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**A MANAGEMENT RESEARCH PRACTICE OF CONCEPTUAL FRAMEWORK OR MIND
MAPPING CONCEPT NARRATED FROM PERIYAPURANAM**

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ABSTRACT

Periyapuramam is the best spiritual literature in Tamil. This research work intended to expose the Management Research Practice of Conceptual Framework or Mind Mapping Concept in Pusalar Nayanar and Vayilar Nayanar puranams from this book. For this study Pusalar and Vayilar devotional history has been selected for the conceptual study.

INTRODUCTION OF PERIYAPURANAM

The Periyapuramam is considered as the fifth Veda in Tamil and takes its place as the 12th Thirumurai; it is the last book in the Saiva canon. It is considered as one of the masterpieces of the Tamil literature and a commemoration of the Golden age of the Chozha's. The author of Periya Puranam; Sekkilar peruman who was also the King's minister, had written this grand epic ask for of King 2nd Kulothunga Chozhan.

OBJECTIVES OF THE STUDY

The main objective of the study is to identify the periyapuramam related to Management Research Practice of Conceptual Framework or Mind Mapping Concept.

RESEARCH METHODOLOGY

Content Analysis: It is a research tool or technique that helps to analyze the actual content and its features of any kind, whether it is a word, picture, themes, text, and try to present the content in objective and quantitative manner.

A qualitative Content Analysis study does not have variables. Content analysis is a research tool focused on the actual content and internal features of media. It is used to determine the presence of certain words, concepts, themes, phrases, characters, or sentences within texts or sets of texts and to quantify this presence in an objective manner.

For this Article the Sample size is two saints from the Periyapuramam. Study conducted as a qualitative Content Analysis study by the experience and knowledge of researcher. Sources of data are from secondary sources and the article made by the format of MLA writing style.

REVIEW OF LITERATURE

A written or visual presentation that: "explains either graphically, or in narrative form, the main things to be studied the key factors, concepts or variables and the presumed relationship among them" Miles and Huberman, (1994)

Conceptual framework provides the structure or content for the whole study based on literature and personal experience and develops as participants views and issues are gathered and analysed.

However, Miles and Huberman note that Researchers generally have some idea of what will feature in the study, a tentative rudimentary conceptual framework, and it is better to have some idea of what you are looking for or at even, if that idea changes over time. This is particularly true for inexperienced and/or time constrained researchers.

Qualitative research can also be confirmatory. Yin (1994), for example, identified pattern matching and explanation building. Pattern matching starts with existing theory and tests its adequacy in terms of explaining the findings. Explanation building starts with theory and then builds an explanation while collecting and analysing data.

CONCEPTUAL FRAMEWORK

Dreaming: A Conceptual Framework for Philosophy of Mind and Empirical Research 2016, are dreams conscious experiences occurring during sleep? What exactly would it mean to say that they are? How does the concept of dreaming fit into the framework of concepts commonly used to describe conscious wake states? And how can the analysis of dreaming inform a philosophical theory of subjective experience and self-consciousness? The book proposes a conceptual framework for describing conscious experience in dreams and sketches preliminary answers to these and many more questions along the way. In doing so, it draws from

different sources, of which the most important are the discussion of dreaming in the history of Western philosophy; contemporary philosophical work on dreaming; scientific research on sleep and dreaming; and scientific research on related areas such as mind wandering, bodily experience, full-body illusions, delusions, and self-consciousness. Its primary aim is to (re)locate the concept of dreaming on the map of concepts commonly used to describe standard and altered wake states and to shed light on the relationship between dreaming and waking perception, but also between dreaming and imagining, mind wandering, and delusions. A secondary aim is to provide an introduction to the philosophical discussion on dreaming and scientific dream research. The book gives a comprehensive overview of the philosophical discussion on dreaming in different historical periods, theoretical contexts and philosophical sub disciplines. It also investigates how the philosophical discussion of dreaming and scientific dream research has mutually influenced each other since the discovery of REM sleep.

DREAM SKEPTICISM, SKEPTICISM ABOUT DREAMING, AND THE PROBLEM OF DREAM EXPERIENCE (PP. 1-42)

The problem of dream experience, understood as a problem for philosophy of mind, is the problem of how to conceptualize conscious experience in the dream state. It is, in other words, the problem of how to situate the concept of dreaming in the logical geography of concepts predominately used to describe standard, altered, and pathological wake states, such as “experience,” “perception,” “imagination,” “belief,” “delusion,” and “self-consciousness.” As discussed in the general introduction, the problem of dream experience, or the conceptualization problem, it is not a single problem but a whole bundle of related problems.

A SHORT INTRODUCTION TO EMPIRICAL DREAM RESEARCH: HISTORY, METHODOLOGY, AND CHANGING THEORETICAL CONCEPTIONS (PP. 43-72)

What is the status of the experiential and transparency assumptions in empirical dream research? If it is true that they have the status of default assumptions and that the problem of dream experience is, in a sense, a pest problem, as suggested at the end of chapter 1, then this should be reflected not only in the methods employed in contemporary dream research but also in changing theoretical conceptions of sleep and dreaming throughout the history of dream research. This chapter has three main aims to providing a brief overview of the major advances of empirical dream research

THE METHODOLOGICAL BACKGROUND ASSUMPTIONS OF SCIENTIFIC DREAM RESEARCH (PP. 73-138)

This chapter has the double aims of functioning as an extended plausibility check of the arguments developed in chapter 1 and of providing an overview of the main methodological approaches to the study of dreaming from scientific dream research. How do the researchers construct the relationship between dreaming, dream reporting, and other types of evidence about dreaming? On which background or assumptions, do the existing methods for the study of dreaming rely? In particular, does my claim that the experiential character of dreams and the transparency of dream reports have the status of methodologically necessary default assumptions retain its plausibility in the face?

ANTISKEPTICISM ABOUT DREAMING AND DREAM REPORTING: FROM DEFAULT ASSUMPTION TO THEORETICAL JUSTIFICATION (PP. 139-198)

The preceding chapters have established the central role of the experiential, transparency, and report ability assumptions as methodologically necessary default assumptions for scientific dream research. This means, first, that if these assumptions turned out to be false, then dream research understood as the scientific investigation of conscious experience during sleep would not exist: it would be deprived of either its target or the primary type of evidence used for its investigation. Second, it has become clear that the truth of these assumptions cannot itself be the object of scientific investigation: attempts to corroborate or verify the trustworthiness of dream reports.

DREAMING AS QUASI-PERCEPTUAL EXPERIENCE: THE TRADITIONAL VIEW (PP. 199-250)

The conceptualization problem or the question of how to conceptualize conscious experience in the dream state, dates back to antiquity and continues to be a matter of philosophical controversy. Unlike the philosophical debate on dreaming initiated by Malcolm (1956, 1959/1962), the question here is not whether dreams are experiences at all but rather, metaphorically speaking, where to locate dreaming on the map of concepts commonly used to refer to waking experience. The question of whether dreaming should be described as quasi-perceptual or imaginative experience, which I explore over the next two chapters, is a particularly good place to start.

DREAMING AS IMAGINATIVE EXPERIENCE: THE RIVAL VIEW (PP. 251-294)

The traditional view in philosophy is that dreaming, in some form or another, involves the appearance of a world: phenomenological, dreaming falls on the side of perception, illusion, and hallucination rather than on the side of imagination. Yet, we have seen that this view, perhaps, precisely because it has long been the traditional view is often poorly articulated, metaphorical, and has not, so far, been translated into clear-cut empirical questions. For an empirically informed conceptual framework of dreaming, saying that dreams are quasi-perceptual experiences is as all-encompassing as it is unsatisfying: the label of quasi-perceptual experience may well be too

ARE DREAMS SUBJECTIVE EXPERIENCES? PHENOMENAL SELFHOOD AND BODILY EXPERIENCES IN DREAMS (PP. 295-348)

Are dreams subjective experiences? What does it mean to say that dreaming typically involves the experience of being or having a self? How exactly can phenomenal self hood, or the phenomenology of self-experience, in the dream state be described conceptually? And what is the relationship between the dream self and the experienced dream world? We have seen that the debate about the quasi-perceptual versus the imaginative character of dreaming does not provide the resources for answering these questions. What we need instead is a conceptual framework describing the phenomenology of self-experience in dreams and its relation to the experienced dream world.

ARE DREAMS SUBJECTIVE EXPERIENCES (II)? THE PHENOMENOLOGY OF THINKING AND THE PROBLEM OF DREAM BELIEF (PP. 399-458)

So far, my investigation of the subjective character of dreaming has focused on the relationship of phenomenal selfhood and bodily experiences in dreams, as well as on their grounding in the sleeping, physical body. A second and in some ways more classical way of understanding questions about the subjective character of dreaming is to say that they concern the extent to which the dream self is a thinking self and a bearer of beliefs. The problem of dream deception naturally follows suit. As in the foregoing chapters, I start out by sketching the landscape of philosophical positions by reconstructing maximally.

