neglect individual freedom but to deal with everyone justly." "Gandhiji never resorted to violence. When it was put to him that no country in the world had gained freedom without resorting to violence, Gandhiji's reply was that he would rather perish than want his country to be free in that way". (*Hindu*, 4 October 1963)

U.R. Rao's feature on Mahatma Gandhi Centenary in *Free Press Journal* of October 2, 1968 was prepared based on a series of interview with Ghaffar Khan who was impressed with Gandhi's humourous disposition. He would laugh with all girls and boys, the young and the old. He had a great sense of humour. His heart was full of love and concern for the service of God's children. When Gandhi visited the Frontier Province in 1938, for the second time,

armed sentries were posted as a defensive measure. When Gandhi saw this he asked, "Why these armed men? "Bapu," I told him, "they are here only to frighten away any intruders". Gandhiji said simply and firmly I do not need them. The effect of this incident on our people was considerable. "Look at this strange man. His trust in God is such that he needs no arms!" There was a great deal of violence at first in the Frontier Province. Non-violence came later. I can tell you that the way of violence led to such severe British repression that even brave people turned into cowards. When non-violence came, even the cowardly Pathans turned brave. Non-violence taught them the necessary courage, bravery and brotherhood."

In *Navashakti*[8]*,* Rajnikant Rajyadhyaksha wrote *Ase Hote Bapuji* (October 1, 1961, p.4). Second October is called *Sarya Bharatiyancha Asim Shradhecha Bhaktibhavacha Diwas*. It also covers write up by Ramakant Patil of Sarvoday Mandal Kudal, titled "*Gandhi aani Satyagraha"*. It starts with Gandhiji's appointing of Vinoba Bhave as first Satyagrahi and talks more about Vinoba Bhave's view on Satyagraha initiated by Gandhi.

An article in *Dastavej* column of *Navbharat Times* entitled *Mujhe Apne Uttaradhikari ko Samajh Lena Chahiye aur Uttaradhikari ko Mujhe* by Kumar Parthasarathi talks of difference between Gandhi and Nehru (October 1st, 1989, p.5). again Bhishma Sahani's writeup *Bapu ko Bulaoo Mai Mar Jaunga* talks of life at Sewagram (p.2). *Navbharat Times* further covers *Gandhi Ki Ahimsa Hi Nishastrikaran Ki Prerna* (October 2, 1989, p. 3).

In this world of globalization, advertisements are given prime importance. Each year, on 2nd October, one can see advertisement in newspapers by various public and private organizations highlighting about International Ahimsa Day, *Khadi Vastra Nasun Ek Vichar Aahe (in Marathi),* "The Country rededicates itself to the path of the Father of the Nation on his birth anniversary". "Thousands of roads maybe named after him But how many walk the path?" The article 'When Gandhiji's Talisman no longer guides policy considerations' in *Social Change* by Ravi Kumar, says 'Now even the textbooks do not have Gandhi's Talisman for the children' needs to be taken seriously. (*Social Change*, Vol. **36**, September 2006).

Some advertisements mentions dedications in flowery words like 'A Tribute to the greatest man we've ever known', 'Today Nation Salutes and Pays Homage to the Father of the Nation', 'Let's follow Mahatma Gandhi's Path of Non-Violence to Make Our Villages Dispute-Free,' 'He saw villages as the Soul of India'. He touched the world with his message of Peace and Harmony. These advertisements have some practical impact on our present day society. Ironically Gandhi himself had boundless faith in publishing newspapers without advertisements but he was not against "healthy advertisements".

A Display of Gandhi Birth Centenary Postage Stamps complied by Late Usha Mehta (Bombay, 1969) shows the popularity of Gandhiji since 37 countries issued commemorative stamps on him.

This paper has tried to glean through Gandhi as a journalist, *Gandhi Marg's* contribution in publishing thoughts of Gandhian philosophy. Write-ups on Gandhi in English and vernacular press highlight some of the lesser known facets of Gandhi's life. Finally we see how today Gandhi's name is used as a 'brand' in advertisement (commercial as well as political) .

ENDNOTES

1. *The Indian Opinion* was launched to prepare Indians in South Africa for *Satyagraha* Movement.
2. *Young India* (YI) and *Navajivan* were launched after the World War I and devoted their columns to constructive programmes.
3. *Harijan* was founded in 1933. It was an eight page weekly journal of Applied Gandhism.
4. As Gandhiji himself was a bold, courageous and a conscientious journalist.
5. It is available in the Periodical Section of the Fort Library of University of Mumbai (Jan 1957 to 2003).
6. He was Ambassador of Israel in the U.K.
7. It is rightly stated by Sibnarayan Ray that in the first half of the twentieth Century the two men who made the greatest impact on history were Gandhi and Lenin, for they gave new direction to the political life of the world, though their policies were diametrically opposed.
8. It was an eight page Marathi Newspaper

REFERENCES

1. Bandopadhyaya, Anu (1964). *Bahooroopi Gandhi*, Mumbai. Popular Prakashan.
2. Bhattacharyya, S. N. (1965). *Mahatma Gandhi: The Journalist*. London. Asia Publishing House.
3. *Bhawans Journal* (1974). Vol. **21**(I).
4. CWMG (1970). *Collected Works of Mahatma Gandhi*. New Delhi: Publications Division, Ministry of Information and Broadcasting, Government of India. Volume **4**.
5. Mahmud, Jafar(2004). *Mahatma Gandhi : A Multifaceted Person*. New Delhi. APH Publishers.
6. Narain, Laxmi (1964). Gandhiji: 'Dedicated and fearless Journalist'. *The Hindu*, 2 October 1964.
7. Pyarelal(1961). *Mahatma Gandhi: The Last Phase*, Volume 1. Ahmedabad: Navjivan Publishing House.

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BEHAVOURAL FINANCE

DISPOSITION EFFECT: INVESTORS' UNWILLINGNESS TO REALIZE LOSSES

Anurag Shukla*

ABSTRACT

There is a large body of academic evidences demonstrating that individual investors are subject to the "disposition effect". The Disposition to Sell Winners Too Early and Ride Losers Too Long, investors tend to sell winning investments prematurely to lock in gains and hold on to losing investments too long in the hope of breaking even. This research paper provides evidence of the disposition effect in investors residing in Uttar Pradesh. In this research paper it has been found that there is significant association of disposition effect with demographic factors of investors. This research paper justifies the fact that people are risk-averse in the domain of positive outcomes and risk seeking in the domain of negative outcomes. One implication of this assumption in the context of stock markets is that when faced with a gain, an investor seeks to reduce her exposure to risk and, consequently, sells the stock. Conversely, when faced with a loss, an investor is willing to assume more risk and thus holds onto the stock. An explanation for the disposition effect may come from Prospect Theory, which implies a willingness to maintain a risky position after a loss and to liquidate a risky position after a gain. Prospect Theory requires that investors derive utility as a function of gains and losses rather than the absolute level of consumption. This paper provides a comprehensive study of impact of disposition effect on investors' decision making in stock market.

Keywords: Demographic factors, disposition effect, losing investments, winning investments.

INTRODUCTION

Disposition effect forces investors to sell winner shares too early but hold loser shares in excess resulting in a decrease in the investors' gains. It also takes investors' portfolio away from their desired portfolio. In contrast, classical financial theories anticipate that an economic person would sell those loser shares with no expectation of a rise in their price, and, in turn, invest on those shares with a promising prospect and keep the winner shares as long

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as the company shows good performance. This requires making informed decisions to solve problems and uncertainties faced by investors. This study examines whether disposition effect holds true in an Indian context which has a culture that is predominantly conservative and dictated by family values and religions. Besides, whether gender has any influence on disposition i.e whether Indian men and women behave in the same manner. This study also examines whether occupation has any influence on disposition effect. Cut your losses and let your profits run! That is one of the most frequent pieces of advice given in stock market trading guides. Many investors seem to have difficulty following this advice. Instead, they tend to quickly sell stocks that have appreciated in price since purchase and hold on to losing stocks. Financial economists use the term disposition effect for this tendency. The disposition effect is one of the most robust behavioral regularities documented in studies of trading behaviour.

MOTIVATION OF THE STUDY

Investment behaviours differ from individual to individual based on the acceptance of return and risk and psychological and behavioural and demographic factors. Motivation for this study is to find out whether there is any relation between gender and occupation of investors and their investment decision making. The paper attempt to find out that how disposition effect is associated with gender and occupation of investors.

LITERATURE SURVEY

Shefrin and Statman (1985) provide the first formal analysis of the disposition effect. In arguing for the existence of the disposition effect, they appeal to the results from an earlier study by Schlarbaum, Lewellen, and Lease (1978). Using stock transaction data from 2,500 individual brokerage firm customers during the period 1964 to 1970, Schlarbaum *et al.* analyze the realized returns from round-trip trades for these investors by calculating the returns for stocks bought and subsequently sold. They do not consider the performance of stocks that were bought but not sold during the study period. Judging by these realized returns, the individual investors beat the market by 5 percent per year and about 60 percent of the trades resulted in a profit. This outperformance is not due to market timing and seems not to be due to higher risk. Disposition effect can be explained by the two features of the prospect theory: a) people value gains and losses relative to a reference point (the initial purchase price of shares); b) tendency to seek risk when faced with possible losses and avoid risk when a certain gain is possible according to Weber and Camerer (1998). It was observed by them through experiments that investors sell more shares when the sale price is above the purchase price or last period price. Trading volume is positively correlated with the size of price changes. A study by Brown and Kagel (2009) found out that though investors trade for better stocks but do not achieve maximum potential earnings because they choose to ignore information and hold on to a stock regardless of its performance indicating a status quo bias. The bias has been noticed through experiments. It arises from regret avoidance, drive for consistency, self-perception and illusory control. The results of their experiments did not support disposition effect. This was suggested by the model by Grinblatt and Bing (2005) in which the behaviour of disposition investors leads to momentum in stock prices. On a study done on 120

French stocks, those with high past returns tended to have positive unrealized capital gains, while low past return stocks are more likely to generate unrealized capital losses. Tehrani and Gharehkoolchian (2012) using availability sampling method with investors in the Tehran stock exchange market, noted that regret aversion had positive relationship with disposition effect while self-control was negatively related. They also observed that higher the level of education, the lesser was the disposition effect rate. While they also examined the level of overconfidence based on gender, no study has been done to examine whether gender has an impact on the disposition effect.

RESEARCH METHODOLOGY

Research Design: Descriptive.

Sample: The valid number of responses collected from investors residing in Uttar Pradesh by the questionnaire survey was 100 by using Snowball Sampling technique.

Data Collection: The study includes only primary data which was gathered using the questionnaire which was distributed offline to reach out to wider audience in Uttar Pradesh.

Data Analysis and Hypothesis Testing:

Hypothesis 1:

H0 (Null): There is no impact of gender on holding loss-making position for long term and expectation about covering losses in future (factor of disposition effect).

H1 (Alternate): There is impact of gender on holding loss making position for long term and expectation about covering losses in future (factor of disposition effect).

Table 1:Gender of Investors Holding loss-making position Cross-Tabulation

			Realizing loss	Holding loss making position for long time and expectation about covering loss in future	
Gender of Investors	Male	Count	20	32	52
		% within Gender of Investors	38.5%	61.5%	100.0%
	Female	Count	22	26	48
		% within Gender of Investors	45.8%	54.2%	100.0%
Total		Count	42	58	100
% within Gender of Investors		42.0%	58.0%	100.0%	

Table 2: Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.278[a]	1	.598		
Continuity Correction[b]	.058	1	.810		
Likelihood Ratio	.279	1	.598		
Fisher's Exact Test				.775	.405
Linear-by-Linear Association	.273	1	.601		
N of Valid Cases	50				
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.08.					
b. Computed only for a 2x2 Table					

From above Tables we can clearly observe that majority of male investors (61.5%, 32 out of 52) hold loss making position for long time and expect about covering losses in future, less percentage of female investors (54.2%,26 out of 48) hold loss making position for long time and expect about covering losses in future .

From above Chi- Square table we can observe that we fail to reject Null hypothesis. Hence, Null hypothesis holds true i.e. there is no impact of gender on holding loss making positions for long term and expectation about covering loss in future (factor of disposition effect).

Hypothesis 2:

H0 (Null): There is no impact of gender on squaring off profit making position quickly (factor of disposition effect).

H1 (Alternate): There is impact of gender on squaring off profit making position quickly (factor of disposition effect).

Table 3:Gender of Investors & Square-off Profit Making Position Cross-Tabulation					
			Not selling profit making position quickly expectation about more profit	Selling profit making position quickly	
Gender of Investors	Male	Count	24	28	52
		% within Gender of Investors	46.2%	53.8%	100.0%
	Female	Count	30	18	48
		% within Gender of Investors	62.5%	37.5%	100.0%
Total		Count	54	46	100
% within Gender of Investors		54.0%	46.0%	100.0%	

Table 4: Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.342[a]	1	.247		
Continuity Correction[b]	.765	1	.382		
Likelihood Ratio	1.350	1	.245		
Fisher's Exact Test				.272	.191
Linear-by-Linear Association	1.316	1	.251		
N of Valid Cases	50				
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.04.					
b. Computed only for a 2x2 Table					

From above Tables we can clearly observe that majority of male investors (53.8%, 28 out of 52) square-off or sell profit making position quickly, while less percentage of female investors (37.5%, 18 out of 48) square off or sell profit making position quickly.

From above Chi -Square Table, we can observe that we fail to reject Null hypothesis. Hence, Null hypothesis holds true i.e. there is no impact of gender on Squaring off profit making position quickly (factor of disposition effect).

Hypothesis 3:

H0 (Null): There is no impact of occupation on holding loss making position for long term and expectation about covering loss in future (factor of disposition effect).

H1 (Alternate): There is impact of occupation on holding loss making position for long term and expectation about covering loss in future (factor of disposition effect).

Table 5: Occupation of Investors Holding Loss -Making Position Cross-Tabulation					
	Realizing loss	Holding loss making position and for long term expectation about covering loss in future			
Occupation of Investors	Finance Sector	Count	16	34	50
		%withinOccupationofInvestors	32.0%	68.0%	100.0%
	Non finance Sector	Count	26	24	50
		%withinOccupationofInvestors	52.0%	48.0%	100.0%
Total	Count	42	58	100	
	% within Occupation of Investors	42.0%	58.0%	100.0%	

Table 6: Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.053[a]	1	.152		
Continuity Correction[b]	1.314	1	.252		
Likelihood Ratio	2.068	1	.150		
Fisher's Exact Test				.252	.126
Linear-by-Linear Association	2.011	1	.156		
N of Valid Cases	50				
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.50.					
b. Computed only for a 2x2 Table					

From above Tables we can clearly observe that majority of investors from finance sectors (68%, 34 out of 50) hold loss making position for long time and expect about covering losses in future, less percentage of investors from non finance sector (48%,24 out of 50) hold loss making position for long time and expect about covering losses in future .

From above Chi Square table we can observe that we fail to reject Null hypothesis. Hence, Null hypothesis holds true i.e. there is no impact of occupation on holding loss making positions for long term and expectation about covering loss in future (factor of disposition effect).

Hypothesis 4:

H0 (Null): There is no impact of occupation on Squaring off profit making position quickly (factor of disposition effect).

H1 (Alternate): There is impact of occupation on Squaring off profit making position quickly (factor of disposition effect).

Table 7: Occupation of Investors Square-off Profit Making Position Cross -Tabulation					
			Not selling profit making position quickly expectation about more profit	Selling profit making position quickly	
Occupation of Investors	Finance Sector	Count	18	32	50
		% within Occupation of Investors	36.0%	64.0%	100.0%
	Non finance Sector	Count	36	14	50
		% within Occupation of Investors	72.0%	28.0%	100.0%
Total		Count	54	46	100
% within Occupation of Investors		54.0%	46.0%	100.0%	

Table 8: Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.522[a]	1	.011		
Continuity Correction[b]	5.153	1	.023		
Likelihood Ratio	6.676	1	.010		
Fisher's Exact Test				.022	.011
Linear-by-Linear Association	6.391	1	.011		
N of Valid Cases	50				
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.50.					
b. Computed only for a 2x2 Table					

From above Tables we can clearly observe that majority of investors from finance sectors (64%, 32 out of 50) square off or sell profit making position quickly, less percentage of investors from non finance sector (28%,14 out of 50 square off or sell profit making position quickly. From above Chi Square table we can observe that we reject Null hypothesis. Hence, Alternate hypothesis holds true i.e. there is impact of occupation on Squaring off profit making position quickly (factor of disposition effect).

MANAGERIAL IMPLICATIONS

This research investigates the behavioural patterns of investors in Uttar Pradesh and tries to understand how these patterns guide investment decision. This research offers many useful insights for students, instructors, academicians concerned with financial markets. It facilitates financial advisors to become more effective by understanding their clients' psychology. It aids them in developing behaviourally modified portfolio, which best suits their clients' predisposition.