RELOCATING DREAMS ON THE CONCEPTUAL MAP: CONSEQUENCES AND PERSPECTIVES FOR FUTURE RESEARCH (PP. 567-618)

Throughout the book, I have been concerned with developing a conceptual framework for describing conscious experience in the dream state in its own terms. I have repeatedly emphasized the importance of avoiding premature comparisons between dreaming and wakefulness, which often, in the history of philosophical theorizing about dreaming, have led to oversimplified characterizations of dreaming tinged by similarly oversimplified characterizations of wakefulness. Now that a new conceptual model of dreams as immersive spatiotemporal hallucinations is in place, we can take the next step toward solving the conceptualization problem, or the problem of where to locate the concept of dreaming on

PUSALAR NAYANAR PURANAM

Pusalar excelled in the mental worship of the Lord. Mental worship is thousands times better than external ritualistic worship: mental worship soon leads to Samadhi (super conscious state) and Self realization. He strongly desired to build a temple for Lord Siva, but he did not have the money for it. So, mentally he gathered the necessary materials for the purpose. He laid the foundation stone on an auspicious day. He raised the temple and had even fixed an auspicious day for the installation of the deity in it. The Kadava king who was also a great devotee of Lord Siva had built a magnificent temple in Conjeevaram. By chance he had also fixed the date which Pusalar had mentally chosen, for the installation of the Lord in his temple. The Lord wanted to show the king the superiority of Pusalar's great devotion. So, the Lord appeared in the king's dream and asked him to postpone the installation ceremony in his temple, as He would be going to the temple constructed by His devotee at Thiru Ninravur. The king woke up from sleep and was intensely eager to have the Darshan of the devotee mentioned by the Lord and also have a look at the great temple he had built, which he thought would be far superior to his temple. The king came to Thiruninravur and searched all over the place for the temple: he could not find any. Then, the king enquired about Pusalar. He found out Pusalar's house and approached him. Pusalar was stunned when he heard of the king's dream. Soon, he recovered and was filled with joy. He thought: 'How kind and merciful is the Lord. I am only a wretched creature and He has accepted my mental shrine as His Abode. I am really blessed.' He told the king that that temple was only in his mind. The king was greatly surprised to hear this. Admiring Pularar's devotion, the king fell at his feet and worshipped him. Pularar installed the Lord in his mental temple and continued to worship Him till he attained His Abode.

VAYILAR NAYANAR PURANAM

He was a Siva Bhakta. He constructed temples mentally and did Manasic (mental) worship. He built the temple of non-forgetfulness, lit the shining lamp of Self-illumination, bathed the Lord in the waters of immortal Ananda (bliss) and worshipped Him with the elixir of supreme love. Thus, he obtained salvation. Here is the life of a Para Bhakta, a supreme devotee. He had transcended the stage of idol worship. He had attained great purity of heart and clarity of inner psychic vision so that, without the aid of a symbol and without the help of rituals, he could raise his mind to the sublime heights of the Abstract. The inclusion of this wonderfully simple life of Vayilar Nayanar is to point out that devotion is of many types, to suit the taste and temperament of different individuals. Whatever be the path, ultimately they reach the same goal, union with the Lord, Siva. The Hindu sages have always declared that the spiritual path is not a stereotyped one, the same drug for all diseases, the same food for all people at all ages (from infancy to old age!), but that the spiritual life is adapted (within broad limits) to the needs of each individual. Everyone pursues the path or the combination of paths suited to him, and ultimately reaches the same goal.

DISCUSSION***Pusalar nayanar***

Ki.Va.Jagannathan, A.S.Gnasambantham, Thiru Muruga Kirupanatha Vaariyar, Durga Doss say about Pusalar Nayanar in periyapuranam. From this reference the researcher narrates the management point of view with the descriptions of these Tamil famous writers Ki.Va.Ja, A.S.Gna, Vaariyar and Durga Doss's words. These author's definitions collectively evaluate their reviews of this saints with they mentioned lyrics of periyapuranam.

*He planned it and built it over many many days;
So you have the consecration-ceremony done
On any day after tomorrow." This said,
The Lord who wears in His matted hair konrai flowers
Departed from his to move into the devotee's temple.*

This lines express the greatest quality of pusalar nayanar mind temple god says pusalar's great work of mind temple. The Lord who wears in His matted hair konrai flowers departed from his to move into the devotee's temple. His mind temple lead the main focuses of the story.

*The servitor consecrated Lord Hara's idol
In his mind's temple at the ordained auspicious hour;
Thereafter he performed all the poojas gloriously
And willingly for the Lord for many many days,
And thus flourished; then he reached the golden feet
Of the Lord-Dancer of Ponnambalam. 4187*

These lines express the power of pusalar's mind temple the servitor consecrated Lord Hara's idol In his mind's temple at the ordained auspicious hour Thereafter he performed all the poojas gloriously and willingly for the Lord for many days and thus flourished. His mind was very strong because of his worship take him as a good position in the field of spirituality.

Vayilar Nayanar

Ki.Va.Jagannathan, A.S.Gnasambantham, Thiru Muruga Kirupanatha Vaariyar, Durga Doss say about Vayilar Nayanar in periyapuranam. From this reference the researcher narrates the management point of view with the descriptions of these Tamil famous writers Ki.Va.Ja, A.S.Gna, Vaariyar and Durga Doss's words. These author's definitions collectively evaluate their reviews of this saints with they mentioned lyrics of periyapuranam.

*Rearing within a mental shrine of unforgetfulness,
He lit the lustrous lamp of godly consciousness;
Immortal bliss constituted his ablutions to the Lord;
He offered unto the Lord of Dharma, the nectarean food
Of his love; thus, even thus, he did his pooja. (4086)*

These lines express the power of Vayilar's mind temple the mind temples greatness mental shrine of unforced fullness, He lit the lustrous lamp of godly consciousness Immortal bliss constituted his ablutions to the Lord He offered unto the Lord of Dharma, the nectarine food Of his love; thus, even thus, he did his pooja. His mind temple lead the main focuses of the story.

From this study, a written or visual presentation "explains either graphically, or in narrative form, the main things to be studied the key factors, concepts or variables and the presumed relationship among them" Conceptual framework provides the structure or content for the whole study based on literature and personal experience and develops as participants views and issues are gathered and analysed. So every Researcher generally have some idea of what will feature in the study, a tentative rudimentary conceptual framework, and it is better to have some idea of what you are looking for or at even if that idea changes over time. This is particularly true for inexperienced and/or time constrained researchers.

Dreaming: A Conceptual Framework for Philosophy of Mind and Empirical Research 2016 explains important Qualitative and features of the dreams and dreams conscious experiences. From these stories of Pusalar nayanar and Vayilar nayanar puranams describe many thinks about dream mind and thinking conceptual framework similarly.

From the story of Pusalar's, mental worship is found thousands times better than external ritualistic worship: mental worship soon leads to Samadhi and Self realization. He strongly desired to build a temple for Lord Siva, but he did not have the money for it. So, mentally he gathered the necessary materials for the purpose. He laid the foundation stone on an auspicious day. He raised the temple and had even fixed an auspicious day for the installation of the deity in it. He told the king that that temple was only in his mind. The king was greatly surprised to hear this. Admiring Pusalar's devotion, the king fell at his feet and worshipped him. Pusalar installed the Lord in his mental temple and continued to worship Him till he attained His Abode.

And, Vayilar Nayanar also constructed temples mentally and did Manasic worship. He built the temple of non forgetfulness, lit the shining lamp of Self-illumination, bathed the Lord in the waters of immortal Ananda and worshipped Him with the elixir of supreme love. Thus he obtained salvation. Here is the life of a Para Bhakta, a supreme devotee.

From these two stories of Pusalar and Vayilar Nayanars mind is considered very strong and building an ideological spiritual temple in minds make the minds is very strong. Their dreams, thinks, mind strong is very important to every researcher. In modern research point of view conceptual frame work or mind mapping is more important in every research our forefathers teach how to frame a good conceptual idea and how to make a mind mapping via in his spiritual life.

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AN IMPROVING CONTROL STRATEGY FOR DC GRID - BASED ON WIND POWER GENERATION SYSTEM IN A MICRO GRID

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ABSTRACT

This paper presents the design of a dc grid-based wind power generation systems. It allows the flexible operation of multiple parallel systems and connected wind generators through eliminating the need for voltage and frequency synchronization. An alternative solution for ac micro grids is that proposed with a distribution network where the ac outputs of the wind generators (WGs) and it is rectified to a common voltage at the dc bus. The dc micro grids provide the flexibility to enable the voltage at the dc grid to be controlled for parallel operation of several WGs without the need to synchronize the voltage, frequency and phase, thus allowing the WGs to be turned ON or OFF anytime without causing any disruptions. To increase the controller's robustness against variations in the operating conditions a fuzzy based controller is introduced the fluctuations of the micro grid are controller with the constant regulated power a separate controller is introduced to the wind turbine to maintain the fixed power to mitigate the varitional errors. The proposed scheme is validated with test setup designed in mat lab Simulink which illustrates the operational capability of the proposed micro grid when it operates connected to and islanded from the distribution grid, and the results obtained are discussed.

I. INTRODUCTION

In general, now a day's renewable energy sources are most popular and vast increasing trend for production of power. Production of power from wind energy is one of the concept and vital role in our state. Wind power using wind turbines (WTs) to reduce the demand on the grid. Usually in wind farms the wind speed is variable one. The variability of wind speed in wind farms directly depends on the environmental and weather conditions. Thus, the generation of power due to wind speed variation and related issues that affect the reliability of electricity supply and power balance in systemgrid.

In recent years, the research attention on dc grids has been resurging due to technological advancements in power electronics and energy storage devices, and increase in the variety of dc loads and the penetration of dc distributed energy resources (DERs) such as solar photovoltaics and fuel cells. Many research works on dc micro grids have been conducted to facilitate the integration of various DERs and energy storage systems. In previous work, a dc micro grid based wind farm architecture in which each wind energy conversion unit consisting of a matrix converter, a high frequency transformer and a single-phase ac/dc converter is proposed. However, the proposed architecture increases the system complexity as three stages of conversion are required. A dc micro grid based wind farm architecture in which the WTs are clustered into groups of four with each group connected to a converter is used. However, with the existing architecture, the failure of one converter will result in all four WTs of the same group to be out of service. The research works are focused on the development of different distributed control strategies to coordinate the operation of various DERs and energy storage systems in dc micro grids. These research works aim to overcome the challenge of achieving a decentralized control operation using only local variables. However, the DERs in dc micro grids are strongly coupled to each other and there must be a minimum level of co-ordination between the DERs and the controllers.

II. TITLE WORKS

In the past decade, there has been a significant increase in the research, development, and use of distributed-generation systems [1]. The prospect of generating power from clean energy sources and local power generation near consumers has fundamentally changed the way of thinking with regard to the conventional centralized, large generation- based power systems. Power systems composed of small-scale distributed energy resources, such as wind turbines, fuel cells, photovoltaic, storage devices, etc. can be stand alone and grid connected. Many of these generation sources directly produce either dc or variable frequency/voltage ac outputs and, thus, power-electronics technologies have become the key element of many distributed generation systems [2], [3]. Considering a distributed power system with its own small scale generations and loads, a micro grid is formed [4]. Typical examples of micro grids are power systems in an all- electric ship [5], isolated island [6], [7], CERTS micro grid [8], etc. Most of the research conducted so far has concentrated on ac micro grids (e.g., islanding detection and autonomous operation of ac micro grids [7], [9] and power sharing of parallel-connected multiple ac inverters [10], [11]). With the rapid development of power-electronics technology, the wider

adoption of renewable energy sources, and the improvement and cost reduction of energy storage systems, multi terminal high-voltage dc grid and low-voltage dc micro grid have been proposed for large-scale wind power integration [12], commercial facilities (e.g., data centers [13], [14], isolated island [15], etc.). The protection of low-voltage dc micro grids was studied in [14] where various protection devices were discussed and different fault detection and grounding methods were investigated. DC voltage control and power sharing in a dc micro grid was investigated considering the dc-side impedance. Different operation modes for dc distribution networks including ac connection fault and islanding have been studied [15]. Reduced matrix converter is a convenient topology for offshore wind farm by its potential to reduce the size and weight of the converter, to improve the reliability by removing the electrolytic capacitor, and to increase the efficiency inherent to the less stages of conversion. Moreover, it is a very flexible topology which permits different types of operation with a simpler modulation compared with conventional three phase matrix converter. This paper investigates different modulation strategies applied to reduced matrix converter for offshore wind farms focused on efficiency improvement of the entire convention system.

III. CONTROLLER DESIGN

To increase the controller's robustness against variations in the operating conditions when the micro grid operates in the grid-connected or islanded mode of operation as well as its capability to handle constraints, a model-based model predictive control (MPC) design is proposed in this paper for controlling the inverters. As the micro grid is required to operate stably in different operating conditions, the deployment of MPC for the control of the inverters offers better transient response with respect to the changes in the operating conditions and ensures a more robust micro grid operation. There are some research works on the implementation of MPC for the control of inverters. In a finite control set MPC scheme which allows for the control of different converters without the need of additional modulation techniques or internal cascade control loops is presented but the research work does not consider parallel operation of power converters.

A. SYSTEM DESCRIPTION AND WORKING

3.1.1 SYSTEM DESCRIPTION

The overall configuration of the proposed dc grid based wind power generation system is shown in Fig. 3.

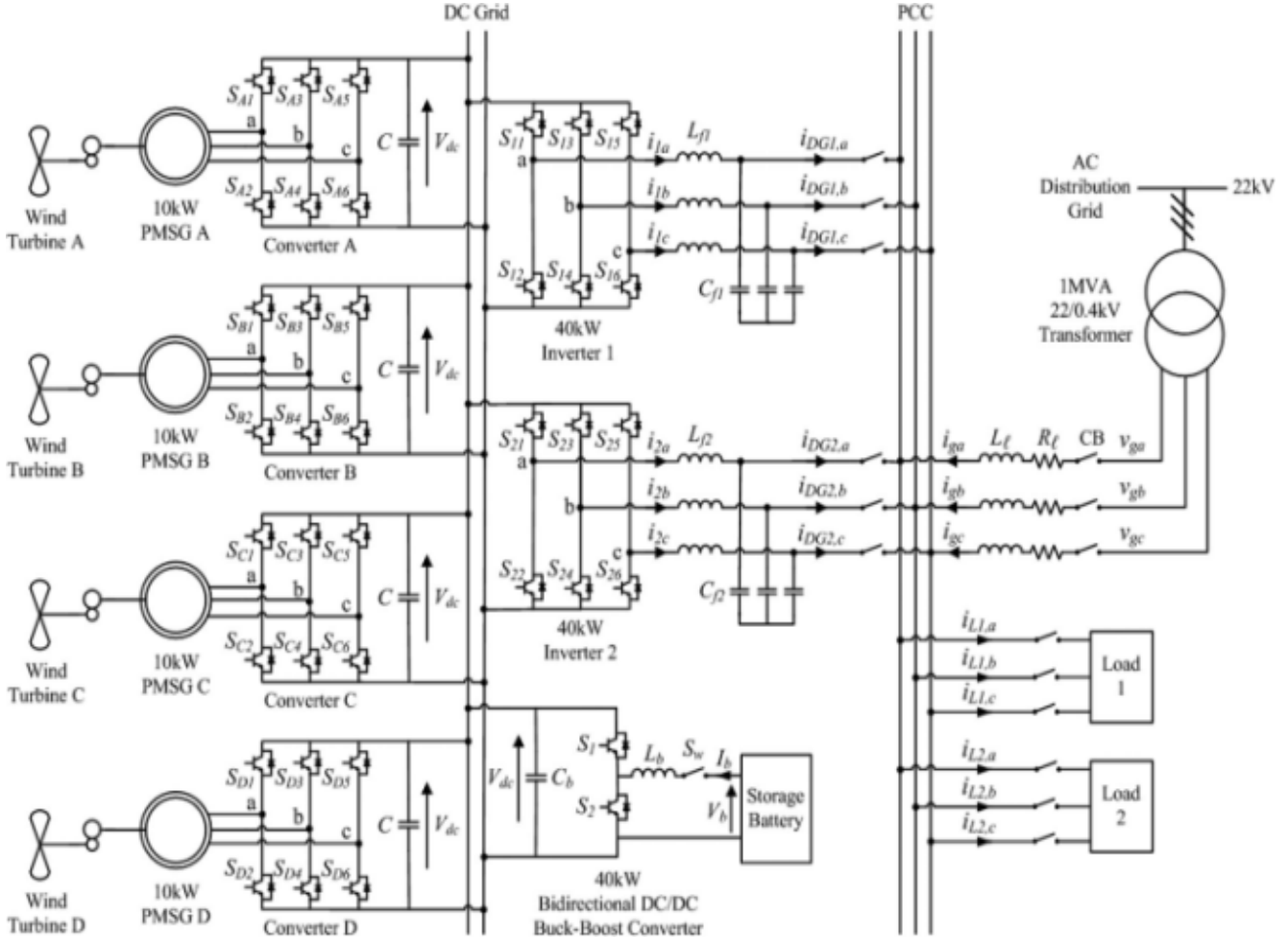


Fig-1: Overall configuration of the proposed dc grid based wind power generation system in a micro grid

The system can operate either connected to or islanded from the distribution grid and consists of four 10 kW permanent magnet synchronous generators (PMSGs) which are driven by the variable speed WTs. The PMSG is considered in this paper because it does not require a dc excitation system that will increase the design complexity of the control hardware.

The depletion of fossil fuel resources, growing power demand and environment changes force to investment in renewable energy resources, such as solar, wind, biomass, and cell fuel. Among them, wind is one of the most promising one. A total of 282.5 GW wind power capacity have been installed all over the world by the end of 2012. Wind energy is especially important to Japan because it is an island country with very limited resource. After the devastating Fukushima nuclear accident in 2011, Japanese government changed its energy policy and increased the priority to renewable energies. Limited by its available land, wind farm along its coastline has attracted a large number of attentions. In fact, shortly after the nuclear disaster, research institutions, which are supported by the government and private companies, started to build experimental wind farm. However, the increasing penetration of grid-connected wind energy causes a problem: unstable output of wind turbines may greatly deteriorate the quality of grid power. Wind kinetic energy is converted to electrical energy using wind turbines. As the environment is turbulent and almost unpredictable, the quality of the output power largely depends on the control and management of the wind turbines. How to maintain a stable output and also achieve a reasonably high efficiency is an important issue. Even the most efficient wind turbine cannot capture 100% power of the wind. Since the output power is a function of the wind speed and the tip-ratio speed, the wind turbine should run at the tip-speed ratio even the wind speed changes to extract as much power as possible from wind. Fig. 2. shows typical wind generation curves for three different types of wind turbines.

3.1.2 Plant Modelling

A linear approximate model of the plant is derived in this section by linearizing the plant at a specific operating point. The state-space representation of the linear model is used to design the control system. The general structure of a pitch-controlled wind turbine system is shown in Figure 3.3. It includes aerodynamic, the drivetrain, an induction generator, a pitch controller, and the pitch actuator.

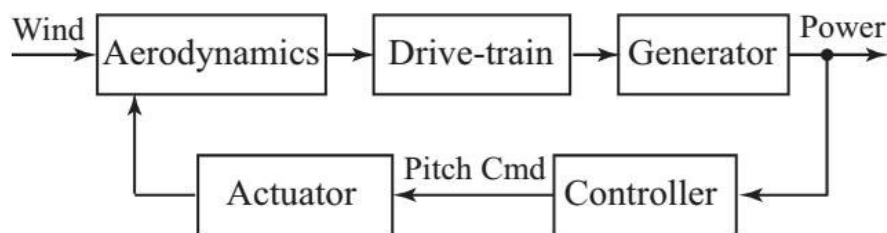


Fig-3: Structure of a pitch-controlled wind turbine system

IV. RESULTS AND DISCUSSION

A dc micro grid based wind turbine scheme for a grid connected is designed, the proposed system can operate either connected to or islanded from the distribution grid and consists of four 10 kW permanent magnet synchronous generators (PMSGs) which are driven by the variable speed WTs. The three-phase output of each PMSG is connected to a three-phase converter (i.e., converters A, B, C and D), which operates as a rectifier to regulate the dc output voltage of each PMSG to the desired level at the dc grid. The aggregated power at the dc grid is inverted by two inverters (i.e., inverters 1 and 2) with each rated at 40 kW. Instead of using individual inverter at the output of each WG, the use of two inverters between the dc grid and the ac grid is designed in the mat labSimulink.