CONCLUSION

It can be concluded from first hypothesis that majority of male investors hold loss making position for long time and expect about covering losses in future, less percentage of female investors hold loss making position for long time and expect about covering losses in future and there is no impact of gender on disposition effect. It can be concluded from second hypothesis that majority of male investors square off or sell profit making position quickly, less percentage of female investors square off or sell profit making position quickly It can be concluded from third hypothesis that majority of investors from finance sectors hold loss making position for long time and expect about covering losses in future, less percentage of investors from non-finance sector hold loss making position for long time and expect about covering losses in future. It can be concluded from fourth hypothesis that majority of investors from finance sectors square off or sell profit making position quickly, less percentage of investors from non-finance sector square off or sell profit making position quickly and there is impact of occupation on Squaring off profit making position quickly (factor of disposition effect).

REFERENCES

1. Brown, A. L., & Kagel, J. H. (2009). Behavior in a simplified stock market: the status quo bias, the disposition effect and the ostrich effect. *Annals of Finance*, **5**(1): 1-14.
2. d'mello, Francis & Manas Mayur (2016). Do Investors Keep Their Mistakes: An Empirical Investigation On Disposition Effect, *Indian Journal of Economics & Business,* Vol. **15(**2): 215-227.
3. Grinblatt, M., & Han, Bing. (2005).Prospect theory, mental accounting, and momentum. *Journal of Financial Economics,* **78(**2): 311-339.
4. Kaustia, Markku (2010). *Disposition Effect*, Chapter 10 in *Behavioral Finance* (Robert W. Kolb Series in Finance), H. Kent Baker and John R. Nofsinger, eds., John Wiley & Sons, Inc., 2010. Available at https://www.aalto.fi/sites/g/files/flghsv161/files/2018-12/disposition_effect.pdf
5. Schlarbaum, Gary G., Wilber G. Lewellen & Ronald C. Lease(1978). "Realized returns on common stock investments: The experience of individual investors", *Journal of Business***51**(2): 299–325.
6. Shefrin, Hersh & Meir Statman(1985). "The disposition to sell winners too early and ride losers too long", *Journal of Finance,* **40 (**3): 777–90.
7. Tehrani, R. & Gharehkoolchian, N. (2012), Factors Affecting the Disposition Effect in Tehran Stock Market. *International Business Research,* **5**(3): 40.
8. Tehrani, Reza(2012). Factors Affecting the Disposition Effect in Tehran Stock Market, *International Business Research*, Vol. **5**(3); March 2012
9. Weber, M., & Camerer, C. F. (1998). The disposition effect in securities trading: An experimental analysis. *Journal of Economic Behavior & Organization,* **33**(2):167-184.

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ECONOMICS

PRICE CHANGE STRATEGIES OF SMALL SCALE INDUSTRIES OF MID-WESTERN REGION OF NEPAL

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ABSTRACT

Pricing objectives are the goals that describe what a firm wants to achieve through pricing. Price change is one regular process of industries because in certain time interval, any industry changes the price of their products and services due to the various causes like cost inflation, over-demand, increase in cost of raw materials, labor cost, increase in tax, improvement in quality of product etc. The study was conducted to identify the price change strategies of small scale industries of Mid-Western Region of Nepal. The study was conducted among the 264 industries of Dang, Banke and Jumla. Purposive sampling technique was adopted to select the respondent from selected industries. primarily owner and managers were selected for the study. The study found that there was significant difference within and between the study districts regarding the price change strategies because the p = .018 which is less than significant level value of 0.05 at 95% confidence interval. Regarding the response to the competitors' price change strategies, majority of industries stated that they would adopt 'Reduce Price' strategies to respond to their competitors. On the basis of report, recommendations have been suggested for introduction of new products as a strategy responding to competitors' price change. This should be adopted by the managers of small scale industries in Nepal, and they should seek suggestion of price experts while making pricing decisions.

Keywords: Industries, Mid-Western, Nepal, Price change, Small scale, Strategies.

INTRODUCTION

Pricing has always been major decision areas of Small Scale Industries. Most of small firms set prices based on cost, competition or customer's value perception of their products and services. McCarthy states that it's not easy to define price in real-life situations because

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prices reflect many dimensions (McCarthy, 1975). Most of the Nepalese industries are involved in processing and manufacturing of food items, consumer and household goods, and textiles and related products, both for exports as well as the domestic market. Rice, pulses, oil and flour mills, dairy, aerated soft drinks, fruit juices and processed products, noodles, biscuits and light snack products, chocolates and candy, mineral water, dried vegetables, and some other household utilitarian and consumption goods have dominated industrial activities in Nepal.

Pricing decision is a crucial decision every organization has to make, because this will eventually affect their corporate objectives, either directly or indirectly (Monroe, 2003, p. 8). A business whether small or big, simple or complex, private or public, is created to provide competitive prices (Ayozie, 2008, p. 10). According to Hilton (Hilton, 2005, p. 634), setting the price for an organization's product or service is one of the most crucial decisions a manager faces, and one of the most difficult, due to the number of factors that must be considered. A study of SMEs in Nigeria discovered that competition plays a major role in pricing decision and that there is a relationship between pricing decision and the attainment of organizational objective (OBIGBEMI, 2010). Similarly, another study of SMEs in Nigeria shows that there is a relationship between change in cost of sales and turnover (Imoleayo, 2010).

Companies set prices by selecting a general pricing approach that includes one or more of these three sets of factors – costs, consumer perception and competitors' prices (Kotler & Armstrong, 2014, p. 680). A key for a marketing manager setting a price for a product is to find an approximate price level to use as a reasonable starting point. Four common approaches used to find this approximate price level are (1) demand-oriented, (2) cost-oriented, (3) profit-oriented, and (4) competition-oriented approaches (Kerin, Hartley, & Rudelius, 2013, p. 250). There may be changes in price of goods. The companies change the price of their goods time to time on the basis of demand, supply and market nature. But there may be many questions about the price change from customers' side and competitors' side. Dockner and Fruchter (2004, p. 3) stated that when firms are engaged in strategic competition, a higher speed of diffusion causes the individual firm to decrease the price, thus competition either directly or indirectly has an influence on the price of products.

There are various factors of price change. A considerable factor in price increases is cost inflation. Rising costs squeeze profit margins and lead companies to make regular rounds of price increases. Companies often raise their prices by more than the cost increase in anticipation of further inflation. Another factor leading to price increases is over-demand: when a company cannot supply all its customers' needs, it can raise its prices, ration products to customers or both (Jain, 2006).Though, customers will pay whatever they think the service is worth; thus pricing in many service businesses is based on whatever the market will bear (Thomas, 1978). But often, small manufacturers set prices of their products arbitrarily without regard to consumer characteristics in the environment (Ayozie, 2008, pp. 10-12).

According to Lovelock & Wirtz (2004, p. 151), the principal approach to an effective pricing strategy is to manage revenues in ways that support the firms' profitability objectives. There are different types of pricing model, among them the Pricing Differentiation Premium model is one which is based on the assumption that the differentiation premium is the

amount the consumer is willing to pay for the service. Consequently, service firms who have successfully differentiated themselves from competitors can command higher than the average competitive price. Service firms who are unable to differentiate themselves from competitors must set prices comparable to average competitor prices to remain competitive (Arnold, Hoffman, & McCormick, 1989). The pricing should also reflect the four characteristics of services: intangibility, perishability, lack of standardization, and inseparability of production and consumption (Taher & Basha, 2006).

According to Monroe (2003, p. 257) "Indeed, cost is probably the least important factor to consider when setting product or services prices." Figure 1 shows the ways in which a company might assess and respond to a competitor's price cut. Once the company has determined that the competitor has cut its price and that this price reduction is likely to harm company sales and profits, it might simply decide to hold its current price and profit margin. The company might believe that it will not lose too much market share or that it would lose too much profit if it reduced its own price. It might decide that it should wait and respond when it has more information on the effects of the competitor's price change. For now, it might be willing to hold on to good customers, while giving up the poorer ones to the competitor. The argument against this holding strategy, however, is that the competitor may get stronger and more confident as its sales increase and the company might wait too long to act.

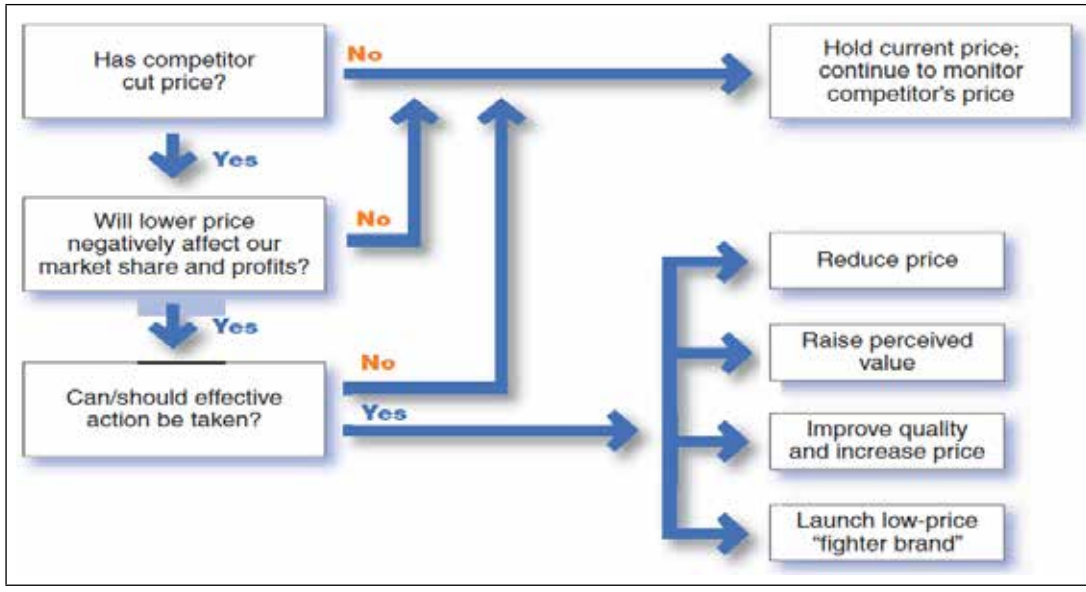

Figure 1: Price Change Strategy

Source: (Kotler & Armstrong, 2014, p. 350)

In the Nepalese context, most of the industries are involved in processing and manufacturing of food items, consumer and household goods, and textiles and related products, both for exports as well as for the domestic market. Rice, pulses, oil and flour mills, dairy, aerated soft drinks, fruit juices and processed products, noodles, biscuits and light snack products,

chocolates and candy, mineral water, dried vegetables, and some other household utilitarian and consumption goods have dominated industrial activities in Nepal. Even in the study districts (Dang, Banke and Jumla) of Mid-Western Region of Nepal, 5279 small scale industries are working in the different sectors. They have their own price change strategies but it is unknown to the customers and other general public. So, considering the importance of knowledge of price change strategies, the study aims to explore the price change strategies adopted by the small scale industries of Mid-Western region of Nepal.

MATERIALS & METHOD

The study was conducted in the Dang, Banke and Jumla district of Mid-Western Region of Nepal. The study had covered the small scale manufacturing industries to identify the price change strategies adopted by these industries. The study was based on the quantitative method; it was based on the cross-sectional and descriptive design. The study had taken the 5% sample from the total universe of small scale industries of each district. So the total sample become the 264 for all three districts as the below Table 1:

Table 1: Sample Distribution

S.	District	Small Industries	Sample size = 5%
1	Dang	2285	114
2	Banke	2368	118
3	Jumla	626	32
	Total	5279	264

One respondent was selected from one industry by using the purposive sampling technique. Primarily, owner and manager were selected for the study because they are the key person who decides about the price or price change strategies. The study had used the structured questionnaire survey to collect the primary data. The collected data was edited, coded and cleaned before analysis. The statistical software (SPSS v. 20) was used for the data analysis. The data are presented in the tabular form. Basically, frequency distribution, Pearson Chi-Square test and ANOVA was used as a statistical model for quantitative data analysis.

RESULTS & DISCUSSIONS

The study was conducted in the western region to explore the price change strategies of small scale industries. The study explored the price change strategies, differences of price change strategies in study districts and responding to competitor's price change.

Price Change Strategies

The business and marketing environment are ever changing; they are dynamic and change with change in other factors. Due to these changes, sometimes the companies have to change the price of the products and there are various strategies related to price change in the market and they are maintaining the price, initiating price cut, initiating price increase etc. in the market. Table 2 discusses the various price change strategies and the opinions of the respondents towards those strategies.

Table 2: Price Change Strategies

Disagree		**Price Change Strategies**			*Total*
		Neutral	Agree		
Initiating price cut	Dang	98.2%		1.8%	100.0%
	Banke	76.3%	13.6%	10.2%	100.0%
	Jumla	100.0%			100.0%
Total		88.6%	6.1%	5.3%	100.0%
Initiating price Increase	Dang	1.8%		98.2%	100.0%
	Banke		18.6%	81.4%	100.0%
	Jumla		6.2%	93.8%	100.0%
Total		0.8%	9.1%	90.2%	100.0%

Source: Field survey, 2018

The above Table presents the different price change strategies and the opinions of the respondents in respect to the above strategies. The findings of the study are as below:

Initiating Price Cut: Price cut is the reduction of the price of the products in the market as the market. Initiating price cuts makes the customer response better and positive as the number of the customers increases. In the district wise evaluation, in Dang district, 98.2% respondents had response of *disagree* and only 1.8% had response of *agree* to this method of pricing. In Banke district,76.3% respondents had response of *disagree*, 13.6% had *neutral* response and 10.2% had given the *agree* response on the price changing strategy. In case of Jumla district, all respondents (100%) had response of *disagree* on this strategy in the market. In total, 88.6% had given the response on *disagree* to this method of pricing which indicates that this method was not suitable in the market of these study districts.

Initiating Price Increase: It is the increment in the price of the products because of various factors. It is a greater challenge than compared to initiating price cut because increase in the price of the goods doesn't make the customer's response positive. It is sometimes done because of over demand of the products and lack of enough supply which ultimately leads to increase in the price of the products in the market. In the district-wise comparison, in Dang district, 1.8% had response of *disagree* and 98.2% had response of *agree* on this strategy. Similarly, in Banke district, 18.6% were *neutral* in their response whereas 81.4% had given response on *agree* on this strategy of pricing in the market. In Jumla district, 6.2% were *neutral* in their response and 93.8% had response of *agree* on this strategy of the initiating price increase method. In the overall statistical analysis of this data, it was noticed that 90.2% respondents had given the response on *agree* level about this method which indicates that this method was very suitable and adopted by the owner of industries in study districts. Initiating price increase can help increase the profit margin of the companies if they raise the price in a subtle manner without angering their customers.

Difference of Price Change Strategies in Study Districts

The price change strategies may be different in the different districts so the study had analyzed the collected data of all districts by using the ANOVA test to know the level of differences in between the districts. The data presented in the Table 3 gives the detail knowledge of mean differences.

Table 3: Difference of price change strategies in study districts

ANOVA					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	1.901	2	.951	4.058	.018
Within Groups	61.129	261	.234		
Total	63.030	263			

Multiple Comparisons						
(I) District	**(J) District**	**Mean Difference (I-J)**	**Std. Error** Lower Bound	**Sig.**	**95% Confidence Interval**	
				Upper Bound		
Dang	Banke	-.15254*	.06356	.017	-.2777	-.0274
	Jumla	.06250	.09682	.519	-.1281	.2531
Banke	Dang	.15254*	.06356	.017	.0274	.2777
	Jumla	.21504*	.09646	.027	.0251	.4050
Jumla	Dang	-.06250	.09682	.519	-.2531	.1281
	Banke	-.21504*	.09646	.027	-.4050	-.0251
*. The mean difference is significant at the 0.05 level.						

Source: Field survey, 2018

The data presented in Table 3 shows the difference of price change strategies in the study districts and the presented data gives the report of two perspectives: differences in totality and differences in the individual level. From the overall perspective, the value of p= 0.18 which is higher than 0.05 significant levels which shows that there was not significant difference between the price change strategies between these study districts. It says that there was similar practice of price change strategies in all districts.

From the analysis of individual differences of one to one district, in relationship between Dang and Banke district, p= 0.017 which is <0.05 significant level, so there was significant difference in price change strategies between these two districts. In Dang and Jumla district, p= 0.519 which is > 0.05 significant levels which shows that there was no significant difference in price change strategies between these two districts. The statistical analysis of Banke and Jumla district shows that there was no significant difference in price change strategies between these

two districts because p= 0.27 which is >0.05 significant levels at 95% confidence interval. The overall analysis of one to one district, there was similar practices in between the Dang and Jumla district, and Banke and Jumla district. have similar.

Responding to Competitors' Price Changes Strategies

Competitors are a part of the market; there are various strategies for responding to changes in the competitor's price changes strategies. In order to maintain a share in the market, the companies need to come up with different strategies that will help them maintain it. The different strategies of price changes are maintaining price, reduce price, raise perceived value, increase quality and increase price and launch low price fighter brand. The data presented in Table 4 shows the opinions of the respondents with regard to the topic of responding to competitor's price change strategies.

Table 4: Responding to Competitors' Price Changes Strategies

Disagree		**Responding to Competitors' Price Change Strategies**			*Total*	**Pearson Chi-Square**
		Neutral	Agree			
Maintain price	Dang			100.0%	100.0%	NA
	Banke	5.1%	10.2%	84.7%	100.0%	
	Jumla			100.0%	100.0%	
Total		2.3%	4.5%	93.2%	100.0%	
Reduce price	Dang			100.0%	100.0%	NA
	Banke		8.5%	91.5%	100.0%	
	Jumla			100.0%	100.0%	
Total			3.8%	96.2%	100.0%	
Raise perceived value	Dang		56.1%	43.9%	100.0%	NA
	Banke	3.4%	20.3%	76.3%	100.0%	
	Jumla			100.0%	100.0%	
Total		1.5%	33.3%	65.2%	100.0%	
Increase quality and increase price	Dang		1.8%	98.2%	100.0%	NA
	Banke	3.4%	10.2%	86.4%	100.0%	
	Jumla			100.0%	100.0%	
Total		1.5%	5.3%	93.2%	100.0%	
Launch low price fighter brand	Dang	87.7%	12.3%		100.0%	.001
	Banke	67.8%	32.2%		100.0%	
	Jumla	81.2%	18.8%		100.0%	
Total		78.0%	22.0%		100.0%	

Source: Field survey, 2018

The data presented in the above Table 4 shows the opinions of the respondents in a tabular form about the level of agreement/disagreement on the topic. The finding of data analysis is found as below:

Maintain price: The first strategy is to maintain its price as it is, as the reduction of the price can result in loss of profit or maybe the reduction of price doesn't result in the increment of the market share of the company but by maintaining it they can maintain their share in the market. In the district wise evaluation, in Dang district, all respondents (100%) agreed on this strategy. Similarly, In Banke district, 5.1% respondents had response on disagree, 10.2% had neutral response and 84.7% had response on agree on this method. In Jumla district, all respondents (100%) agreed on this strategy. In the overall analysis of this data shows that there 93.2% respondents agreed on this strategy. The result shows that this strategy was accepted and adopted by majority of respondents so it could be concluded that this strategy was useful in maintaining the share of the products in the market.

Reduce price: This strategy is that it reduces the price of the products in the company as the market may be price sensitive or the costs may fall with the volume or it would be difficult to rebuild its market share once the share is lost and so on. In the district wise analysis of data shows the comparative situation of study district. In Dang district, all respondents (100%) *agreed* on this method. Similarly, In Banke district, 8.5% respondents were neutral and 91.5% had given response on *agree*. In Jumla district, all respondents (100%) *agreed* on this method. In the overall analysis of data, it was found that 96.2% respondents *agreed* on the method of reducing price in the market. The findings of this data shows that majority of industries had adopted the reduce price strategy to respondent to competitors' price change strategy. This strategy gives a chance to gain more customers and helps the companies gain profit in the long run.

Raise perceived value: Perception is the way of seeing certain things. Different people see the same things in the different view and the perceive it differently in their minds. Customers have certain perceived value of the market products in their minds. In order to respond to the competitor's price change strategies, it is important for us to raise the perceived value of the company products in the market. There are various ways to raise the perceived value of the goods such as reducing perceived risk, bolster up security and credibility, add proof, increase the price, reframe the products. These various methods can help increase the customers and take away customers from the competitors in the market. In the district wise comparison, in Dang district, 56.1% were found in the position of *disagree* and 43.9% were found with *agree* response to this strategy. Similarly, in case of Banke district, 3.4% respondents were disagreeing, 20.3% had neutral response and 76.3% were *agree* on this strategy. In Jumla district, all respondents (100%) *agreed* on this strategy. In the totality of response, 65.2% respondents *agreed* on the strategy of raising perceived value. On the basis of agreement of majority of respondents to this strategy, it could be said that this strategy could be used in the market to attract more customers and also take away customers from the other competitors.

Increase quality and increase price: Quality is the parameter of the goodness/badness of the product and determines its value in the market. Good quality products are liked by everyone in the market. Increasing the quality of the product means the product will be more

beneficial and more customers will buy it. Increasing the quality also leads to increase in the cost of production of the product as better raw materials are required to create better quality products. So, the price of the goods will also have to be increased to earn certain margin of profit along with the production and other costs of the products. This is a method of responding to the competitor's price changes strategies. In the district wise comparison, in Dang, 1.8% were neutral and 98.2% *agreed* on this strategy. Similarly, in Banke district, 3.4% had given response on *disagree*, 10.2% had neutral response and 86.4% *agreed* on this strategy of increasing quality and increasing price. In Jumla district, all respondents (100%) *agreed* in this strategy. In the overall analysis, the finding shows that 93.2% respondents agreed on this strategy of increasing quality and increasing price. The findings show that this strategy was adopted in the market of small scale cottage industry which could improve quality of the products in the market and also became helpful to earn more profit margins.

Launch low price fighter brand: Fighter brand is a low- price offering made by companies to take out their competitors in the market who are trying to underprice them. It is one of the oldest techniques in branding. It is mostly used in difficult economic times. It helps counter-attack the competitors in the market. In the district wise comparison, in Dang district, 87.7% *disagreed* and 12.3% were neutral on this topic. In Banke district, 67.8% were found with response of *disagree*, 32.2% were neutral on this strategy. Similarly, in the analysis of data collected from Jumla district shows that 81.2% respondents had given the response on *disagree* and 18.8% were neutral on the strategy of launch low price fighter brand. In totality, 78.0% respondents were found with response of *disagree* on this method of pricing. So, the findings of this study indicate that this method was not suitable for these types of markets.

CONCLUSION

Price change is one regular process of industries because in the certain time interval, any industry changes the price of their products and services due to the various causes like cost inflation, over-demand, due to increase in cost of raw materials, labor cost, increase in Tax, improve in quality of product etc. On the other hand, customers will pay whatever they think the service is worth; thus pricing in many service businesses is based on whatever the market will bear. At the time of price change, industry should be ready to response the various queries of customers as well as changing strategies of competitors. The study shows that in the overall statistical analysis of this data, it was noticed that 90.2% respondents had given the response on *agree* level about the initiating price increase method which indicates that this method was very suitable and adopted by the owner of industries in study districts. There was significant difference within and between the study districts regarding the price change strategies because the $p = .018$ which is less than .05 significant level at 95% confidence interval. Regarding the response to the competitors' price change strategies, majority of industries stated that they would adopt 'Reduce Price' strategies to response to their competitors. On the basis of report, recommendation is made for introduction of new products as a strategic response to competitors' price change, should be adopted by the managers of small scale industries in Nepal, and should take suggestion of price experts when making pricing decisions.

REFERENCES

1. Arnold, D. R., Hoffman, K. D., & McCormick, J. (1989). "Service Pricing: a Differentiation Premium Approach". *Journal of Services Marketing*, **3** (3):25-33.
2. Ayozie, D. O. (2008). "The Role of Small Scale Industry in National Development in Nigeria". *ICAN Students' Journal* , **12** (1): 10-17.
3. Dockner, E., & Fruchter, G. (2004). "Dynamic Strategic Pricing and Speed of Diffusion". *Journal of Optimization Theory and Applications*, **123** (2): 331–348.
4. Hilton, R. (2005). *Managerial Accounting: Creating Value in a Dynamic Business Environment*. New York: McGraw Hill.
5. Imoleayo, O. F. (2010). "The Impact of Product Price Changes on the Turnover of Small and Medium Enterprises in Nigeria". *Broad Research in Accounting, Negotiation, and Distribution* , **1** (1): 1-20.
6. Jain, S. C. (2006). *Marketing Planning & Strategy.* Sixth Edition. Delhi: BR Publishing Corporation.
7. Kerin, R. A., Hartley, W. S., & Rudelius, W. (2013). *Marketing: The Core* (5th ed.). New York: The McGraw-Hill/Irwin.
8. Kotler, P., & Armstrong, G. (2014). *Principles of Marketing* (Fifteenth Global Edition ed.). Harlow: Pearson Education Limited.
9. Lovelock, C. & Wirtz, J. (2004). *Services Marketing: People, Technology, Strategy*. U.S.A.: Pearson Prentice Hall.
10. MaGrath, A. J. (1991). "Ten Timeless Truth about Pricing". *The Journal of Business and Industrial Marketing*, **6** (3):15-23.
11. McCarthy, E. J. (1975*). Basic Marketing: A Managerial Approach*. Richard D. Irwin, Inc.
12. Monroe, K. (2003). *Pricing- Making Profitable Decisions*. New York: Third Edition McGraw Hill/ Irwin.
13. Obigbemi, I. (2010). "The role of competition on the pricing decision of an organization and the attainment of the organisational objective". *Annals of the University of Petroşani*, Economics, **10** (1): 229-248.
14. Taher, A., & Basha, H. E. (2006). "Heterogeneity of Consumer Demand: Opportunities for pricing of services". *Journal of Product & Brand Management*, **15** (5):331-340.
15. Thomas, D. K. (1978, July August). "Strategy is Different in Service Businesses". *Harvard Business Review*, 158-165.

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COMPUTER SCIENCE

THE INTERNET OF THINGS : A SURVEY

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ABSTRACT

The Internet of Things is a paradigm where everyday objects can be equipped with identifying, sensing, networking and processing capabilities that will allow them to communicate with one another and with other devices and services over the Internet to accomplish some objective. Internet, the networks of networks avails us the world at one click. This paper is a survey on Internet of Things which is believed to be the next evolution of Internet. The Internet of Things (IoT) bridges the cyber and the physical worlds. Ultimately, IoT devices will be ubiquitous, context-aware and will enable ambient intelligence. This paper reports on the current state of research on the Internet of Things by examining the literature, identifying current trends, describing challenges that threaten IoT diffusion, presenting open research questions and future directions and compiling a comprehensive reference list to assist researchers. The benefits of the IoT devices has been explained by describing application of IoT in a smart city.

Keywords: Internet of Things (IoT), Machine to Machine, Survey.

INTRODUCTION

The Internet of Things (IoT) is a novel paradigm that is rapidly gaining ground in the scenario of modern wireless telecommunications. The basic idea of this concept is the pervasive presence around us of a variety of things or objects – such as Radio-Frequency IDentification (RFID)tags, sensors, actuators, mobile phones, etc. – which, through unique addressing schemes, are able to interact with each other and cooperate with their neighbors to reach common goals [1]. Anyone who says that the Internet has fundamentally changed society may be right, but at the same time, the greatest transformation actually still lies ahead of us. Several new technologies are now converging in a way that means the Internet is on the brink of a substantial expansion as objects large and small get connected and assume their own web identity.

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Following on from the Internet of computers, when our servers and personal computers were connected to a global network, and the Internet of mobile telephones, when it was the turn of telephones and other mobile units, the next phase of development is the Internet of Things, when more or less anything will be connected and managed in the virtual world. [2] This revolution will be the Net's largest enlargement ever and will have sweeping effects on every industry — and all of our everyday lives.

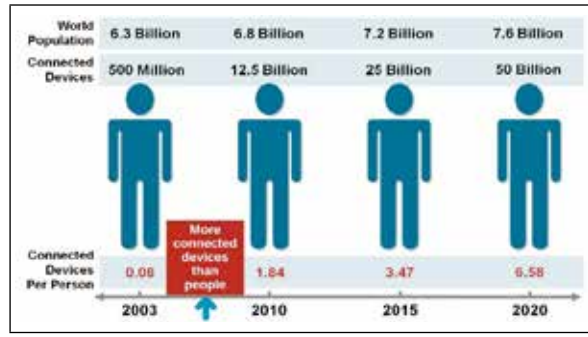

Figure 1: Internet Usage and Population Statistics

In 2003, the number of things connected to the internet was greater than the people living on earth. By2020, the number of things connected to the internet will be about 50 billion. According to the Global System for Mobile Communications (GSMA), this amounts to $1.3 trillion revenue opportunities for mobile network operators alone spanning vertical segments such as health, automotive, utilities and consumer electronics. Internet of Things is an integrated part of future internet and could be defined as a dynamic global network infrastructure with self configuring capabilities based on standard and interoperable communication protocols where physical and virtual things have identities, physical attributes and virtual personalities and use intelligence interfaces and are seamlessly integrated into the information network.

THE IOT HISTORY

IoT Definition

Internet has become more prevalent in our lives in a shorter time period than any other technology in the history. It revolutionized the way people communicate. Currently, the Internet involves the process of connecting machines, equipment, software, and things in our surroundings [11]. This connection will be through the use of the unique Internet protocol address that permits things for communicating to each other without human intervention. This new scenario is called IoT. The term IOT is formalized by MIT Auto-ID center at [3]. Till now there is no accepted or standard definition for IoT[11].

"Things are active participants in business, information and social processes where they are enabled to interact and communicate among themselves and with the environment by exchanging data and information sensed about the environment, while reacting autonomously to the real/physical world events and influencing it by running processes that trigger actions and create services with or without direct human intervention."

—Cluster of European research projects on the Internet of Things

"The Internet of Things represents an evolution in which objects are capable of interacting with other objects. Hospitals can monitor and regulate pacemakers at long distance, factories can automatically address production line issues and hotels can adjust temperature and lighting according to a guest's preferences, to name just a few examples."

– IBM

History

The **Internet of Things** (**IoT**) is the network of physical objects, devices, vehicles, buildings and other items which are embedded with electronics, software, sensors, and network connectivity, which enables these objects to collect and exchange data[4]. The Internet of Things allows objects to be sensed and controlled remotely across existing network infrastructure, creating opportunities for more-direct integration between the physical world and computer-based systems, and resulting in improved efficiency, accuracy and economic benefit; when IoT is augmented with sensors and actuators, the technology becomes an instance of the more general class of cyber-physical systems, which also encompasses technologies such as smart grids, smart homes, intelligent transportation and smart cities. Each thing is uniquely identifiable through its embedded computing system but is able to interoperate within the existing Internet infrastructure. Experts estimate that the IoT will consist of almost 50 billion objects by 2020.

Figure 2: History in a Capsule

British entrepreneur Kevin Ashton first coined the term in 1999 while working at Auto-ID Labs (originally called Auto-ID centers - referring to a global network of Radio-frequency identification (RFID) connected objects). Typically, IoT is expected to offer advanced connectivity of devices, systems, and services that goes beyond machine-to-machine communications (M2M) and covers a variety of protocols, domains, and applications [5]. The interconnection of these embedded devices (including smart objects), is expected to usher in automation in nearly all fields, while also enabling advanced applications like a Smart Grid, and expanding to the areas such as smart cities.

ARCHITECTURE OF INTERNET OF THINGS

Implementation of IoT is based on an architecture consisting of several layers: from the field data acquisition layer at the bottom to the application layer at the top. The layered architecture is to be designed in a way that can meet the requirements of various industries, enterprises, societies, institutes, governments etc. Figure 3 presents a generic-layered architecture for IoT

[6]. The layered architecture has two distinct divisions with an Internet layer in between to serve the purpose of a common media for communication. The two lower layers contribute to data capturing while the two layers at the top is responsible for data utilization in applications.

The 5-Layer Architecture

The 3-layer architecture became not sufficient due to the expected IoT development. Therefore, 5-layer architecture is proposed. The first layer is called business. The purpose of this layer is to define the IOT applications charge and management. Also, it is responsible about the user's privacy and all research related to IOT applications[7]. The second layer is called application. The target of this layer is determining the types of applications, which will be used in the IoT.

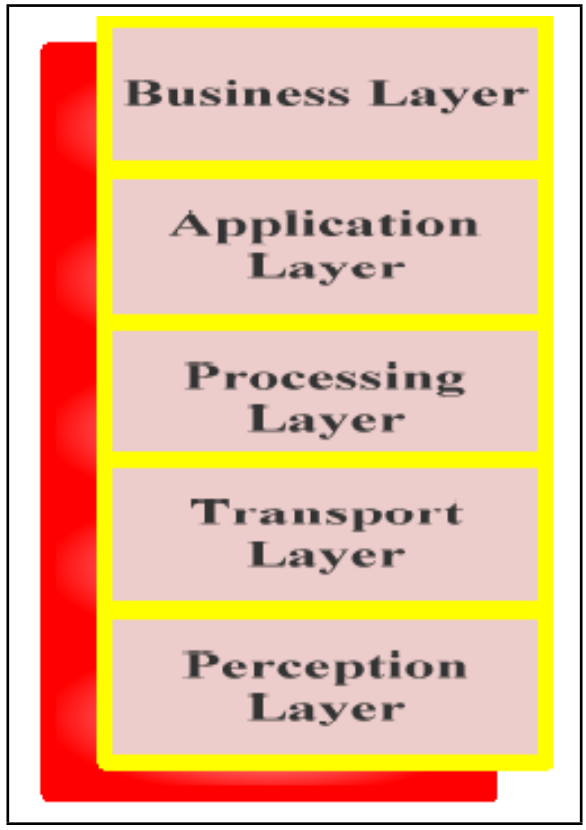

Figure 3: Architecture

The third layer is called processing. Its responsibility is to handle the information gathered by perception layer. The handling process contains two main topics; storing and analyzing [11]. The target of this layer is extremely hard due to the huge gathered information about system things. So, it uses some techniques such as database software, cloud computing, ubiquitous computing, and intelligent processing in information processing and storing. The fourth layer is called transport. It seems like the network layer in the 3-layer architecture [8]. It transmits and receives the information from the perception layer to the processing layer

and *vice versa*. It contains many technologies such as infrared, Wi-Fi, and Bluetooth. Also, the target of this layer is to address each thing in the system using IPV6. The fifth layer is called perception. The target of this layer is to define the physical meaning of each thing in the IoT system such as locations and temperatures. It also gathers the information about each object in the system and transforms this data to signals. In addition, it contains the technologies that are used in the IoT such as the RFID and the GPRS [9]. Figure 3 presents the 5-Layer architecture.