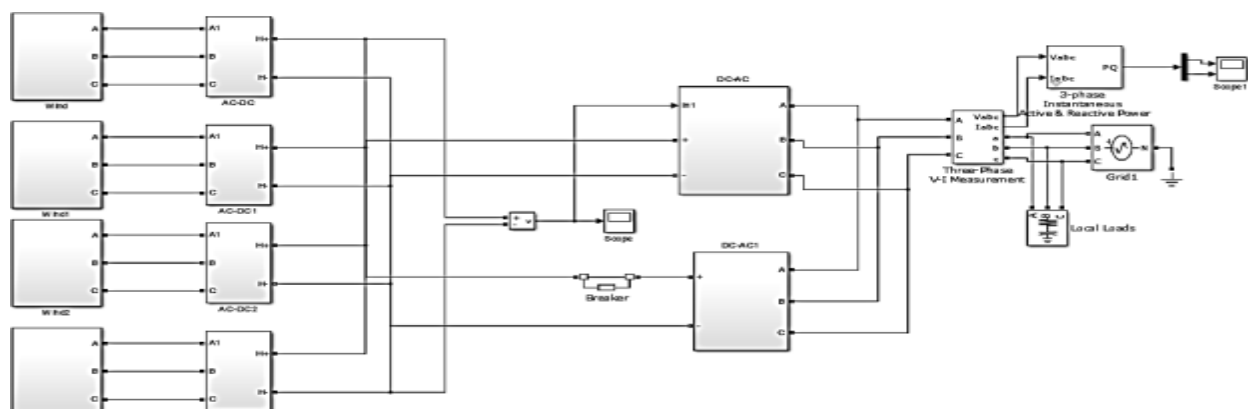


Fig-4: Design of the wind turbine system with the wind generators and ac-dc converter and the grid tie inverter

In order to regulate the wind power under the vibrational speed the wind turbine is controlled to maintain the power output, and grid is connected this is done to mitigate the stabilization errors. A fuzzy based controller is used to reduce the grid connected system, the fuzzy controller stabilizes the voltage of the grid which maintain the active power.

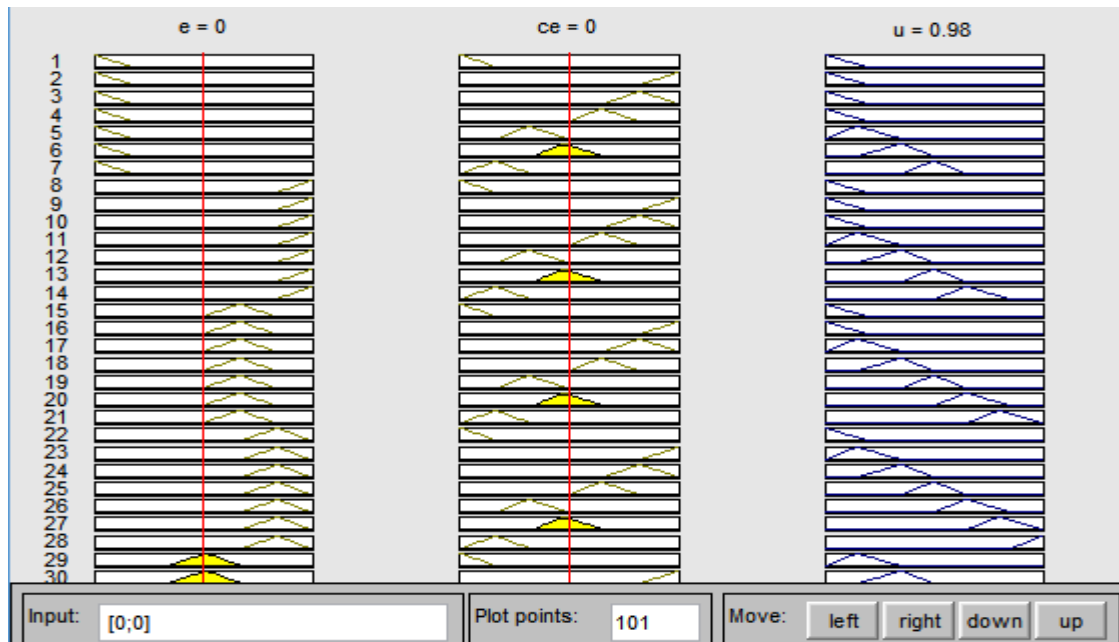


Fig-5: Fuzzy rule set for the grid voltage regulator

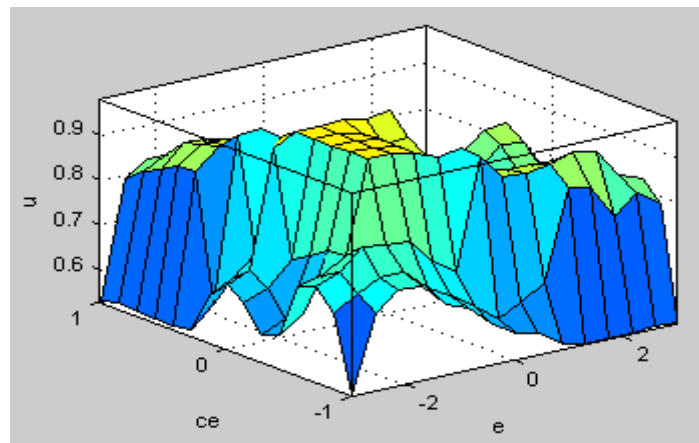


Fig-6: Fuzzy surface for interpreting error and change of error

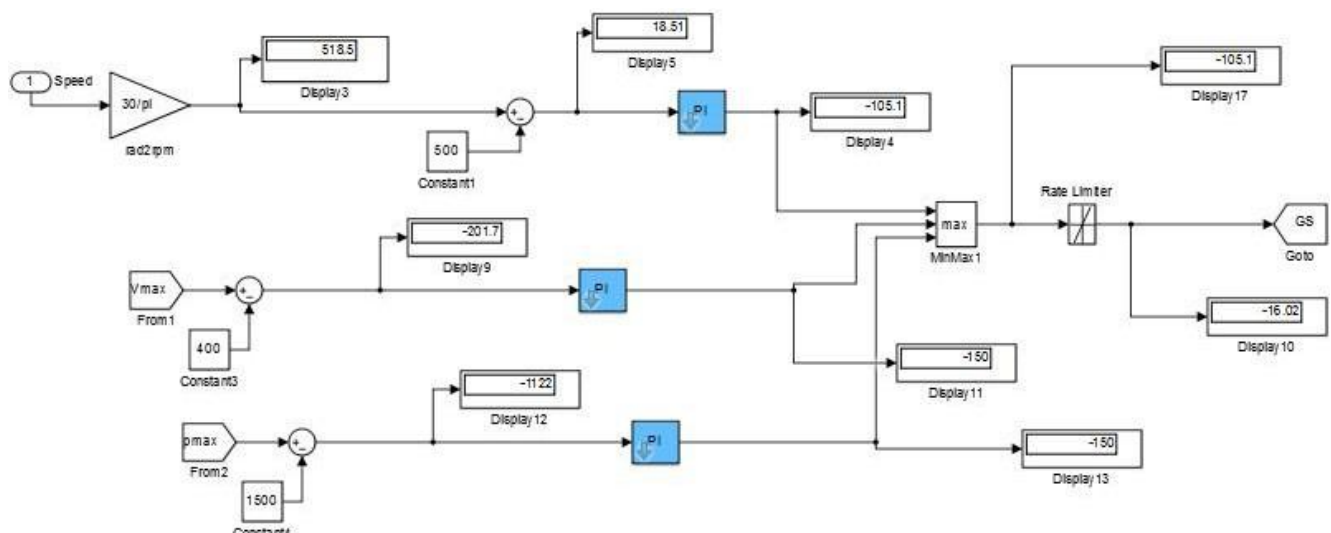
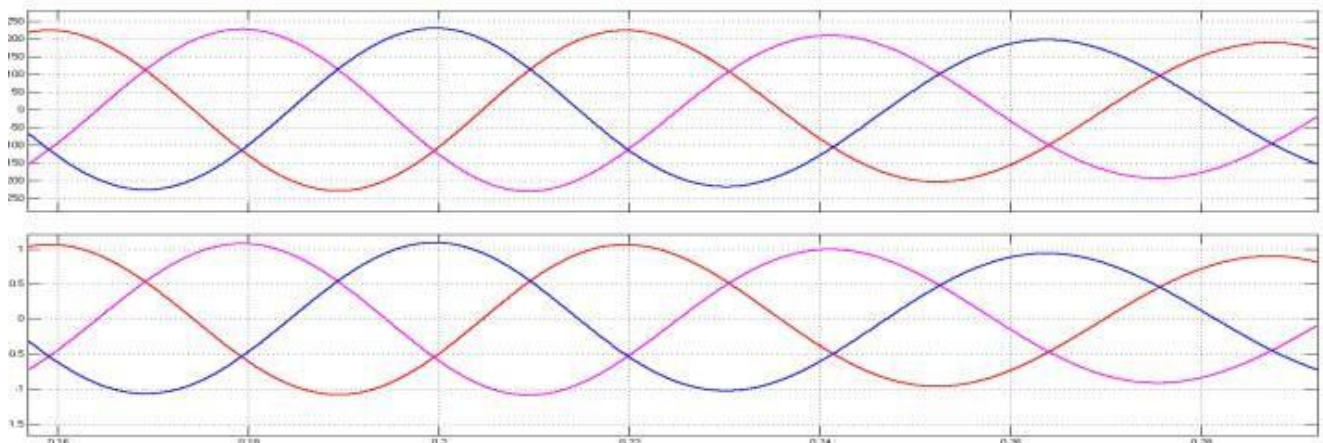
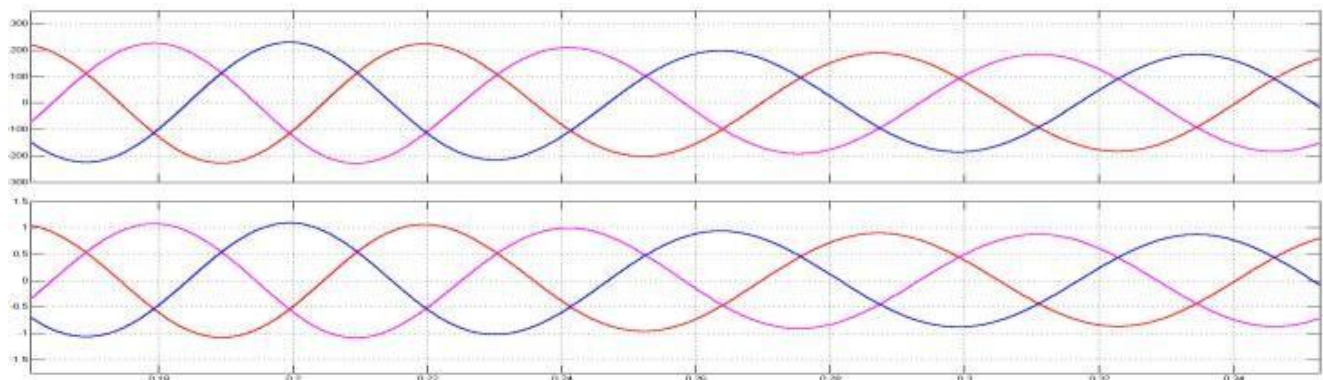