TECHNOLOGIES

In general, three types of technologies enable IoT.

(i) **RFID and Near-Field Communication**: In the 2000s, RFID was the dominant technology. Later, NFC became dominant (NFC). NFC has become common in smart phones during the early 2010s, with uses such as reading NFC tags or for access to public transportation.

(ii) **Optical Tags and Quick Response Codes**: This is used for low cost tagging. Phone camera decodes QR code using image-processing techniques [10]. In reality QR advertisement campaigns gives less turnout as users need to have another application to read QR codes.

(iii) Bluetooth Low Energy: This is one of the latest technologies. All newly releasing smart phones have BLE hardware in them. Tags based on BLE can signal their presence at a power budget that enables them to operate for up to one year on a lithium coin cell battery.

RFID

Radio-Frequency IDentification (RFID) is the wireless use of electromagnetic fields to transfer data, for the purposes of automatically identifying and tracking tags attached to objects [11]. The tags contain electronically stored information. Some tags are powered by electromagnetic induction from magnetic fields produced near the reader. Some types collect energy from the interrogating radio waves and act as a passive transponder. Other types have a local power source such as a battery and may operate at hundreds of meters from the reader. Unlike a barcode, the tag does not necessarily need to be within line of sight of the reader and may be embedded in the tracked object. RFID is one method for Automatic Identification and Data Capture (AIDC).

RFID tags are used in many industries, for example, an RFID tag attached to an can be tracked through warehouses; and implanting RFID microchips in livestock and pets allows positive identification of animals.

Since RFID tags can be attached to cash, clothing, and possessions, or implanted in animals and people, the possibility of reading personally-linked information without consent has raised serious privacy concerns. These concerns resulted in standard specifications development addressing privacy and security issues. ISO/IEC 18000 and ISO/IEC 29167 use on-chip cryptography methods for untraceability, tag and reader authentication, and over-the-air privacy. ISO/IEC 20248 specifies a digital signature data structure for RFID and barcodes providing data, source and read method authenticity. This work is done within ISO/IEC JTC 1/SC 31 Automatic identification and data capture techniques [12].

Sensors

Many IoT devices have sensors that can register changes in temperature, light, pressure, sound and motion. They are your eyes and ears to what's going on the world. Before we talk about what they do, let's describe them. These sensors are part of a device category called a micro electromechanical system (MEMS) and are manufactured in much the same way microprocessors are manufactured, through a lithography process[11]. These sensors can be paired with an application-specific integrated circuit or an ASIC. This is a circuit with a limited degree of programming capability and is hardwired to do something specific. It can also be paired with microprocessor and will likely be attached to a wireless radio for communications.

For example, you are away on vacation and the house is empty. A moisture sensor detects water on the basement floor. That sensor finding is processed by an app, which has received another report from a temperature sensor that detects the flow of water in the main water pipe. (When water automobile during production can be used to track its progress through the assembly line; RFID-tagged pharmaceuticals flows, it takes away heat and lowers the temperature). That both sensors are detecting anomalies is cause for concern. A high rate of flowing water may signal a burst pipe, triggering an automated valve shutoff; a slight water flow might be a running toilet, and the water on the basement floor by routine leakage from a heavy rain[13]. In either case, you get a machine-generated message describing the findings.

IPv6

The original idea of the Auto-ID Center is based on RFID-tags and unique identification through the Electronic Product Code however this has evolved into objects having an IP address or URI[11].

An alternative view, from the world of the Semantic Web focuses instead on making all things (not just those electronic, smart, or RFID-enabled) addressable by the existing naming protocols, such as URI. The objects themselves do not converse, but they may now be referred to by other agents, such as powerful centralized servers acting for their human owners.

The next generation of Internet applications using Internet Protocol Version 6 (IPv6) would be able to communicate with devices attached to virtually all human-made objects because of the extremely large address space of the IPv6 protocol[14]. This system would therefore be able to scale to the large numbers of objects envisaged.

A combination of these ideas can be found in the current GS1/EPC global EPC Information Services (EPCIS) specifications. This system is being used to identify objects in industries ranging from aerospace to fast moving consumer products and transportation logistics [11].

APPLICATIONS OF IOT

The potentialities offered by the IoT make it possible to develop numerous applications based on it, of which only a few applications are currently deployed. In future, there will be intelligent applications for smarter homes and offices, smarter transportation systems, smarter hospitals, smarter enterprises and factories [15]. In the following subsections, some of the important example applications of IoT are briefly discussed.

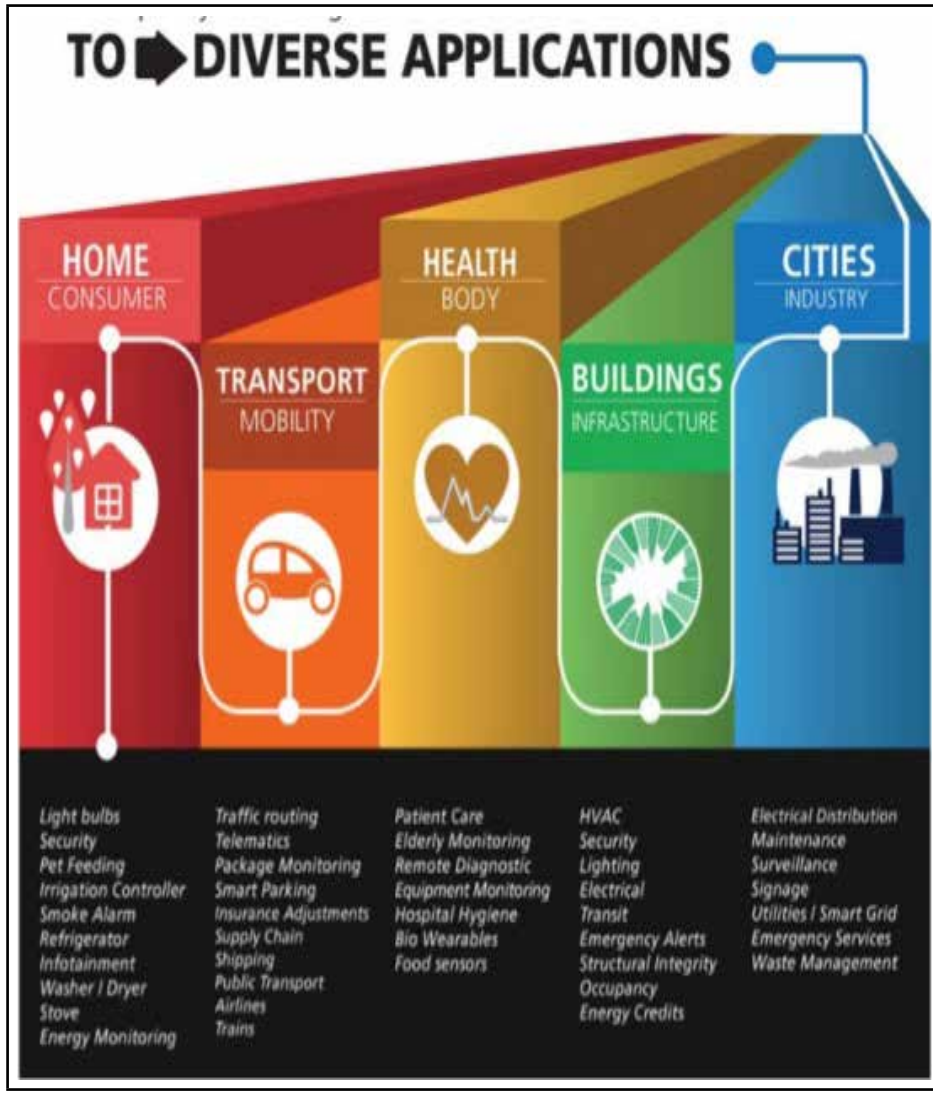

Figure 4: Applications of IoT

Healthcare

The IoT is proposed to improve the quality of human life by automating some of the basic tasks that humans must perform. In that sense, monitoring and decision making can be moved from the human side to the machine side. One of the main applications of IoT in healthcare is in assisted living scenarios. Sensors can be placed on health monitoring equipment used by patients. The information collected by these sensors is made available on the Internet to doctors, family members and other interested parties in order to improve treatment and responsiveness [16]. Additionally, IoT devices can be used to monitor a patient's current medicines and evaluate the risk of new medications in terms of allergic reactions and adverse interactions.

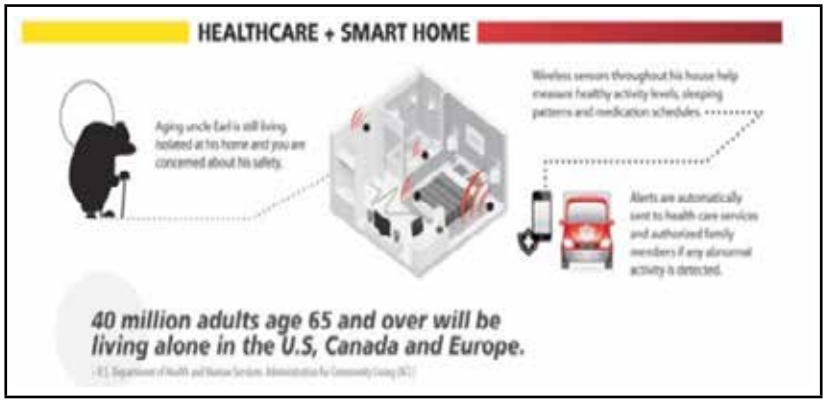

Figure 5: Healthcare

Smart Environments Domain

Smart Water Supply

Smart cities must monitor water supply to ensure that there is adequate access for resident and business need. Wireless Sensor Networks provide the technology for cities to monitor their water piping systems more accurately and discover their greatest water loss risks. Cities that are addressing water leakage problem with sensor technology are producing high savings from their investment. Tokyo, for example, has calculated they save $170 million each year by detecting water leakage problems early (Libelium, 2013). The system can report pipe flow measurement data regularly, as well as send automatic alerts if water use is outside of an estimated normal range. This allows a smart city to determine the location of leaking pipes and prioritize repairs based on the amount of water loss that could be prevented.

Figure 6: Smart Home

Smart Homes and Offices

We are surrounded by various electronic gadgets around us such as microwave ovens, refrigerators, heaters, air conditioners, fan and lights. Actuators and sensors can be installed in these devices in order to utilize the energy sufficiently and also to add more comfort in life. These sensors can measure the outside temperature and even can determine the occupants inside the rooms and thereby control the amount of heating, cooling and flow of light etc. Doing all these can help us to minimize the cost and increase energy saving.

Improved Gyms

The gymnasium experience can be enhanced by involving new technologies like a separate exercise profile which can be installed on machines and each person can be identified from his identification id alone and thereby, concerned profile will get activated.

Food Sustainability

Food that we eat has to go through various stages before they arrive in the refrigerators. They are bound in a strict food cycle: production, harvesting, transportation and distribution. With the use of appropriate sensors, we can prevent the food from climatic damages by keeping a good eye on temperature, humidity, light, heat etc. Sensors can measure these variations precisely and notify the concerned person. Monitoring helps in prevention of possible plant

Transportation and Logistic domain

Smart Parking

The new Smart Parking sensor's to be buried in parking spaces to detect the arrival and departure of vehicles. The Smart parking provides extensive parking management solutions which helps motorists save time and fuel (Libelium, 2013). A significant contribution to congestion arises from motorists searching for accessible parking spaces. Providing accurate information about parking spaces helps traffic flow better, and this will also allow the deployment of application to book parking spaces directly from the vehicle [17]. This will help to reduce CO2 emissions and to minimize traffic jams.

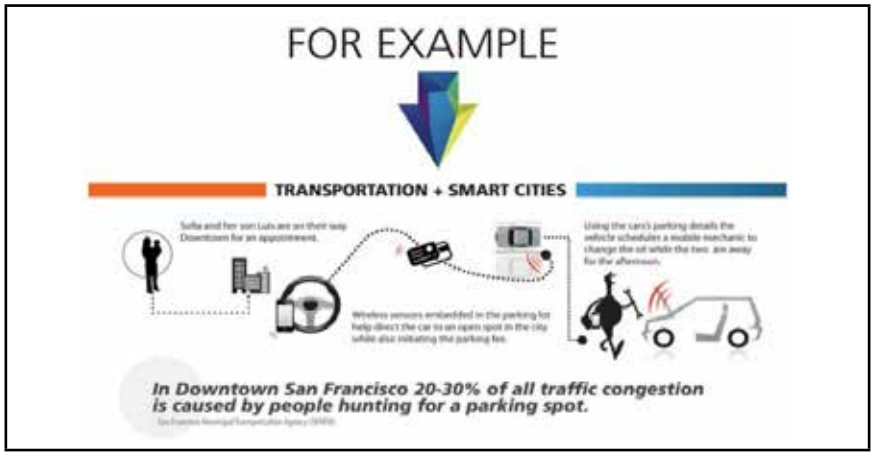

Figure 8: Transportation [13]

3D Assisted Driving

Vehicles like cars, buses and trains along with the roads and rails equipped with sensors may provide valuable information to the driver to provide better navigation and safety. With the use of assisted driving, we will be able to find the right track with prior information about traffic jams and incidents. In an Enterprise context, information about the vehicle transporting goods together with information about the type and status of the goods can integrate to provide valuable information about the delivery time, delivery delays and faults.

Figure 9:Autodriving[13]

Augmented Maps

Tourist augmented maps with tags allow NFC-equipped phones to browse the information about the places and quickly connect it to the web services providing information about hotels, restaurants, monuments, theater and the local attractions. This can be done by hovering your mobile phone over the tag within its reading range so that the additional information about the marker can be displayed on the screen.

Logistics

Implementing the Internet of Things in Retail chain monitoring has many advantages: RFID and NFC can be used to monitor almost every link of supply chain, ranging from commodity details, raw material purchasing, production, transportation, and storage, sale of product and after sales services. With the help of IoT, we will track the inventory in the warehouse so that stock can be refilled at the appropriate time for continuous sale and this will reduce the waiting time of customer which result in customer satisfaction, which further results in increased sales[17].

DISADVANTAGES AND CHALLENGES

Disadvantages of IoT:

Privacy

Internet of Things (IOT) is going to add a lot to our lives, it's probably going to take our privacy in payment, whether one wants it to or not.

Concept of being offline, of being unavailable, or simply being alone, will recede.

We are standing on the brink of a post-privacy society.After implementation of IOT We

may well be living in the last era of privacy.

Complexity

Any failure or bugs in the software or hardware will have serious consequences.

Power failure can cause a lot of inconvenience.

Development needs to be easy for all developers, not just to experts.

Change In Human Behavior:

As a society, we're addicted to tech in a way that no generation ever has been before.

When we live in a world in which there are countless sensors and smart objects around us, all the time; when the clothes we wear, even things inside our bodies, are smart and connected then change in behavior is obvious.

Human will be like robot but carrying and pumping blood.

Environmental Impact

A concern regarding IOT technologies pertains to the environmental impacts of the manufacture, use, and eventual disposal of all these semiconductor-rich devices.

Electronic components are often simply incinerated or dumped in regular landfills, thereby polluting soil, groundwater, surface water, and air.

Air will be cover with large dense network.

Lesser Employment of Menial Staff:

The unskilled workers and helpers may end up losing their jobs in the effect of automation of daily activities. This can lead to unemployment issues in the society. This is a problem with the advent of any technology and can be overcome with education.

CHALLENGES OF IOT

Connectivity Variety of wired and wireless connectivity standards are required to enable different application needs.

Power is critical Many IOT applications need to run for year's over2batteries and reduce the overall energy consumption.

IOT is complex IOT application development needs to be easy for all developers, not just to experts.

Government interest: If Government allows then only set up of I.O.T in a particular country is possible.

Government allow only when they get profit from this new technology.

Also depend very much upon the economy and revenue of the country.

Compatibility As devices from different manufacturers will be interconnected; the issue of compatibility in tagging and monitoring crops up. Although this disadvantage may drop off if all the manufacturers agree to a common standard, even after that, technical issues will

persist[18]. Today, we have Bluetooth-enabled devices and compatibility problems exist even in this technology! Compatibility issues may result in people buying appliances from a certain manufacturer, leading to its monopoly in the market

CONCLUSION

The internet has drastically changed the way we lived, as in scenario all the interaction is done over the internet. The IoT has the potential to add a new dimension to this process by enabling communication between smart objects. IoT should be considered as a part of future internet as everything is going to be connected in a network so that objects can interact with each other, but still there are lots of issues which are to be solved to make this a reality. Lot of research is required in this field, once implemented successfully; the quality of life is improved because of the reduction of the effort made by humans on unimportant things.

In this paper, we presented the technologies and applications that can be used to make Internet of Things a reality. After that, we state some good examples where Internet of Things is of great use, and at last we discuss some open issues which are still to be solved before the wide acceptance of this technology.

REFERENCES

1. Luigi A., Antonio I., Giacomo M. (2010). "The Internet of Things: A Survey". *Science Direct Journal of Computer Networks*, Volume **54**: 2787–2805.
2. Yinghui H., Guanyu L.(2010). "Descriptive Models for Internet of Things". IEEE *International Conference on Intelligent Control and Information Processing*, Dalian, China, pp. 483-486.
3. Mealling M. (2003). "Auto-ID Object Name Service (ONS) v1.0", *Auto-ID Center Working Draft.*
4. Bo Y., Guangwen H. (2008). "*Application of RFID and Internet of Things in Monitoring and Anticounterfeiting for Products*". International Seminar on Business and Information, Wuhan,Hubei, China, pp. 392- 395.
5. Zouganeli E., Einar Svinnset I. (2009). "*Connected Objects and the Internet of Things – A Paradigm Shift*". International Conference on Photonics in Switching, Pisa, Italy, pp.1-4.
6. Tongzhu Z., Xueping W., Jiangwei C., Xianghai L., Pengfei C. (2010) . "Automotive recycling information management based on the Internet of Things and RFID technology". *IEEE International Conference on Advanced Management Science* (ICAMS), Changchun, China,pp. 620 – 622.
7. Muriel D., Juan F. (2010). "*Expanding the Learning Environment: Combining Physicality and Virtuality- The Internet of Things for eLearning*". IEEE International Conference on Advanced Learning Technologies (ICALT), Sousse, Tunisia, pp.730- 731.
8. Gustavo G, Mario O., Carlos K. (2008). "*Early infrastructure of an Internet of Things in Spaces".* Eighth IEEE International Conference on Advanced Learning Technologies,

Cantabria, Spain, pp. 381-383.

9. D. Giusto, A. Iera, G. Morabito, L. Atzori (Eds.)(2010). *The Internet of Things*, Springer. ISBN: 978-1-4419-1673-0.
10. Yinghui *et al*., n.2.
11. D. Giusto *et al.,* n.8.
12. Mealling M., n.3.
13. https://en.wikipedia.org/wiki/Internet_of_Things.
14. Miao W., Ting L., Fei L., ling S., Hui D.(2010). "Research on the architecture of Internet of Things". *IEEE International Conference on Advanced Computer Theory and Engineering* (ICACTE), Sichuan province, China, pp. 484-487.
15. Pande, Prajakta & Anand R. Padwalkar(2014). "Internet of Things –A Future of Internet. A Survey", *International Journal of Advance Research in Computer Science and Management Studies*, Vol.**2** (2):354-361. Available at http://ijarcsms.com/docs/paper/volume2/issue2/V2I2-0082.pdf
16. Chatziefthymiou, Styliani and Sotirios K. Goudos(2015). "A Survey of IoT: Architecture, Applications and Future Vision", *4th International Conference on Modern Circuits and System Technologies* http://mocast.physics.auth.gr/images/Papers/PAPER_32F.pdf
17. Aly, H; Mohammed Elmogy Shereif Barakat (2015). "Big Data on Internet of Things:Applications, Architecture, Technologies,Techniques and Future Directions." *International Journal of Computer Science Engineering* (IJCSE), Vol.**4**(6): 300-313.
18. Said, Omar & Masud, Mehedi(2013). "Towards Internet of Things: Survey and Future Vision", *International Journal of Computer Networks (IJCN*), Volume **5**(1):1-17.

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PHYSICS

MODULAR APPROACH TO HARNESS THERMO-ELECTRIC EFFECT

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ABSTRACT

In well known thermo-electric effect (i.e. in thermo-couples generally used in college laboratories), the maximum temperature difference between the junctions approaches $100^{o}C$ resulting in small magnitude of the current and potential difference produced. These are in the micro-range. To have higher current and potential differences, a different type of experiment is to be performed. In this paper, an experiment has been proposed where thermo-electric effect is observed more prominently for different temperatures of a hotter conductor while keeping another conductor fixed at lower temperature (generally the room temperature) making the temperature difference too high, resulting into increase in the current and potential difference. Experiment has also been performed to increase the thermo-electric power by joining a number of thermo-couples.

Keywords: Thermo-electric effect, Seebeck effect, thermo-panel.

INTRODUCTION

Thermo-electric effect is nothing but the direct conversion of temperature difference to electric potential difference. This is a reversible effect. The first thermo-electric effect was discovered in 1821 by T.J.Seebeck [1, 2]. This is nothing but the production of potential difference by heating one of the two junctions formed by two dissimilar electrical conductors. In 1834, J. Peltier observed the second thermo-electric effect [2]. The next thermoelectric effect is Thomson effect [2, 3] which is related to the e.m.f. that develops between two parts of the same conductor when they are at different temperatures. If two parts of the conductor are at small temperature difference dT, then the electric potential difference dV is proportional to dT or $dV=\sigma dT$ where σ is the constant of proportionality and is known as Thomson co-efficient. It is to be noted that Seebeck and Peltier effects occur only at the junctions of two dissimilar conductors which suggest that these effects are interfacial phenomena but depend on the bulk

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properties of the materials involved. The underlying principle of the first experiment is as follow:

> *"When a conductor is heated the conducting electrons become excited due to increase of their thermal energy (or thermal velocity). If this hot conductor comes in contact with another (may be a similar or dissimilar one) at lower temperature, the conducting electrons diffuse to the later. If a complete circuit is formed then this flow of electrons will generate a current which subsequently produce a potential difference between the two."*

If the temperature difference between the two conductors coming in contact be large enough, then the potential difference produced may be in the mV order. Several workers have studied the effect with different conductors.

In this work, an experimental arrangement related to Thomson effect is put forward by which we may get thermo-e.m.f.s in the range of milli-volt and then, an experimental arrangement connected to Seebeck effect has been done by which one may generate thermo e.m.f.s and electric current in the range of several volt and ampere.

EXPERIMENTAL SET UP AND PROCEDURE

A meter M (for measuring current or potential difference) is connected to two copper wires. A and B are the ends of the wires. The terminal B may be plain as in Figure 1(a) or it may be coiled (either a coil of several turns or co-axial coils) as in Figure 1(b). This terminal may be heated to high temperature while A is kept at room temperature. If B is made to touch the cold end A suddenly, a continuous current starts to flow which attains its maximum very quickly.

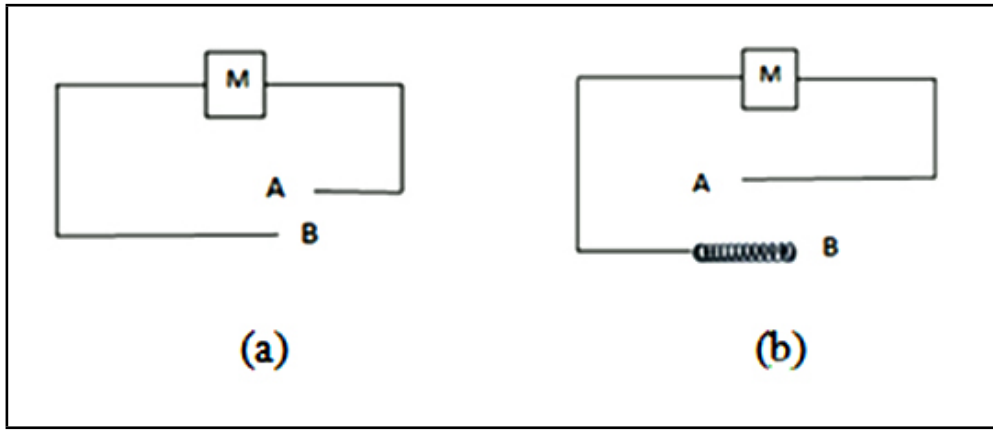

Figure 1: **Circuit Connections**

The maximum current and potential differences are read. It is seen that the current and potential difference dies out instantaneously since the temperature difference between A and B does so. The dying out time may differ with the material of the wires, the area of contact of the wires (i.e. variation of contact resistance), presence of other materials close to the set up which may affect the thermal radiation mainly from B.

In this experiment the heat of the flame of a candle [4] at different colored regions [5] are used as source of heating the terminal B. The temperature of the regions having different colors of the flame of a candle are shown in figure 2

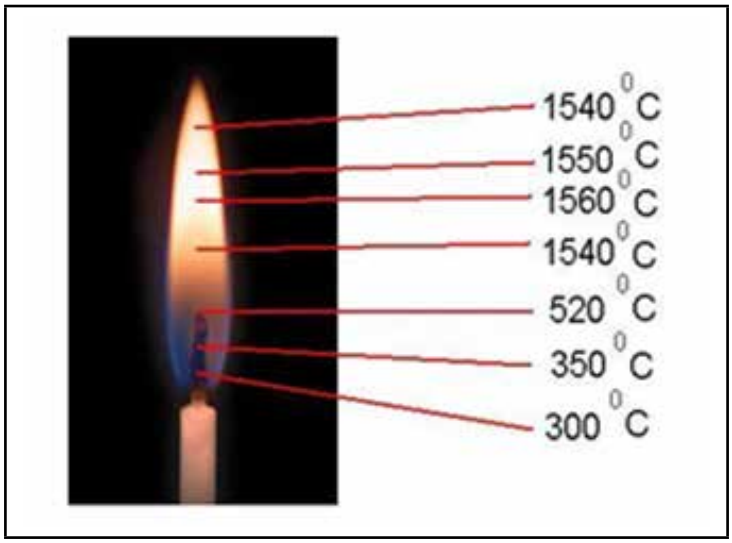

Figure 2: Temperature of Different Regions of a Candle Flame

Source: www.kristallikov.net/page52e.html

It is to be noted that when the heated end B is taken out of the flame its temperature decreases rapidly due to radiation. This radiation loss could, to some extent, be reduced by making the end B coiled as shown in Figure 1(b).

Readings of maximum voltage and current are taken when B, at different high temperatures suddenly touches A. The readings are shown in Table 1 and graphically in Figure 3.

Table 1: Variation of Voltage and Current with Temperature Difference

No.of observations.	Temperature of B (T_1) in °C	Temperature of A (T_2) in °C	Temperature difference (T_1- T_2) in °C	Meter reading in milli- volt	Meter reading in micro-ampere
1	30	30	0	0	0
2	350	30	320	35	21
3	520	30	490	55	32.5
4	800	30	770	95	56
5	1540	30	1510	210	125
6	1560	30	1530	215	127

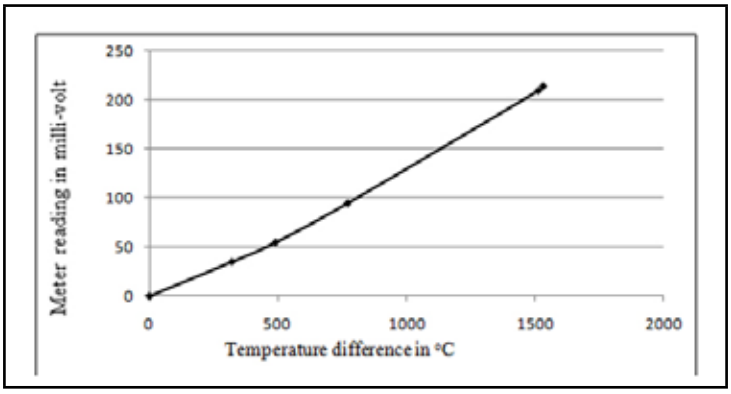

Figure 3: Variation of Voltage with Temperature Difference

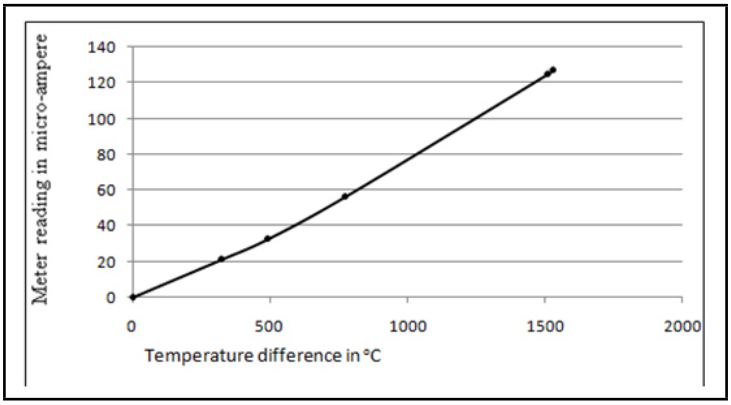

Figure 4: Variation of Current with Temperature Difference

The experiment implies that flow of thermal energy through a junction or any section of a conductor produces electric current.

USE OF THERMO-COUPLE AS AN ELECTRIC POWER GENERATOR

One can connect a number of thermo-couples with series combination as shown in Figure 5. Here, A is the region of junctions which are at low temperature (room temperature) and B is the region of junctions which is heated.

Now, the junctions of region B is heated with kerosene flame (990^{o}C) [6]

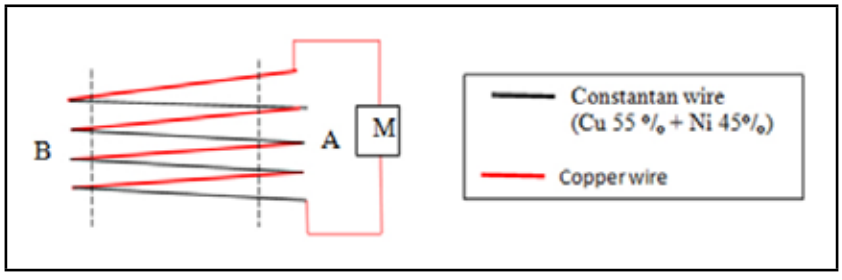

Figure 5: Series Connection of Thermo-couples

The readings of voltage and current for different number of junctions connected in series combination are given in Table 2. Here, the junctions of region B is heated with kerosene flame (990 °C) [6]. In our experiment, every junction is made by copper and constantan (Cu 55 $^{o}/_{o}$ + Ni 45$^{o}/_{o}$) wire. Constantan is collected from the coil of rheostat [7].

Table 2: Change of Voltage and Current with Cumber of Junctions Connected in Series

No. of observations	Length of the wire in cm	Number of junctions	Meter reading in milli- volt	Meter reading in milli-ampere
1	25	1	20	25
2	25	2	41	28
3	25	3	60	34
4	25	4	80	31
5	25	5	100	28
6	25	6	120	26

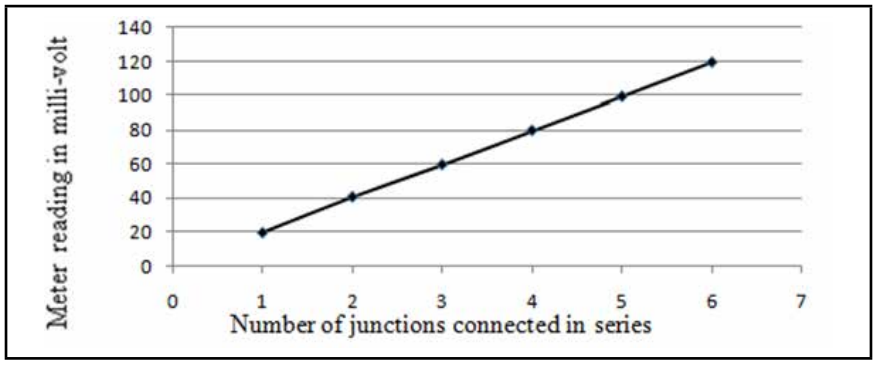

Figure 6: Change of Voltage with Number of Junctions Connected in Series

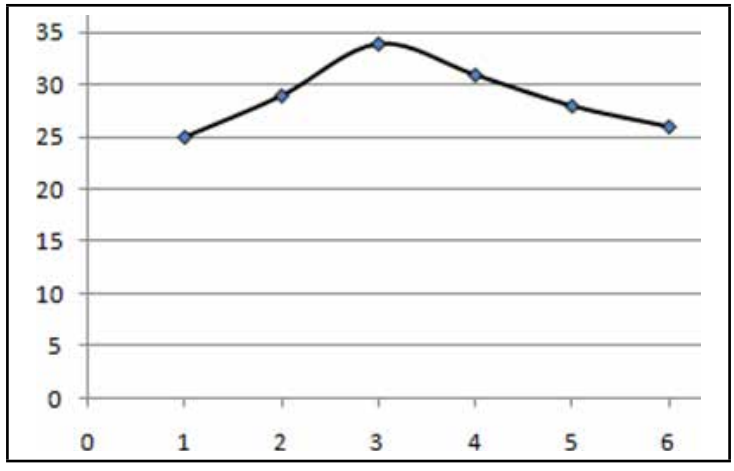

Figure 7: Change of Current with Number of Junctions Connected in Series

The result of the experiment show that voltage increases with increase of number of junctions connected in series but current increases with small increase of the number of junctions and then decreases rapidly.