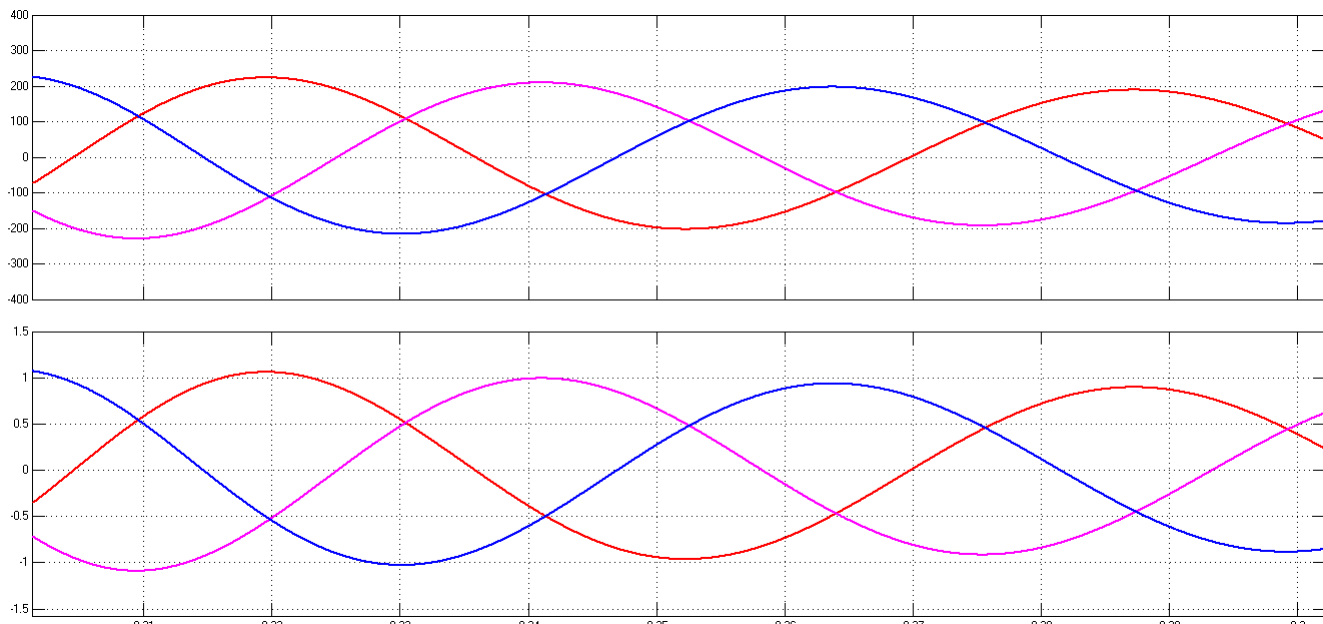
Fig-7: Controller for the wind turbine to maintain the constant power, the turbine is maintained with the regulated power despite of the line variations



A. Generated voltage and current of generator-A



B. Generated voltage and current of generator-B



C. Generated voltage and current of generator-C

V. CONCLUSION

In this work a design of a dc grid based wind power generation system in a micro grid that enables parallel operation of several WGs is presented. As compared to conventional wind power generation systems, the proposed micro grid architecture eliminates the need for voltage and frequency synchronization, thus allowing the WGs to be switched on or off with minimal disturbances to the micro grid operation. The design concept has been verified through various test scenarios to demonstrate the operational capability of the proposed micro grid and the simulation results has shown that the proposed design concept is able to offer increased flexibility. More over the wind disturbances are eliminated to maintain the balance across the inverters which the constant power control and the fuzzy control ensures the reliability to the operation of the micro grid.

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CONSTRUCTION AND STANDARDISATION OF EMOTIONAL INTELLIGENCE TEST FOR STUDENT TEACHERS

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ABSTRACT

Teaching is a profession which requires a lot of “emotion work”. As “emotion work cannot be performed well without possessing a foundation of emotional intelligence”, sound emotional intelligence is necessary for a teacher to excel in the profession. Student teachers being prospective teachers need to develop a high degree of Emotional Intelligence during their training period itself to be successful in the profession. Hence it is essential to ascertain the level of Emotional Intelligence of student teachers during the teacher education course, to give necessary training to develop Emotional Intelligence for those who lack it to the desired degree. This Emotional Intelligence Test is constructed and standardised to serve that purpose.

Keywords: Emotional intelligence, Personal competence, Social competence, Emotional competencies, Standardisation, Student Teachers

INTRODUCTION

Emotions are viewed as an essential part of individual's functioning and development. They are intimately connected with cognition. Emotions play an important role in one's thoughts, decision making and success in life. A harmonious blend of emotions and intellectual skills is the most powerful determinant of success and effectiveness in all spheres of life.

The concept of Emotional Intelligence adds depth to the meaning of intelligence. Emotional intelligence addresses the emotional, personal, social and survival dimensions of intelligence, essentially important in daily functioning. It is concerned with understanding oneself and others, relating to people, and adapting to and coping with our surroundings.

Emotional Intelligence-Meaning and Definitions

Mayer and Salovey (1989) first coined the term 'Emotional Intelligence' (EI) to describe a person's ability to understand one's own emotions, the emotions of others and act appropriately based on these emotions. It put forward the concept that intelligence is a combination of both intelligence quotient (IQ) and emotional quotient (EQ). Different researchers define Emotional Intelligence in different ways; as ability, cluster of emotional competencies, emotionally and socially competent behaviour etc. Thus, different definitions have been formulated by different researchers according to these points of view. Among them some are cited below.

Emotional intelligence is a type of social intelligence that involves the ability to monitor one's own and other's emotions, to discriminate among them, and to use the information to guide one's thinking and actions. (Salovey and Mayer, 1990)

Emotional intelligence is an array of personal, emotional and social competencies and skills that influence one's ability to succeed in coping with environmental demands and pressures. (Bar-on, 1996).

Emotional Intelligence refers to the capacity for recognizing our own feelings and those of others for motivating ourselves and for managing emotions well in ourselves and our relationships (Goleman, 1998).

Emotional intelligence is an array of non-cognitive competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures (Bar-On, 2002).

Mayer et al. viewed the construct Emotional Intelligence as an ability and designed a questionnaire to measure it (Mayer et al., 2000). Goleman (1998) viewed the construct as competencies-based. He presented a model with twenty-five competencies. Later these were reduced empirically to twenty competencies to form the Emotional Competencies Inventory (Boyatzis et al., 2000).

Bar-On, 1997 and Dulewicz and Higgs, 2000 resorted to a third view and operationalized the construct through questionnaires and models derived from empirical research into personal factors related to Emotional Intelligence; particularly into 'emotionally and socially competent behaviour' (Bar-On, 2000). Bar-On conceptualized Emotional intelligence as comprising of 15 aspects: self-regard, emotional self-awareness, assertiveness, independence, self-actualization, empathy, social responsibility, interpersonal relationship, reality testing, flexibility, problem solving, stress tolerance, impulse control, optimism, and happiness.

Goleman's and Bar-On's models are quite similar. Goleman's model includes the notion of "change catalyst," whereas Bar-On's includes "reality testing" (objectively assessing one's perceptions against the reality of the situation) and a distinct scale for stress management.

Thus a working definition of Emotional intelligence involves an individual's ability to recognise, understand and regulate his/her own emotions; the ability to recognise others' emotions and the ability to establish and maintain relationships with others. (Maree, J. G. & Fernandes, M.P.J., 2003).

Emotional Intelligence- Theoretical Perspectives

Goleman (1998) in his book 'Working with Emotional Intelligence' proposed five domains for Emotional Intelligence namely Self Awareness, Self Regulation or Managing Emotions, Motivating Oneself, Empathy and Handling Relationships or Social Skills. Out of these, first three domains constitute the personal competence which determines how one manages oneself and the last two domains constitute the social competence which determine how one handles the relationships. The first three domains come in the intrapersonal realm and the last two domains are interpersonal in nature.