One can connect a number of thermo-couples with parallel combination as shown in Figure 8(a). Here, A is the region of junctions at low temperature (room temperature) and B is the hot one.

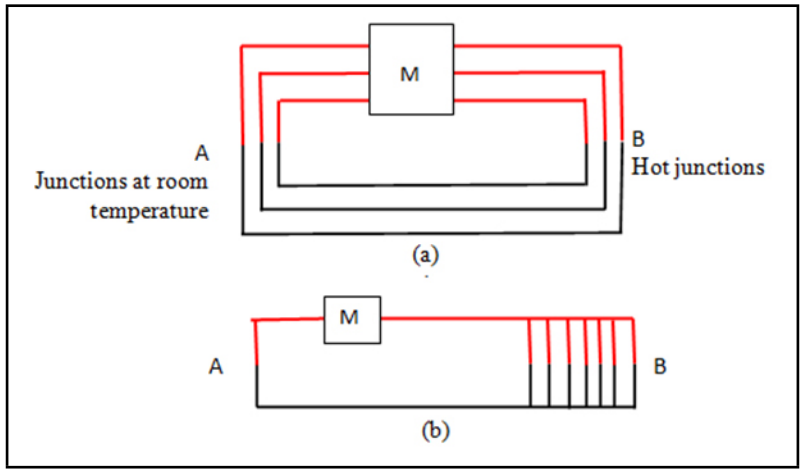

Figure 8: Parallel Connection of Thermo-couples

Now, length between A and B is comparatively small and one can use the circuit as shown in Figure 8(b) for parallel combination instead of Figure 8(a). Here, in Figure 8(b), a number of parallel junctions connected in region B and A constitute a single junction. Now, connecting the wires using Figure 8(b) we obtain the results given in Table 3 and Figure 9.

Table 3: Change of Voltage and Current with Number of Junctions Connected in Parallel

No.of observations	Length of the wire in cm	Number of junctions in parallel combination	Meter reading in milli- volt	Meter reading in milli- ampere
1	6	1	40	70
2	6	2	40	100
3	6	3	40	160
4	6	4	40	200
5	6	5	40	240
6	6	6	40	280
7	6	7	40	310
8	6	8	40	370

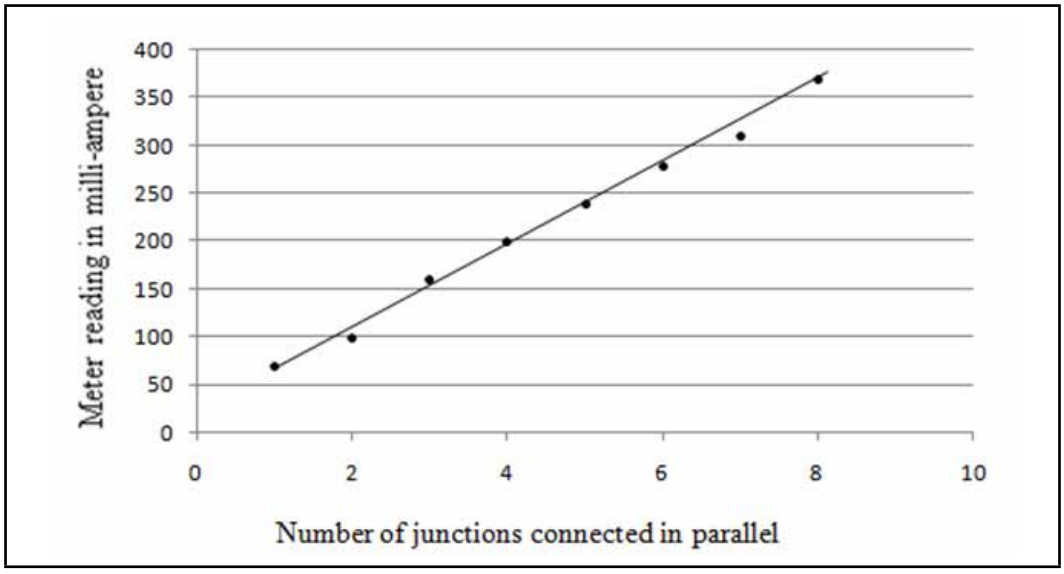

Figure 9: Change of Current with Number of Junctions Connected in Parallel

It is also pointed out that voltage is unchanged with change of the number of junctions at a fixed temperature difference and length of wires connected in parallel combination. But, electric current is increased with increase of number of said junctions. The result of the experiment show that voltage increases with increase of number of junctions connected in series but current decreases rapidly. It is pointed out that when number of junctions is increased then, length of the total wire would be increased and resistance increases. Therefore, current decreases with increase of number of junctions. It is already seen that voltage increases with increase of number of junctions connected in series but current increases with small increase of the number of junctions and then decreases rapidly due to increase of length of the wire as well as resistance of it. Now, Table 4, Figure 10 and Figure 11 show respectively the change of voltage and current with length of the wire between two junctions hot and cold.

Table4: Change of Voltage and Current with Length of the Wire Between Junctions

No. of observations	Length of the wire in cm	Meter reading in milli- volt	Meter reading in milli- ampere
1	6	40	90
2	10	36	62
3	20	31	30
4	30	28	16
5	40	26	09
6	50	25	05

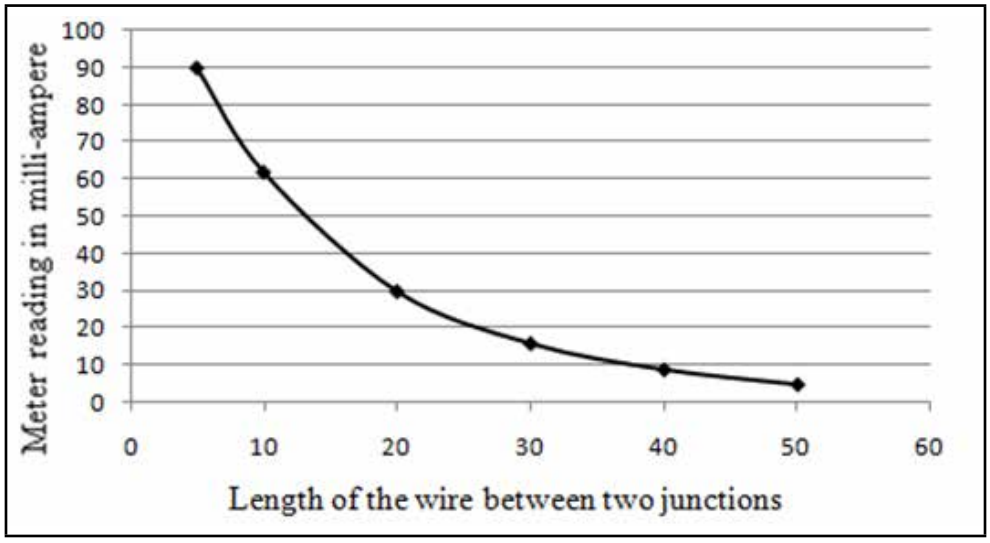

Figure 10: Change of Current with Length of the Wire Between Two Junctions

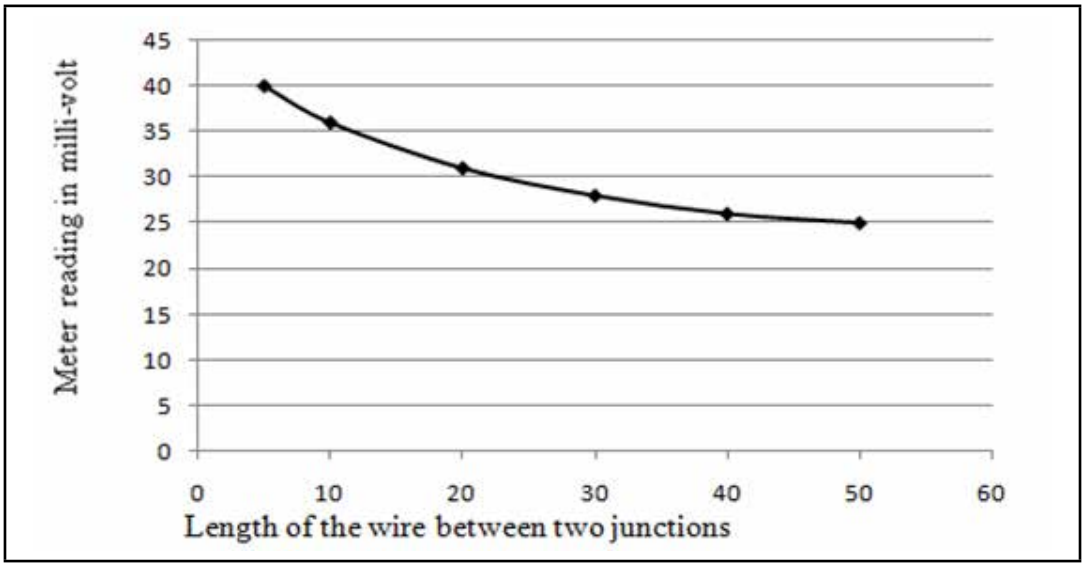

Figure 11: Change of Voltage with Length of the Wire between two Junctions

REVIEW OF THE RESULTS

The results obtained show the following characteristics:

1. If length of the wire between two junctions, hot and cold, be comparatively small keeping sufficient temperature difference between them then, meter readings would go up.
2. If the junctions are connected in series combination satisfying condition 1 then voltage increases but current decreases.

3. If the junctions are connected in parallel satisfying the first condition then current increases keeping voltage approximately steady.

Now, following the above criterion of the results, one can connect a large number of thermo-couples in parallel combination which may be called a **module** and then connect a number of such **modules** in series as shown in Figure 12.

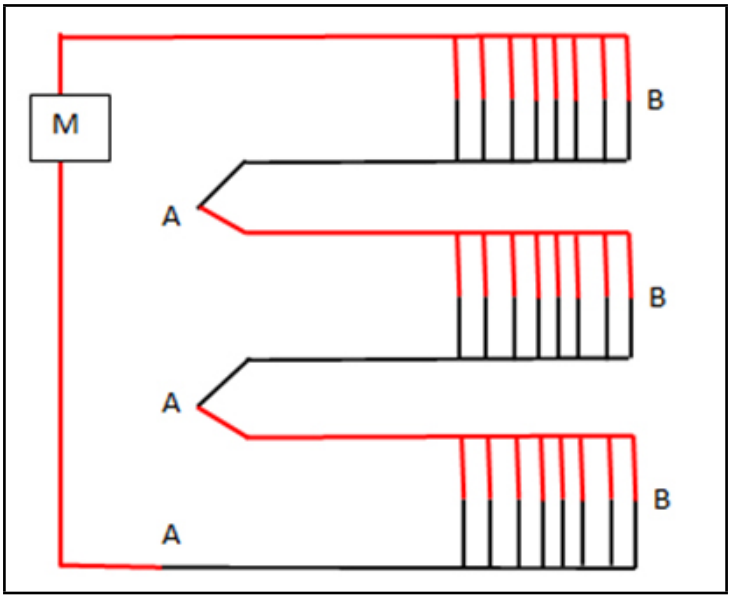

Figure 12: Connections of Three modules in Series

It is pointed out that temperature of each parallel junction in the region B of each module in Figure 8(b) should be same. Otherwise, two adjacent parallel junctions form a thermocouple locally and meter reading decreases.

However, choosing the suitable combinations and a number of junctions in a small region following Figure 12, one may get meter reading in volt and ampere. Now, the result in the Table given below is for a trial which is easily done in the laboratory using the set up of Figure 12.

Table 5: Voltage and Current for 5-Junctions in a Module

Number of parallel junctions connected in a module	5
Number of modules connected in series	5
Length of wire between two terminals	5 cm
Temperature of hot junctions (B)	990°C, Temperature of kerosene flame
Temperature of cold junctions (A)	30°C, Room temperature
Meter reading in volt	0.15 Volt
Meter reading in ampere	0.11 Amp

It is also pointed out that meter readings for one thermo-couple are 30 milli-volt and 100 milli- ampere keeping temperature difference and length between two junctions the same as shown in the above Table.

CONCLUSION

In first experiment, it is seen that when hot end of a wire be touched to the cold end of the wire, a large temperature difference exists between two sides of the junctions which is the cause of electric current through the circuit. This phenomenon implies that flow of thermal energy through a conductor creates electric current.

We know that by connecting a number of photo-diodes, a solar panel is made. Similarly by connecting a number of thermo-couples as shown in Figure 12, one can make thermo-panel from which we may get usable electrical energy.

Solar panel can work at normal temperature but thermo-panel is effective at high temperature. It is necessary to have more study to find out such materials that will show better result of Seebeck effect at a temperature not more than boiling point of water. Then we can use this as an electric power generator on large scale.

For first set up we may say that although the method cited here is a crude one yet, in spite of all its drawbacks, it may be used for approximate measurement of temperature of a hot body by knowing the thermo-e.m.f. produced after it comes in contact with another one at lower temperature.

This is a method where no junction of two dissimilar metals is required. Similar or dissimilar metals with open ends may serve the purpose of temperature measurement.

Again, the studies in this work with the second set up reveals that large number of thermo-couples, used in series and or parallel could be used as thermo-electric generators.

REFERENCES

1. Goldsmid, H.J.(2016). *Introduction to Thermoelectricity*, Springer Series in Material Science,**121**, pp. 1-7, DOI 10.1007/978-3-662-49256-71
2. Goupil, Christophe (2016). *Continuum Theory and Modelling of Thermoelectric,* Wiley-VCH Verlag GmbH & Co. KGaA. pp. 1-20
3. Thomson, W. (1851). On the mechanical theory of thermo-electric currents. *Proc. R. Soc. Edinburgh*, **3**: 91–98.
4. *Type of fuel, flame temperature*. Accessed on 6th August, 2017 at http://www.kristallikov.net/page52e.html.
5. https://en.wikipedia.org/wiki/Color_temperature, accessed on 6th August, 2017.
6. https://en.wikipedia.org/wiki/Flame, accessed on 6th August, 2017
7. https:// www.electrical4u.com/materials-used-for-rheostats, accessed on 6th August, 2017.

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PSYCHOLOGY

ADJUSTMENT AMONG URBAN & RURAL ADOLESCENTS: A PSYCHOLOGICAL STUDY

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Deepshikha Tonk**

ABSTRACT

The main objectives of the present study is to examine the adjustment level among urban and rural adolescents with three major dimensions such as emotional, social and educational adjustment. Adolescence typically describes the years between ages 13 and 19. It can be considered the transitional stage from childhood to adulthood. The physical and psychological changes that occur in adolescence can start earlier. Adolescence is one of the most rapid phases of human development. The characteristics of both the individual and the environment influence the changes taking place during adolescence. Adolescence is a time for developing independence. A sample of 80 adolescents (40 rural & 40 urban) was taken from the randomly selected secondary schools collected by using simple random sampling technique. The Adjustment Inventory for School Students (AISS) was employed created by K. P. Sinha and R. P. Singh (1971). Mean, Standard Deviation & t-Test was used for the statistical analysis of data. On the basis of findings of the present study, it can be concluded that urban adolescents have more emotional adjustment problems in their life. On scale of social adjustment, the present study shows that urban adolescents have more social adjustment problems in their social life. In view of educational adjustment of rural and urban adolescents, the adolescents belonging to rural locality have more educational adjustment problems.

Keywords: *Adolescents, adjustment, mental health, Urban area, Rural area*

INTRODUCTION

Adolescence typically describes the years between ages 13 and 19. It can be considered the transitional stage from childhood to adulthood. The physical and psychological changes that occur in adolescence can start earlier. Adolescence is one of the most rapid phases of human

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development. Biological maturity precedes psychosocial maturity. This has implications for policy and programme responses to the exploration and experimentation that takes place during adolescence. The characteristics of both the individual and the environment influence the changes taking place during adolescence. Younger adolescents may be particularly vulnerable when their capacities are still developing and they are beginning to move outside the confines of their families. Adolescence can be a time of both disorientation and discovery.