Description of Competencies of Emotional Intelligence

Emotional competencies related to each domain of Emotional Intelligence (Goleman, 1998) are detailed below.

I. Personal Competence

Personal competence determines how one manages oneself. The domains coming under personal competence are Self Awareness, Self Regulation, and Motivation.

Self Awareness

Self awareness is knowing one's own internal states, preferences, resources and intuitions. Three emotional competencies coming under self awareness are:

- Emotional awareness : Recognising one's emotions and effects
- Accurate self assessment : Knowing one's strengths and limits
- Self confidence : A strong sense of one's self-worth capabilities

Self Regulation

Self regulation is managing one's internal states, impulses and resources. There are five competencies related to self regulation. They are:

- Self control : Keeping disruptive emotions and impulses in check
- Trustworthiness : Maintaining standards of honesty and integrity
- Conscientiousness : Taking responsibility for personal performance
- Adaptability : Flexibility in handling change
- Innovation: Being comfortable with novel ideas, approaches, and new information

Motivation

Motivation is emotional tendencies that guide or facilitate reaching goals. Four emotional competencies related to the motivation domain are:

- Achievement drive : Striving to improve or meet a standard of excellence
- Commitment : Aligning with the goals of the group or organisation
- Initiative : Readiness to act on opportunities
- Optimism : Persistence in pursuing goals despite obstacles and setbacks

II. Social Competence

Social competencies determine how one handles the relationships. Domains related social competence are empathy and Handling Relationships.

Empathy

Empathy is the awareness of other's feelings, needs, and concerns. Five emotional competencies related to empathy are:

- Understanding others : Sensing other's feelings and taking an active interest in their concerns

Developing others : Sensing others, development needs and bolstering their abilities

Service orientation : Anticipating, recognising, and meeting customers' needs

Leveraging diversity : Cultivating opportunities through different kinds of people

Political Awareness : Reading a group's emotional currents and power relationships

Handling relationships or Social skills

Social skills mean adeptness of inducing desirable responses in others. There are eight emotional competencies related to social skills.

Influence : Wielding affective tactics for persuasion

Communication : Listening openly and handling convincing messages

Conflict management : Negotiating and resolving disagreements

Leadership : Inspiring and guiding individuals and groups

Change catalyst : Initiating or managing change

Building bonds : Nurturing instrumental relationships

Collaboration and co-operation : Working with others toward shared goals

Team capabilities : Creating group synergy in pursuing collective goals

Review of research studies by Goleman about five hundred organizations worldwide; indicate that people having high Emotional Quotient(EQ) rise to the top of corporations. 'Star' employees possess more interpersonal skills and confidence than 'regular' employees.

Teaching is a profession which requires lot of "emotion work". As "emotion work cannot be performed well without possessing a foundation of emotional intelligence" Opengart (2005), sound emotional intelligence is necessary for teachers. Student teachers being prospective teachers need to develop a high degree of Emotional Intelligence during their training period itself, to be successful in the profession. Hence it is essential to ascertain the level of Emotional Intelligence of student teachers during the teacher education course period, to give necessary training to develop Emotional Intelligence for those who lack it to the desired level. This Emotional Intelligence Test is constructed and standardised to serve that purpose.

METHODOLOGY

Construction of the Emotional Intelligence Test

Emotional Intelligence Test for student teachers was prepared based on the model proposed by Goleman which involves competencies that may be categorised into five domains namely Self Awareness, Self Regulation or Managing Emotions, Motivating Oneself, Empathy and Handling Relationships or Social Skills.

Out of these, first three domains constitute personal competence which determines how one manages oneself and the last two domains constitute the social competence which determines how one handles the relationships. The first three categories come in the intrapersonal realm and the last two categories are interpersonal in nature. Each of the domain includes specific emotional competencies. The competencies related to these five domains are summarized and listed in the Table 1.

Table-1: Sub Skills Coming under the Five Domains of Emotional Intelligence

Competence	Domains	Sub Skills
Personal Competence	Self Awareness	Emotional Awareness
		Accurate Self Assessment
		Self Confidence
	Self Regulation	Self control
		Trustworthiness
		Conscientiousness
		Adaptability
		Innovation
	Motivation	Achievement drive
		Commitment
		Initiative

Social Competence	Empathy	Optimism
		Understanding others
		Developing others
		Service orientation
		Leveraging diversity
	Handling Relationships	Political Awareness
		Influence
		Communication
		Conflict management
		Leadership
		Change Catalyst
		Building bonds
		Collaboration and co-operation
		Team capabilities

Items for the Emotional Intelligence test were prepared based on the emotional competencies corresponding to the five domains.

Preparation of Items for the Draft Emotional Intelligence Test

Emotional Intelligence test for student teachers was developed by taking these twenty five emotional competencies corresponding to the five domains of Emotional Intelligence. The test was prepared in the format of a situational test in which probable imaginary situations based on the prescribed emotional competencies related to the domains of Emotional Intelligence were given; which a student teacher/teacher could come across in his/her professional or personal life. Fifty such situations were prepared based on the twenty five emotional competencies; two each for each competence. Five alternate probable responses were given to each situation of which neither is correct or wrong. The responses differed in the degree of the prescribed emotional intelligence skill element only. Student teachers have to give their responses to these situations on the basis of *how they feel* about the situation rather than *what they think* correct about it. That is, how they would have responded in that particular situation.

For example a situational question based on the emotional competence coming under the domain Self Awareness is:

Qn. You selected teaching profession as the most liked one. You are a very good teacher and satisfied with the profession. You get an offer from a reputed company to an administrative post with better financial prospects. Then you will

- accept the offer
- deny the offer and continue in the teaching profession
- ask for one more month's time to take a decision
- seek the advice of friends and parents and leave the decision to them
- consult an astrologer to know which profession better suits you

The draft test containing fifty such situations based on the twenty five emotional competencies and probable responses were given to experts in the field of Teacher Education and Psychology to ensure the content validity. They were asked to give their opinion on the scores allotted to the responses for each item also. As a situational test needs more time to be completed, experts were of the opinion that the number items could be limited to twenty five; that is one item each for one emotional competence. Hence 25 items were selected for the draft Emotional Intelligence Test; one each for each emotional competence. Then the test was given to language expert to check the correctness of the language. Based on the recommendation of the experts suitable modifications were made to the situations and responses.

Scoring Procedure

Provision for response was given on a five point scale with scores 5, 4, 3, 2 and 1. The most emotionally intelligent response was given a score of five and the least emotionally intelligent answer was given the score of one. Scores 4, 3 and 2 were assigned to the responses based on the degree of inclusiveness of the particular skill of emotional intelligence in the response in between the maximum score of five and the minimum score of one.

Pilot Study

Pilot study was conducted taking a sample of 50 student teachers at B. Ed level to find out the extent of difficulty and ambiguity in the wording of the items and to fix the time required for completing the test. Based on the recommendations of the experts and feedback from the student teachers, suitable modifications were made to avoid the ambiguity. As most of the students took about 25 minutes to complete their responses, the time for answering the test was fixed to be 25 minutes.

Tryout and Standardisation of the Emotional Intelligence Test

The draft emotional Intelligence test was administered for standardisation to a stratified cluster sample of 370 student teachers at B. Ed level of Kerala. The sample was taken giving due representation to the type of management of the institution, subjects of study and gender. Type of management of the institution included Government college of teacher education, aided college of teacher education, unaided college of teacher education and university college of teacher education (UCTEs). Subjects of study were streamlined as students of science subjects and humanities.

The procedure suggested by Edwards (1957) was followed for standardisation of the test. The responses were arranged in the ascending order of the total scores of the respondents and the scores of the upper 27% and lower 27% were taken for item analysis. The 't' values for all the items were found out (Table 2). All the items had 't' values 1.96 and above and were selected for the final tool.

Table-2: t- Value of the Items in the Emotional Intelligence Test for Student Teachers

Item No.	t-Value	Item No.	t- Value
1	5.29	14	3.7
2	2.56	15	3.29
3	6.88	16	6.95
4	8.1	17	6.16
5	2.88	18	5.19
6	4.23	19	4.09
7	5.99	20	6.29
8	9.64	21	7.44
9	7.08	22	9.79
10	9.61	23	2.27
11	8.96	24	3.11
12	8.37	25	4.28
13	3.20		

All the items were found significant at 0.05 level and were selected for the final Emotional Intelligence Test for Student Teachers. Hence the final test contains 25 items.

Reliability of the Emotional Intelligence Test

Test-retest method was used to ensure the reliability of the Emotional Intelligence test. The test was administered to 100 student teachers twice in an interval of 15 days. Correlation between the two tests was calculated using Pearson's product moment coefficient of correlation method. The reliability was found to be 0.83.

Validity of the Emotional Intelligence Test

Content validity of the Emotional Intelligence Test was established by thorough reference to the theoretical aspects, related literature and giving it to experts in the field of teacher education and psychology for their suggestions and opinion. Necessary modifications were made according to the suggestions and opinion of the experts. The statistical parameters of the test are given in Table 3.

Table-3: Statistical Parameters of the Emotional Intelligence Test

Sl. No	Parameters	Stress Score
1	Mean	104.54
2	Standard Deviation	10.49
3	Skewness	-0.666
4	Kurtosis	0.330

Norms of the Emotional Intelligence Test

Norms of the test were determined by the application theory of the normal probability curve (Garret 2005) using the formula $M \pm 1\sigma$. The norms for the present test are based up on the study conducted by taking a sample of 370 student teachers. The ideal time required for completing the responses by the student teachers was fixed to be 25 minutes. Score obtained by the individual can be interpreted with the help of the norms provided in Table 4.