This transitional period can bring up issues of independence and self-identity; many adolescents and their peers face tough choices regarding schoolwork, sexuality, drugs, alcohol, and social life. Peer groups, romantic interests, and appearance tend to naturally increase in importance for some time during a teen's journey toward adulthood. Adjustment refers to the behavioural process of balancing conflicting needs, or needs challenged by obstacles in the environment. Adolescence is a time for developing independence. Typically, adolescents exercise their independence by questioning, and sometimes breaking rules.

Objectives of Study:

- To study the Adjustment among Urban Rural Adolescents in relation to Emotional Adjustment;
- To study the Adjustment among Urban Rural Adolescents in relation to Social Adjustment;
- To study the Adjustment among Urban Rural Adolescents in relation to Educational Adjustment.

REVIEW OF LITERATURE

Sayanika Deka (2017) conducted study to assess the adjustment problems among adolescents by using Adjustment Inventory constructed and standardized by A.K.P Sinha and R.P Singh. It was found that there exists no significant difference between adolescent girl students from urban and rural areas in relation to their educational adjustment problems but a significant difference was found between urban and rural adolescent girls in relation to the social and emotional adjustment problems. Emmanuel D (2013) remarked that an adolescent, in the enlightened period, is a product of refinement and culture in all dimensions. He also states that adolescence not only brings change in the body but also in the intellectual shape. Adolescents are not emotionally organized for their social tasks and roles in their social surroundings. Parulben Harish Desai (2017) conducted a study among school adolescents in relation to their adjustment problems and mental health. It was found a significant difference in mental health and adjustment between male and female students. He also found that there is significant difference between in mental health rural and urban students. Shaik Ali (2014) conducted a study on adolescents belonging to rural and urban area in relation to their adjustment problems. He found that there is a significant difference among adolescent in relation to their adjustment problems. Raju, M.V.R. & Khaja Rahamtulla, T. (2007) examined the adjustment problems of school students from urban and rural schools of Visakhapatnam district. The variables included for the study apart from adjustment (family, social, academic, financial and emotional) are age, gender, class, type of school etc. It was found that the influence of individual factors on adjustment varies. The major findings of the study have shown that

adjustment of school children is primarily dependent on the school variables. Farver, Jo Ann M., Narang, Sonia K., Bhadha, Bakhtawar R (2002**)** examined the influence of the family on adolescents' acculturation, ethnic identity achievement, and psychological functioning. The results showed that parents' and adolescents' ratings of their self-identification and ethnic identity were positively associated. Adolescents reported higher self-esteem, less anxiety, and less family conflict when there was no acculturation gap between them and their parents.

RESEARCH METHODOLOGY

Sampling: A sample of 80 adolescents was taken from the randomly selected secondary schools collected by using simple random sampling technique. 40 adolescents were from urban area and 40 from rural areas of Meerut District, Uttar Pradesh, India. Age of the adolescents ranged between15 to 18 years.

Table 1: Sample Distribution

Sr. No.	Locality	N	∑
1.	Rural	40	80
2.	Urban	40	

Null Hypothesises (H_0): The following Null Hypotheses were used in the present study:

- **$H_0$1:** There will not be significant difference among Urban and Rural Adolescents in relation to Emotional Adjustment.
- **$H_0$2:** There will not be significant difference among Urban and Rural Adolescents in relation to Social Adjustment.
- **$H_0$3:** There will not be significant difference among Urban and Rural Adolescents in relation to Educational Adjustment.

Tools:

In the study, the investigator employed The Adjustment Inventory for School Students (AISS) which was constructed and standardized by A.K. P. Sinha and R. P. Singh (1971). The inventory consists of 60 items out of which 20 items measure Emotional adjustment, 20 measure Social adjustment and 20 measure Educational adjustment. All the items are arranged randomly. Each item of the inventory has two answers: 'Yes' and 'No'. The subject is to encircle one response out of the two. There is no time limit for the inventory but in average 10 to 12 minutes are taken by examiner to give complete responses for all the 60 items.

Data Collection: The Data Collection was done using random sampling procedure. The general instructions were given to participants to complete the Adjustment Inventory. Filled questionnaires were collected from participants for statistical analysis of data. The Statistical Analysis was conducted. The Mean and t-test was calculated.

Statistical Technique: In the present study, Mean, Standard deviation & t-test was used for the statistical analysis of data.

STATISTICAL ANALYSIS & INTERPRETATION

Table 2: Mean, S.D. & T-Value (Emotional Adjustment: Rural × Urban Adolescents)

Type of Adjustment		N	Mean	S.D.	t-Values	Sign.
Emotional Adjustment	Rural	40	8.5	2.4	1.97	0.05
	Urban	40	7.67	3.63		

Data analysis in Table 2 indicates that the mean score on Emotional Adjustment dimension of Rural Adolescent is high in comparison with Urban Adolescent. Analysis also indicates that calculated t- value is 1.97 which is significant at 0.05 Level of Significance. Thus, there is significant difference in the Emotional Adjustment of Rural and Urban Adolescents. So, it can be said that Urban Adolescents have more Emotional Adjustment problems in comparison to Rural Adolescents.

Table 3: Mean, S.D. & T-Value (Social Adjustment: Rural × Urban Adolescents)

Type of Adjustment		N	Mean	S.D.	t-Values	Sign.
Emotional Adjustment	Rural	40	8.6	2.5	5.14	0.01
	Urban	40	6.8	2.5		

Data analysis in Table 3 indicates that the mean score on Social Adjustment dimension of Rural Adolescent is high in comparison with Urban Adolescent. Analysis also indicates that calculated t- value is 5.14 which is significant at both 0.05 and 0.01 Level of Significance. Thus, there is significant difference in the Social Adjustment of Rural and Urban Adolescents. So, it can be said that Urban Adolescents have more Social Adjustment problems in comparison with the Rural Adolescents.

Table 4: Mean, S.D. & T-Value (Educational Adjustment: Rural × Urban Adolescents)

Type of Adjustment		N	Mean	S.D.	t-Values	Sign.
Emotional Adjustment	Rural	40	5.79	1.24	1.5	N.S.
	Urban	40	6.18	1.10		

Data analysis in Table 4 indicates that the mean score on Educational Adjustment dimension of Urban Adolescent is high in camparison with Rural Adolescent. Analysis also indicates that calculated t- value is 1.5 which is not significant at both 0.05 and 0.01 Level of Significance. Thus, there is no significant difference in the Educational Adjustment of Rural and Urban Adolescents. So, it can be said that Rural Adolescents have more Educational Adjustment problems in comparison with the Urban Adolescents.

Therefore, the null hypothesis is rejected in relation to Emotional and Social Adjustment and is accepted in relation to Educational Adjustment.

CONCLUSION

On the basis of findings of the present study, it can be concluded that the Urban Adolescents have more Emotional Adjustment problems in their life. If we talk about the Social Adjustment, the present study shows that Urban Adolescents have more Social

Adjustment problems in their social life. In view of the Educational Adjustment of Rural and Urban Adolescents, the adolescents belonging to Rural locality have more Educational Adjustment problems.

REFERENCES

1. Ali, Shaik (2014). "A Study on Emotional and Adjustment Problems of Adolescents in Rural and Urban Areas", *PARIPEX Indian Journal of Research*, Vol.**3(**7):1-2. Available at https://www.worldwidejournals.com/paripex/recent_issues_pdf/2014/July/July_2014_1405423039__73.pdf
2. Deka, Sayanika (2017). Adjustment Problems among Adolescent Girl Students of Secondary Schools: A Study. *International Journal for Innovative Research in Multidisciplinary Field* ISSN – 2455-0620 Vol. **3(**8): 191-195. Available online at http://www.ijirmf.com/wp-content/uploads/2017/09/201708034.pdf
3. Desai, Parulben Harish (2017). "A comparative study of mental health among rural and urban adolescent students of higher secondary school", *Journal of Psychology & Psychotherapy*, Vol.**7(2):** 93. Available at https://www.omicsonline.org/conference-proceedings/2161-0487-C1-011-039.pdf
4. Emmanuel D (2013). "Adjustment among School going Adolescents: A Study in Kunnathur Village, Annur Block (Coimbatore District)", *International Journal of Humanities and Social Science Invention*, Vol.**2**(1): 7-12. Available online at http://www.ijhssi.org/papers/v2(1)/Version-3/B210712.pdf
5. Farver, Jo Ann M., Narang, Sonia K. and Bhadha, Bakhtawar R (2002). "East meets West: Ethnic identity, acculturation, and conflict in Asian Indian families", *Journal of Family Psychology*, Vol.**16(**3):338-350. Available at http://psycnet.apa.org/buy/2002-15689-008
6. Raju, M.V.R. & Khaja Rahamtulla, T. (2007). Adjustment Problems among School Students, *Journal of the Indian Academy of Applied Psychology*, Vol. **33(**1): 73-79. Available at http://medind.nic.in/jak/t07/i1/jakt07i1p73.pdf

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LAW

MEDIA LEGISLATIONS: A CRITICAL ANALYSIS

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Prof. J K Mittal**

ABSTRACT

With rapidly changing technologies, and increasing media dependability, the broadcast sector has become the latest concern for various policymakers. The government and public interest groups require relooking into the laws that govern the broadcast companies. An important link is the legal regulation for both existing and emerging technologies. This paper attempts to examine the existing legal framework that applies to various broadcast technologies that are currently in use in India.

Keywords: Cable Television (Regulation) Act ,electronic media, Information Technology Act, Prasar Bharti, Right to Freedom of Speech and Expression, Telegraph Act, TRAI Act, Vernacular Press Act.

INTRODUCTION

New generation can't imagine life without IT gadgets. The Seventh Schedule of the Constitution of India empowers the Central Government to make laws on the electronic media.[1] The Union List Item No. 31 says that the laws on posts and telegraphs, telephones, wireless, broadcasting and other like forms of communication are to be made by the Union.[2]

An active judiciary and responsible media are third and fourth pillar for democracy in any civilised nation. Both are indispensable for the smooth functioning of the system. The fundamental right to expression is to be rationally disseminated. It is due diligence and extreme caution while reporting that is required for preserving the sanctity in any system. Supreme Court has said that the electronic media in the form of telecasting is of three types. It may be terrestrial, cable television and satellite television. Further it may be divided into a private or public channel.[3] The Supreme Court went further to state that the government should take initiative to make laws to regulate the electronic media.[4]

The Telegraph Act and its subsequent amendments enable the telegraph to include most modern communication devices irrespective of their underlying technology[5]. Judicial decisions

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have also held that the term 'telegraph' includes the term telephone, television, and radio, wireless, mobile and video equipment.[6] The Act authorizes the Central Government to take temporary possession of a telegraph in cases involving public emergencies or public safety.[7] These include India's sovereignty and integrity, state security, friendly relations with foreign states, public order, and preventing the commission of an offence.[8] The Act also empowers the government to revoke a telegraph license for breach of any terms and conditions or for a default in making license fee payments. At present legislations for electronic media in India are Telegraph laws, The Cable Television(Regulation) Act, the TRAI Act and the Prasar Bharati Act etc. The Central Government has the exclusive privilege of establishing, maintaining, and working telegraphs legislations within India.[9]

HISTORY OF MEDIA LEGISLATION IN INDIA

The history of media legislation in India is as old as the media itself. It begins with the launching of various news journals by the European and Anglo-Indian journalists during the second half of the eighteenth century.The first newspaper was the Bengal Gazette which was started by Mr. Hicky in 1780. Later the arrest of the editor Hicky for criticizing the policies of the Governor General Warren Hastings became the starting point of the struggle for liberty of the press.

The first legislative step, however, was taken in 1799. To counter the spread of French invasion, the British Indian rulers wanted to suppress criticism in the press and brought the Censorship Law which was the beginning of the oppressive legislation against the print media. The press was made to disclose the names of the publisher and editors as a legal obligation.

Pre-Independence Legislations

To exercise better control over media a necessity to have legislations was felt. There were a number of legislations which were enacted before the independence to control the emerging media.After the first freedom struggle of 1857, the Vernacular Press Act came into being. The government came up with a new law to regulate publications in local languages. The new Act, regulating printing presses and newspapers, made it mandatory for the publishers to preserve copies of books. The Press and Books Registration Act of 1867 are still in force with some amendments in 1893 and 1940. The Government had enormous powers to warn the press and confiscate the machinery. The Newspapers (Incitement of Offences) Act, 1908 was passed making any newspaper found inciting the offences, crimes of murder or any act of violence, this Act can put an end to the existence of that newspaper. District Magistrate was empowered to confiscate the printing press where a newspaper containing an incitement to violence is printed. The police was also empowered to attach the printing press and issue warrants for attachment. The government was also authorized to cancel the declaration of the printer or publisher of the newspaper.

With two years of the Newspapers (Incitement of Offences) Act, the government decided to come up with a new legislation to regulate the press. This, according to Indians, was aimed at imposing further curbs on press to check seditious or unaffectionate writings.

Under the Act, all attempts, direct or indirect, to seduce persons as employed in the armed

forces or to intimidate the people to give money for revolutionary work or to prevent them from giving help in discovering and punishing revolutionary clime, were included in the definition of objectionable mailer. Not only commissions of such acts were objectionable but even attempt to commit them made one liable.[10]

The government later enacted the Indian Press (Emergency Powers) Act to curb the expression of thought by journalists most of whom led the nationalist movement. The press was liable to be forfeited if it was functioning without security deposit. Even publication of photographs of national movement leaders was considered to be having tendency to encourage the movement and thus provided enough excuse for the government to invoke the provisions of the Act.[11]

Post-Independence Growth

When India became independent, there were several suppressive legislations dealing with the press. There was a need to review those laws which were used against the press by the Britishers. The Government of India constituted a Press Law Enquiry Committee under the Chairmanship of Ganganath Jha. This Committee made a thorough study of existing laws relating to the press in India. It was due to its recommendation reformation of laws started.

Constitution and Media

Constitution does not guarantee exclusive freedom to media. The fundamental right to speech and expression is wide enough to ensure that even the State cannot curb the cherished freedom at will. The state can only impose reasonable restrictions to regulate the freedom. The judiciary, under its power of judicial review, has come to the rescue of media freedom whenever there is an attempt to curb fundamental right. Besides, the Preamble to the Constitution recognizes the liberty of thought, expression, belief, faith and worship.

The role of judiciary as a watchdog can be seen from the fact that the first amendment to the constitution in 1951 was necessitated by the judicial decisions in favor of free press. The Supreme Court stressed that freedom could be curbed only on the grounds mentioned in the Constitution; three additional grounds were added to the list. Thus at present reasonable restrictions can be imposed to ensure the security of state, friendly relations with foreign countries, public order, decency or morality, contempt of court, defamation and incitement to offences.[12]

Objectionable matter meant words, signs, or visible representations which were likely to incite or encourage any person to resort to violence or sabotage for the purpose of overthrowing or undermining the Government established by law in India or in any State thereof or its authority in any area; or incite or encourage any person to commit murder, sabotage or any offence involving violence; or incite or encourage any person to interfere with the supply and; distribution of food or other essential commodity or with essential services; or to seduce any member of any of the armed forces of the Union or of the police forces from his allegiance to his duty or prejudice the recruiting of persons to serve in any such force or prejudice the discipline of any such force; or promote the feelings of enmity or hatred between different communities in India; or which are grossly indecent or scurrilous or obscene or intended for

blackmail.[13] The legislation was enacted despite stiff opposition from the press and people from other fields. It, however, remained in force for just around four years and was allowed to lapse in 1954.

The government appointed the first Press Commission on September 23, 1952 comprising of 11 members. This Commission submitted its report in August 1954. One of the significant recommendations was establishment of the Press Council of India consisting of *25* members of whom 13 or more would be working journalists of standing in the profession including the working editors. Either former or sitting judge of a High Court could be appointed as the Chairman. The Council would safeguard the freedom of the press and help the press to maintain its independence, apart from making all efforts to promote professional standards.

Different means of the mass media play an important role in entertaining the people. Radio, cinema, television, video, etc., have powerful impact on people. The messages are received spontaneously by the people and scenes of movies, serials, etc., have long lasting impact. The studies conducted show that people prefer to watch spicy and juicy programmes. Even children like programmes of sex and violence. Naturally, it encourages criminality in society. This takes into account legislative approach in handling the views and regulating the means of entertainment. Cinema occupies the prominent place in life of every individual.

Legislations for Recreational Activities

Before analysing cine legislations, it is imperative to find out extensive legislative tackling of certain aspects relating to recreation, commercial recreation, entertainment, etc. The Acts studied touch radio, indecent representation of women and certain rules. It is necessary to know how far recreation is controlled by legislative activity.

Radio is one of the important means of commercial recreation and entertainment. It has many good things of public entertainment. In the era of television, satellite channels, videos and motion pictures, a question mark may be put on its importance, yet it commands respect in the field of public entertainment. On one hand, it offers cultural and aesthetic opportunity which gives a new lease of life to spoken property, verse plays and classical music, and on the other hand modern programmes such as western music, film songs and plays satisfy the hunger of commercial entertainment. Thus, there can be no disagreement over the fact that radio is a powerful educational and entertaining means. However, there are certain limitations on radio. It can be used for organised propaganda. Commercial broadcasting provides entertainment which sometimes becomes cheap. And, this brings connection between commercial recreation and criminality.

Safeguarding the citizens' rights to be informed on all matters of public interest national or international and presenting a fair and balanced flow of information including contracting views without advocating any opinion or ideology of its own.

Twelve years after, the Parliament enacted the Prasar Bharti (Broadcasting Corporation of India) Act, 1990. It provides for the establishment of Broadcasting Corporation and defines its composition, function, powers and connected matters. The Act thrusts the Corporation with organizing and conducting public broadcasting services to inform, educate and entertain the

public and to ensure balanced development of broadcasting of radio and television.

It may be noted that the broadcasting policy does not allow anything which is obscene or defamatory or incitement to violence or against maintenance of law and order, etc. The broadcasting ethics protect public interest.[14]Sec. 12(2) of the Act provides for the Broadcasting Corporation which *inter alia* provides for upholding unity and integrity of the country. The programmes should pay special attention to the fields of healthy entertainment, education, agriculture, science, health and family welfare. This Sec. 12(2) which mentions guidelines runs as under.[15]

The Prasar Bharti (Broadcasting Corporation of India) Act, was enacted by the Parliament in September, 1990. The Government introduced on 1st June, 1990 the Prasar Bharti Amendment Bill which was passed on 31st July the same year by Lok Sabha, however it could not be passed by Rajya Sabha. The amendments sought a series of remedies in the Act as magnified by media and recommended by several experts Committees. Clearly, the object is to transmit educative, healthy and entertaining programmes. The guidelines clearly establish the view that the programme is capable of creating corrupt influences.

The Information Technology Act, 2000 is enacted to provide legal recognition for transactions carried out by means of electronic data interchange and other means of electronic communication. Electronic communication has become one of the most effective means of recreation in the 21st century. Recreation by means of computer, internet, video needs to be within the leeway of decency, public interest and morals. According to Sec. 67 of the Act whoever publishes, transmits or causes to be published in electronic form any material which is:

i) Lascivious

ii) Appeals to the prurient interest

iii) Tends to deprave and corrupt persons, who are likely to read, see or hear the matter contained or shown in it shall be punished.

The violator shall be punished with imprisonment of either description for a term which may extend to five years and fine upto one lakh rupees on first conviction. For second or subsequent conviction, the person shall be liable for a term which may extend to ten years and also fine which may extent to two lakh rupees.[16]

Section 67 is analogous to Section 292 of the Indian Penal Code. The Supreme Court while delineating the scope of Sec. 292 in **Ranjit D. Udeshi v. State of Maharashtra**[17] held that unlike provisions which have words like 'knowingly' or 'negligently' and thus make *mens rea* a condition precedent to establish the guilt, Sec. 292 did not make knowledge of obscenity an ingredient of the offence.

Applying the ratio of Ranjit D. Udeshi to Sec. 67 of the Information Technology Act, it can be concluded that mere publication or transmission of obscene material is an offence notwithstanding the mental state of the offender. However, this cannot be a blanket rule applicable to all and sundry.[18] For instance, the liability of standard or services provider is to be determined under Sec. 79[19] of the Information Technology Act and not under Sec. 67.

The legislative approach in providing healthy and standard entertainment to the masses is controlled by the cine legislations. The cable television is capable of bringing the cultural diversities from all parts of the world to home. Therefore, it becomes very essential to keep a direct check on these channels by having a intensive legislative policy on the matter.

Television is a very powerful and effective means of communication. On September 15, 1959, the Delhi Television Centre went to air.[20] With further advancements in technology television saw the rise of multi-channel system. Cable television has the advantage of improved reception from local transmitters and it also offers the possibility of relaying services from native and foreign transmitters. This may be perceived as a socio-cultural invasion in many quarters. In the beginning there was no law to regulate cable television networks.

Where the Central government thinks it necessary or expedient so to do in the interest of the -

i) Sovereignty or integrity of India; or

ii) Security of India; or

iii) Friendly relations of India with any foreign State; or

iv) Public order decency or morality.

It may by order regulate or prohibit the transmission or re-transmission of any channel or programme.[21]The Act does not derogate the other laws in operation. Sec. 21 of the Act provides that application of other laws is not barred.[22] The Central Government from time to time as it deems fit may make rules by notification in the official gazette.[23]

A new form of problem, which hitherto had not assumed gigantic proportions, is indecent representation of women or of her parts. With a view to curbing this evil, the Parliament passed the Indecent Representation of Women (Prohibition) Act, 1986. The Act provides to prohibit indecent representation of women through advertisements or in publications writings, paintings, and figures or in any other manner. Although Sections 292, 293 and 294 of the Indian Penal Code deal with the obscenity but in recent years, there has been excessive indecent representation of women in advertisement, publication, etc. The invasion of satellite channels, private video tapes, etc., has made the problem more acute. All this offends the dignity of women and have denigrating or derogatory effects on them.[24] Moreover, offences against women have increased by leap and bound. Therefore, it has been necessary to have a separate legislation which prohibits the indecent representation of women through advertisement, books, pamphlets, etc. The Indecent Representation of women (Prohibition) Act, 1986 attempts to solve the problem.

In **Municipal Corporation, Delhi v. BhagwanDass**[25] it has been held that connivance with or due criminal negligence results in the commission of offence. Sec. 8 of criminal procedure code provides that offences punishable under this act are bailable and cognizable.[26] It is a matter of common knowledge that women are increasingly being represented in indecent manner, which is matter of concern. These indecent representations deprave mind of any person and produce lascivious tendencies in him. There is no need to over exaggerate the importance of such law particularly in view of the rising rate of crimes against women. The

picture attached indicates the limits of the violation of the Act if not the volume of violations.

The Act came in force on 2nd October, 1987. Section 10 of the Act empowers Central Government to make rules and in the exercise of the powers conferred by Sec. 10 of the Indecent Representation of Women (Prohibition) Act, the Central Government has made the rules which are known as the Indecent Representation of Women (Prohibition) Rules, 1987. The rules deals with manner of seizing articles, manner of seizing and selling of advertisement or articles in certain cases etc. Clearly, the Act and the rules are intended to control deviancy against women. The advertisements, publications, etc. relative of indecent representation of women have the effect of depraving or corrupting people.

Cinema is one of the finest means of entertainment. The necessity to filter out objectionable exhibitions of cinema was seriously felt in the society. An analysis of general dimensions of motion pictures and means of recreation reveal that they possess merits and demerits. The modern society, which is full of tensions, stress and strains, motion picture provide recreation. In order to ensure prevention of deconstructive effects, some sort of official check and regulation is required. The first major legislation was The Cinematograph Act, 1918. Prior to that, the situation was handled by legal provisions existing on the statute here and there.[27]

The increasing mass appeal made it necessary to examine the adequacy of existing legal provisions. In 1952 the cinematograph act was again passed by independent India. The objective was a new legislation for the growing scope of entertainment industry. Initially there were few provisions effecting such cinematic exhibitions. These provisions were intended to protect people from unhealthy recreation. It enacted the licensing authority and made it responsible for guarding the provisions of the Act. It also empowered to punish for offences against the Act.

In **Bharat Bhushan v. P. C. Saxena**,[28] Justice Chaturvedi cleared the position with regard to effect of repeal in the following word: The scheme of the Act of 1952 shows that as far as this particular subject is concerned, namely, the subject of the grant of the licenses to exhibit cinema shows, the provisions of the old Act 2 of 1918 are still in force in Part-A and Part-B States. The other provisions concerning the censorship of the films have been altered by this latter Act and this alteration applies to the whole of India.

The Central Board of Film Censors (since June 1, 1983 renamed the 'Central Board of Film Certification) was set up by the Central Government under the powers granted by the Cinematograph Act, 1952 (hereinafter called the Act of 1952) and the Cinematograph (Censorship) Rules, 1958.[29] There are offices at Bombay, Madras, Calcutta and Trivandrum with Bombay as the headquarters.

Sec. 4 of The Cinematographic Act of 1952 prescribes the manner in which the film is to be examined by the Board.[30] The person desiring to exhibit a film shall make an application in the prescribed manner to the Board for a Certificate. The Board shall after examining the film.

i) Sanction the film for unrestricted public exhibition. However, if the Board is of the opinion that the question as to whether a child below the age of 12 years should be allowed to see the film it should be considered by the parents or guardians of such child the Board may

sanction the film for unrestricted public exhibition with an endorsement to that effect.

ii) Sanction the film for public exhibition restricted to adults.

iii) Sanction the film for public exhibition to members of any profession or any class of persons.

iv) Direct the applicant to make modifications in the film as it thinks necessary.

v) Refuse to sanction the film for public exhibition.

After the film has been examined in the prescribed manner Sec. 5-A of the Act empowers the Board to certify the film accordingly.[31] When a film is suitable for unrestricted public exhibition or for the unrestricted public exhibition with an endorsement, the Board shall grant to the person applying for the certificate (a) 'U' certificate or 'UA' certificate as the case may be. (b) When the film is not suitable for unrestricted public exhibition, but is suitable for public exhibition restricted to adults or members of any profession or class of persons the person applying for the certificate shall be given 'A' certificate or 'S' certificate as the case may be by the Board.The certificate granted to the applying person by the Board under this Act is valid throughout India for a period of 10 years.

The Supreme Court in **Raj Kapoor v. Laxman**,[32] stated that Censor Board was not the moral tailor setting its own fashions but a statutory gendarme policing films under Art.19(2) from the angle of public order, decency or morality.

The censorship has no specific boundaries. Mahesh Bhatt's, '*Sadak*' followed by Shashi Ranjan's '*Siasat*', Ketan Mehta's *'O Darling ! Yeh Hai India'* again followed by Shekhar Kapoor's *'Bandit Queen*' and Mani Ratam's '*Bombay*'. Today we have films like Mahesh Bhatt's '*Murder*' and many more in a row showing volumes of obscenity, violence, intimate scenes. These films come in public with the 'A' certificate, where the 'A' certificate licenses them to show any amount of violence, obscene, nudity, etc. In 2002, Vijay Anand quit his post as a Chairman of Censor Board after his failing in a bid to update the Cinematograph Rules. Anand wanted to create a new rating 'XA' for 'soft pornographic films.'[33]

There is no provision directly dealing with commercial recreation or entertainment or the evils of entertainment. Whenever the person feels aggrieved by the Censor Board or any agency of the government, he may evoke fundamental rights. For e.g. Article 14, Article 19(1)(a). Right to equality is provided in Art. 14 which states that: 'The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India.'[34]

This Article was evoked in the famous case **K. A. Abbas v. Union of India**,[35] where the validity of cinematograph Act, 1952 was challenged on the ground that it makes unreasonable classification. Under the Act, cinema films are classified into two categories, viz. 'U' films and 'A' films according to their suitability for adults or young people. 'U' films are meant for unrestricted exhibition while 'A' films can only be exhibited to adults. It was argued that motion pictures are a form of expression and therefore, entitled to equal treatment with other forms of expression. The court held that the treatment of motion pictures must be different from that of other forms of art and expression. Therefore, the classification of films into two

categories of 'U' films and 'A' films is a reasonable classification.

Article 19(1)(a) says that all citizens have the right to freedom of speech and expression.[36] But subject to limitations imposed under Article 19(2) which empowers the State to put reasonable restrictions on the following grounds e.g. security of State, friendly relation with foreign states, public order, decency and morality, contempt of court, defamation, incitement to offence and integrity and sovereignty of India.[37]

In **Odyssey Communications Pvt. Ltd. v. Lokvidayan Sanghatana**,[38] telecasting of a serial '*Honi Anhoni'* was challenged on ground of spreading blind beliefs and superstition amongst the members of public. They however, failed to show that exhibition of the serial was *prima facie* prejudicial to the community. It was held that it was not likely to endanger public morality.[39]

The Indian Penal Code relating to obscenity in the country is codified in Sections 292, 293 and 294 of the Indian Penal Code. Sec. 292 provides that any paper, book, pamphlet, writing, drawing, representation, figure, interest is being sold, hired, distributed, exhibited publically for circulation, exported, imported, advertised then the person who is found doing so shall be punished. The punishment includes imprisonment for a term of two years and fine which may extend to two thousand rupees. In case of continuing offence the imprisonment can extend up to five years and fine increasing to five thousand rupees.[40]

CONCLUSION

With the 'transnational media' and progress in satellite delivery the local television has now become home to global information system. This is the age of integrated media. Today media has exploded all boarders, now no one can remain confined to the boundaries of traditional media. The scope has multiplied with internet. Free voyage of communication across international borders is dangerous. As a consequence, the laws governing them are also numerous and sometimes insufficient. It becomes difficult for any individual to become aware of various important legislations affecting the branches of Media Communication. It is important to make citizens aware of their rights and duties within the framework of law existing in India and in the end furthering the cause of "Freedom of Speech and Expression" and "Dissemination of Knowledge".

ENDNOTES

1. The seventh Schedule of the Constitution of India empowers the Central Government to make laws on the electronic media.
2. *Ibid.*
3. MIB and Others Vs. Cricket Association of Bengal and Others AIR 1995 SC 1235.
4. *Ibid.*
5. The Indian Telegraph Act of 1885. "any appliance, instrument, material, or apparatus used or capable of use for transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, visual, or other electro-magnetic emissions, radio waves or Hertzian waves, galvanic, or magnetic waves."

6. Section 3(1AA). However the physical possession of radio and wireless equipment is regulated by the Indian Wireless Telegraphy Act, 1933.
7. Section 5(1).
8. Section 5(2).
9. Section 4(1) of The Indian Telegraph Act 1885.
10. The Indian Press Act, Section IV.
11. Muhamnad Ali *Versus* Emperor.
12. Article 19(2) Constitution of India.
13. The Press (Objectionable Matters)Act. Section 3.
14. Id. at 149.
15. Sec. 12(2). The Prasar Bharti (Broadcasting Corporation of India) Act, 1990.
16. Sec. 67, The Information Technology Act, 2000 reads as under : "whosoever publishes or transmits or causes to be published in the electronic form,any material which is lascivious or appeals to the prurient interest or if its effect is such as to tend to deprave and corrupt persons who are likely, having regard to all relevant circumstances to read, see or hear the matter contained or embodied in it, shall be punished on first conviction with imprisonment of either description for a term which may extend to five years and fine which may extend to one lakh rupees and in the event of a second or subsequent conviction with imprisonment of either description for a term which may extend to ten years and also with fine which may extend to two lakh rupees."
17. AIR 1965 SC 881
18. Dr. Farooq Ahmad, *Cyber Law in India*, 342
19. Sec. 79, Information Technology Act reads as under: "For the removal of doubts it is hereby declared that no person providing any service as a network service provider shall be liable under this Act, rules or regulations made thereunder for any third party information or data made available by him if he proves that the offence or contravention was committed without his knowledge or that he had exercised all due diligence to prevent the commission of such offence or Contravention."
20. Supra note 18, 174.
21. The Information Technology Act, Sec. 21.
22. The other laws mentioned in the Section are "Drugs and Cosmetics Act, 1940; The Pharmacy Act, 1948; The Emblems and Name (Prevention of Improper Use) Act, 1950; The Drugs (Control) Act, 1950; The Cinematograph Act, 1952; The Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954; The Prevention of Food Adulteration Act, 1954; The prize Competition Act, 1955; The Copyright Act, 1957; The Trade and Merchandise Marks Act, 1958; The Indecent Representation of Women (Prohibition) Act, 1986; and The Consumer Protection Act, 1986."

23. Id. Sec. 22.
24. See, Statement of Objects and Reasons, The Indecent Representation of Women (Prohibition) Act, 1986.
25. 1972 CrLJ 1433.
26. According to Sec. 2(a) of Criminal Procedure Code, 1973, 'bailable offence' means an offence which is shown as bailable in the First Schedule or which is made bailable by any other law for the time being in force. Whereas, according to Sec. 2(c) of Criminal Procedure Code, 1973, 'cognizable offence' means an offence for which and 'cognizable case' means a case in which a police officer may in accordance with the First Schedule or under any other law for the time being in force, arrest without warrant, see, Sec. 2(a) and (c) of the Criminal Procedure Code, 1973.
27. For example, see Sec. 292, Indian Penal Code, 1860.
28. AIR 1955 All 83.
29. The Cinematograph (Censorship) Rules, 1958.
30. The Cinematographic Act 1952, Sec. 4.
31. Id. Sec. 5-A.
32. AIR (1980) SC 605.
33. http:/statesman.com/id/2120162#continue article.
34. Article 14, The Constitution of India, 1950.
35. AIR 1971 SC 481.
36. See, Art. 19(1), The Constitution of India, 1950.
37. Id. Art. 19(2).
38. (1988) 3 SCC 410.
39. See, V. N. Shukla, *Constitution of India*, 105 (2001, 10th ed.).
40. Sec. 292, Indian Penal Code, 1860.

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