Table-4: Norms and Values for the Emotional Intelligence Test for Students Teachers

Sl. No:	Groups	Norms value
1	High Emotional Intelligence	Scores above 115.03
2	Average Emotional Intelligence	Scores between 115.03 and 94.05
3	Low Emotional Intelligence	Scores below 94.05

Instructions for the Administration of the Emotional Intelligence Test

The standardized Emotional Intelligence Test was administered to student teachers after giving a thorough introduction about the test, highlighting the differences from usual intelligence tests, the way to give responses etc. They were asked to give their responses on the basis of *what they feel right* about the situation rather than *what they think right* about it. That is, how they could have actually responded in that particular situation. A response sheet was given along with the test in which the student teachers had to make their responses by putting a tick mark (✓) against their response for each item. Though the time limit stipulated was 25 minutes it was not strictly adhered to, as this is a test meant for the affective domain also. But majority of the student teachers completed the test in the prescribed time. Details of the number of items under each domain of the emotional intelligence test are given in the Table 5.

Table-5: Details of the Number of Items under Each Domain of the Emotional Intelligence Test

Serial No.	Domains	Serial No. of Items	Total Number of Items
1	Self Awareness	1,2&3	3
2	Self Regulation	4,5,6,7 & 8	5
3	Motivation	9,10,11&12	4
4	Empathy	13,14,15,16& 17	5
5	Handling Relationships	18,19,20, 21, 22, 23,24 & 25	8
Total			25

CONCLUSIONS

The Emotional Intelligence Test has been constructed and standardised strictly following the steps prescribed for standardisation. The content validity of the Emotional Intelligence Test was established by getting suggestions and opinion from a panel of experts in the field of teacher education and psychology and making necessary modifications accordingly. This test has got a high degree of reliability (0.83). Hence this test will be helpful for the educationists and teacher educators to ascertain the level of Emotional Intelligence of student teachers which will in turn be useful to provide necessary help and training to student teachers for the development of Emotional Intelligence and become successful in their teaching profession and life.

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TREATMENT IN AYURVEDA: A HOLISTIC APPROACH

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ABSTRACT

In Ayurveda a very elaborative manner is adopted for description of causes, signs, symptoms, pathogenesis, treatment and wholesome-unwholesome things for a disease. Different seers of Ayurveda have described different principles of treatment in different contexts of Ayurveda but the students and practitioners of Ayurveda face some problem such as these principles are scattered in different texts of Ayurveda, what they actually mean, which principle would be adopted for which diseases, whether they are interrelated or not, whether different principles are applied on the basis of different diseases or anything else etc. in this paper it is tried to enlighten all these concepts.

INTRODUCTION

There are a lot of medical sciences running parallel to each other in this world. Ayurveda is one among them. Ayurveda is the science of living being and its health. It always describes the ways through which a good health, in respect to mind and body, can be achieved. It tells about maintenance of good health, prevention of diseases and cure of diseases, either of mind or of body. It has its own concepts regarding anatomy, physiology and pathology of mind and body and on the basis of these concepts different types of treatment principles are described. These principles seem so many in number and different principle seems to be related to different diseases, when viewed on surface level but there is a high need to collect, interpret and analyze all these principles to correlate all these with each other and to make all these applicable in different diseases in integrated manner. In this article the same work has been done and tried to explore the concepts.

LITERATURE REVIEW

Acharya charaka has stated that disequilibrium in the normal state of dhatus is responsible for vikara¹.

Therefore, Dhatusamya is mentioned as main aim of charaka Samhita².

Any discrepancy in the normal state of dhatus leads to disease. Such processes which brings equilibrium of dhatus known as chikitsa³.

It is aimed to obtain sama avastha of dhatus and prevent the disequilibrium of dhatus⁴. One can achieve equilibrium of dhatus by adopting the factors which are responsible for maintain equilibrium of dhatus⁵.

In a different fashion, chikitsa is defined as the effort of physician, medicament, attendant and patient which have required qualities to maintain equilibrium of dhatus, by Acharya Charak. Here acharya has described the different components, required for 'Chikitsa karma'⁶.

In dashvidha parikshya bhava dhatusamya is mentioned as karya⁷.

Dhatusamya is characterized by alleviation of disease, normalcy of complexion and voice, nourishment of body, increase strength, desire for food on proper time, timely digestion of food, timely sleep and awakening, elimination of urine faeces and semen, normalcy of mind, intellect and sense organs etc.⁸.

Dhatusamya is achieved by shad karnas⁹. These are samanya, vishesha, guna, dravya, karma and samvaya. Samanya and vishesha are responsible for vriddhi and kshya respectively. Chikitsa is directly based on these two karnas and these two can only be performed by other four karnas.

Acharya charaka described different types of treatment in the form of shadopkrama i.e. langhana, rukshana, swedana, bringhana, snehana and stambhana¹⁰. These therapies are based on the principle of samanya and vishesha. These therapies are required to be combined with one another according to combination of disease. But in spite of this, numbers of therapies are six¹¹.

Two therapies are also described in the form of nourishing and reducing therapies i.e. santarpana and apatarpana. For pacification of doshas one should follow such dravyas that are opposite of the nature of dosha¹². This is also based on the concept of samanya and vishesha. Samanya and vishesha have three categories viz. dravya (matter), guna (property) and karma (action).

Rasayana and vajikarana are two therapies which are followed in both healthy and diseased individuals. In healthy persons these therapies increase bala and in diseased individual responsible for cure of disease.¹³

Dosha Dhatu and mala are the mula or basis of Sharir.¹⁴

One among the many principles of treatment of diseases is to diminish or promote the dosha, dhatu and Mala till the person become free from disorder and it will be the symbol of state of 'Samya' (equilibrium).¹⁵

In other verse, the treatment principle, told in the context of 'Vridhhi' state of Artava and Stanya, is equally applicable to other disorders. It says that dosha should be treated with respective purificatory and pacifying measures and through measures, not contradictory to 'kshaya' and 'vridhhi'.¹⁶

Increment in preceding dhatu results in increase of successive dhatu and vice-versa. Therefore, it should be tried to pacify or balance the increased dhatu.¹⁷

One whose dosha, agni, dhatu and mala all are in the state of equilibrium and who has cheerful mind, intellect and sense organs is termed as swastha¹⁸

Dhatu word is defined as dharanat dhatvah which means all elements of body which hold the body called as dhatu. So trividha dosha, sapta dhatus and trividha malas all are termed as dhatu because these three are main roots of the body¹⁹. Dhatusamya is a state of all bodily dhatus in which all remain on their normal place performing their functions properly whether it is structural or functional.

The principle of treatment according to acharya sushruta is decreased doshas should be increased, aggravated ones should be pacified, advanced one should be eliminated and those which are in equilibrium should be preserved²⁰.

Ahara is also responsible for dhatusamya. If the food is taken in appropriate quantity, it will produce dhatusamya. Here dhatu means dosha, dhatu and mala.²¹

Acharya sushruta described nidana parivarjana as chikitsa²². It means removal of such etiological factors which are responsible for disease. But only nidana parivarjana is not a sufficient cause for treatment that's why dhatusamya is essential concept to achieve health.

There is a need of knowledge of 'Satkriyakala' for successful treatment of any disease. These are 'Sanchaya', 'Prakopa', 'Prasara', 'Sthansansraya', 'Vyakti' and 'Bheda'.²³ If the dosha get eliminated in the stage of accumulation (Sanchaya) then it do not attain successive stages and will be easier to treat because dosha become stronger as they proceed further.²⁴

The dominant dosha should be treated first without antagonizing the other dosha. The same rule will be followed in the case of aggregation of three dosha.²⁵

DISCUSSION

First of all it is needed to understand the concept regarding diseases in Ayurveda because treatment principle is based on this. Disequilibrium/vitiation in dhatu and dosha of body results in the disease according to Ayurveda. Dhatu are the structural as well as functional entities of body. Vitiation in dhatu may occur due to various reasons but regardless of reason, every time, dhatu vitiation will lead to discomfort and disease in body. Therefore ultimately, equilibrium in dhatu of body and healthy dhatu is desirable to prevent the disease and to cure the diseases.

To maintain the body healthy, diminished components of body should be increased and increased components should be decreased. it is called 'Samnya' and 'Visheshha'. It will result in healthy dhatu and their srotas which are the main sites for generation of disease.

Different 'Karan dravya' and 'Karya dravya' are involved in treatment procedure through their Guna, Karma and 'Samvaya' relation.

There is also one very interesting concept that if we avoid the causative factors completely then further deterioration in body would not be possible and the body itself become able to manage the diseases in a significant number of cases.

Shaman and shodhan karma are the complete treatment. Any procedure cannot be beyond these processes in curing process of a disease. These procedures are adopted according to patient, disease, time, place, resources etc. Either one of these or both of these procedures jointly can be adopted for a disease. It can be said that shaman karma is done for dosha and shodhan karma is done for mala. Often it is seen that during panchkarma (shodhan karma), dosha are also removed from body. This dosha should be interpreted as mala because when dosha get excessively vitiated and increased then it acquire the form of mala.

CONCLUSION

1. The main principle behind the treatment is 'Samanya' and 'Vishesha'.
2. 'Nidanaparivarjana' is the principle for prevention and good prognosis of diseases.
3. It is fulfilled through rest of four padarth, 'Dravya', 'Guna', 'Karma' and 'Samvaya'.
4. Main aim of this principle is to maintain or regain normalcy of 'Dhatu'.
5. Mainly two procedures are adopted and performed with the help of 'Dravya', 'Guna', 'Karma' and 'Samvaya' to fulfill the main aim through the main principle of treatment. These are the, 'Shaman' and 'Shodhan' procedure.
6. These procedures are performed at suitable time according to 'Kriyakala'.

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URINARY DISEASES: A MAJOR HEALTH PROBLEM IN INDIA SINCE ANCIENT PERIOD**Shrikant Pandey¹ and B. K. Dwibedy²**Senior Resident¹ & Ph. D. Scholar and Professor², Department of Siddhant Darshan, Faculty of Ayurveda, I.M.S., B. H. U. Varanasi**ABSTRACT**

Studying the Literature of Ayurveda reveals that Acharyas had different view and concern on different diseases based on their prevalence on that time and prognosis of diseases i.e. they have described different diseases in different fashion. They have described some diseases in very descriptive form and some in very concised form and among all these diseases or pathological conditions, Acharyas have described mutra roga in most descriptive manner. When Basti as a site and mutra as a dusya is considered in context of disease then we can say that among all the diseases, disease having maximum number of types are of mutra roga or Bastigata roga, described in Ayurveda. These are as much as 41 types.

INTRODUCTION

Ayurveda is a science of living being, especially for human race, established during 2000-3500 B.C. in place of vedic medicines and was written or published in that period. It was 2000-3500 BC, when knowledge of Ayurveda was established in place of vedic medicine which was continued from vedic period to Upanishad period. All the aspects of health (physical and mental), in the context of physiology and pathology of body, relevant according to ancient time and new pathological conditions, which had chance to evolve, were discussed by seers of Ayurveda. Although each and every condition was not specified by a specific name but all possible conditions were discussed and written in Ayurveda. Also during course of time different new diseases and conditions were introduced by successive acharyas/seers of Ayurveda. Ayurveda was established with the view of holistic approach of human life. It is a notable point that the urinary diseases have been described in much more descriptive fashion in compare to other diseases existing at that time. According to an important text book of Ayurveda, chraka samhita, three major part of body should be protected i.e. sira (head), Hridaya (heart) and Basti (Kidney). But in this reference the number of diseases of heart are minimal, numbers of diseases of sira (head) are not much not less while diseases related to urine are maximum. In this paper it will be received to trace out life style of those days and a system of study for urinary diseases.

LITERATURE REVIEW

Acharyas have described mainly three types of Mutra roga named-

1. Mutradoshha
2. Mutrakrcchha
3. Prameha.

These Mutraroga are described under six different names by different acharyas-

1. Mutradoshha
2. Mutraghata
3. Mutrakrccha
4. Mutrarodh
5. Ashmari roga
6. Prameha

Sr. no.	Mutradoshha ¹	Mutraghat ²	Mutrakrccha ^{3,4}	Ashmari roga ⁵
1	Mutraukasada	Mutraukasada	Vataj	Vataj
2	Mutrajathara	Mutrajathara	Pittaj	Pittaj
3	Mutrakrcchra	Mutrakrcchra	Kaphaj	Kaphaj
4	Mutrotsanga	Mutrotsanga	Sannipataj	Sukraj
5	Mutrasamksaya	Mutrasamksaya	Sukraj (charak)	
6	Mutratita	Mutratita	Ashmarij	
7	Vatasthila	Vatasthila	Sharkaraj	
8	Vatabasti	Vatabasti	Raktaj	
9	Usnavata	Usnavata	Shakritaj (susruta)	

10	Vatrakundalika	—		
11	Granthi	Granthi		
12	Vidvighata	—		
13	Bastikundala	Bastikundala		

Mutradosha- Acharya charak has used this term while describing 13 types of urinary problems in the chapter named as ‘Trimarmiya-siddhi adhyaya’. It is also noticeable that among these mutradosha, acharya charak also considered ‘mutkracca’ along with other mutradosha. Acharya charak also described ‘mutkracca’ separately in the chikitsa sthan under the chapter of ‘trimarmiya-siddhi’ chapter. But there are some conceptual difference in the description at these two places. Thirteen types of mutradosha are as following-⁶

When pitta or kapha or both are collected and consolidated by vayu, the patient passes red, yellow urine with thick consistency, burning sensation, white precipitation or associated with all symptoms. This is known as ‘mutraukasada’. It should be treated with measures alleviating kapha and pitta.⁷

When urge of urine is suppressed then it blows up the abdomen as like in Udavarta by vata dosha. It is characterized as pain without reason along with the symptoms of indigestion, retention of urine and faces. This is known as ‘mutrajathara’.

In this condition one should go for ‘mutravirechan’(diuretic measures). ‘Hingu dwiruttara’ powder, mentioned in ‘trimarmiya chikitsa’ chapter of chikitsa sthan, should be used in the treatment of disorders related to three vital parts as it destroys mutrodara, ANAH and ADHMAN of anus and penis.⁸

When one goes into sexual intercourse despite of having urge of urination, the semen gets dislodged and obstructed by vayu and is discharged before or after urine. This is known as mutkracca.

Sometimes in some parts of channels (srotas) of urine, there is derangement (khavaigunya) and spasm caused by vata. Due to this, some urine stays at the junction of glans penis and is passed out with some time lapse with severe pain or without pain. It is known as ‘mutrotsamga’ which is also characterised by the passing of the remnant urine in broken streams and heaviness in penis.

When urine is dried up due to vata with its symptoms, it is known as ‘mutrasamkshaya’.

When urge of urination is held for long duration and thereafter going for urination, urine is not passed quickly or is passed slowly. It is known as ‘mutratita’.

When vitiated vayu creates obstruction and ADHMAPAN in urinary bladder and anal region and represented as mobile, protruded mass which is extremely painful and causing obstruction in passage of urine and faeces, then it is called as ‘Asthila’.

When vayu gets vitiated in the bladder due to suppression of the urge of urination, after the fullness of bladder, and causes retention of urine, distress and itching, is known as ‘vatabasti’.

When vayu along with pitta drying up the urine and results in passing of red or yellow urine with difficulty, distress and burning sensation in bladder and penis region, is known as ‘Ushnavata’.

When vayu gets vitiated in seat and passage of urine, due to retention of urine, then it creates the symptoms like torn, piercing pain, wrench and affects urine along with stiffness, discontinuous flow of urine, heaviness, cramps, severe pain and retention of urine and faeces then it is known as ‘vatakundalika’.

Rakta affected by vata and kapha produces a ‘Granthi’ (nodular mass) in the opening of urinary bladder. This mass creates obstruction in the passage of urine and the patient passes urine with difficulty and pain as in calculus. This is called as ‘mutragranthi’.

In a rough and debilitated person, sometimes vata dosha gets vitiated in such a manner that it reverses the passage of stool and stool enters into the urinary canal. Then the patient passes urine with difficulty, contaminated with faeces and having faecal odour. This should be known as ‘vidvighata’.

If urinary bladder bulges out from its place and stays blown up like fetus due to fast travelling, jumping, exertion, injury and pressure and patient suffers from pain, pulsation and burning sensation, passes urine drop by drop, feels pain/pressure, stiffening, cramp and distress during passing of urine in stream fashion then this condition is known as ‘bastikundala’. This condition is severe like weapon and poison. It is mostly due to high predominance of vayu and uncontrollable by the un-wise.

When pitta is associated there are burning sensation, pain and abnormal colors in urine. When kapha is associated there is heaviness, swelling and urine become unctuous, concentrated and white.

When the passage of urinary bladder gets obstructed by kapha along with aggravation of pitta then it is incurable.

The condition where the duct is not obstructed and also not coiled like 'kundali', is curable.

In conditions of coiling of urinary bladder, thirst, fainting and dyspnea arise.⁹

Looking to the predominance of dosas, one should cure the stage of 'mutrkrcccha' (difficulty in urination) i.e. these should be treated with diuretics. 'Basti' (Enema) and 'Uttarbasti' (urethral douche) should be given in all cases.¹⁰

Mutraghata- Acharya Susruta has considered some diseases, similar to those described by Charak in 'Mutradosha', under the chapter 'Mutraghata-pratishedh' in Uttartantra. Acharya susruta has not considered 'Vastikundala' and 'Vidvighata'. He considered two types of 'Mutroksada', one is due to pitta dosha and another one is due to kapha dosha. Thus, Susruta has considered 12 types of diseases under the heading of 'Mutraghata'.

Acharya Susruta has described 'Mutrasukra' in spite of mutrkrcccha, described by acharya charak among 13 types of 'Mutradosha'.¹¹

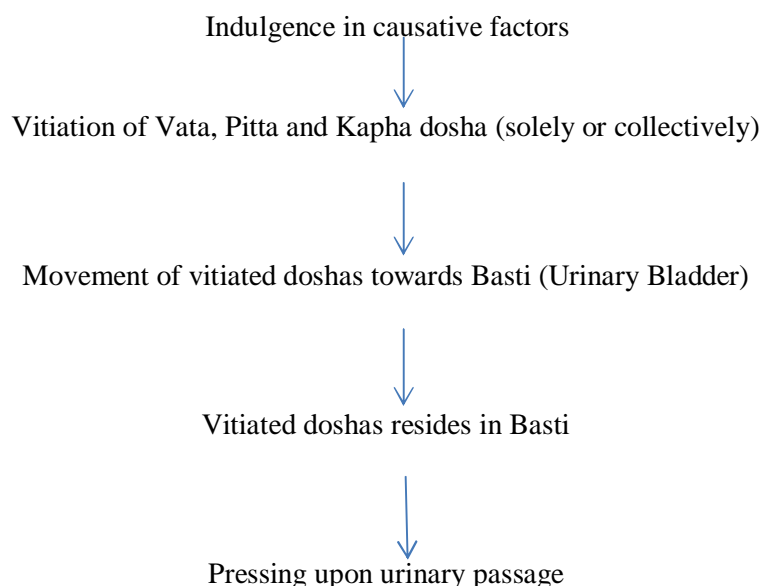
Acharya charak has also described 'Mutraghata' in the 19th chapter of Sutrasthan and told 8 types of Mutraghata which are similar to the types of 'mutrkrcccha'.¹²

Mutrkrcccha- It is described by acharya in the Chikitsa sthana, under the heading of Trimarmiya chikitsa. He said that, when the vitiated doshas get placed in Basti and generate discomfort/obstruction in the passage of urine and the person releases Mutra with difficulty, it is called Mutrkrcccha.¹³

Some highly specific factors are described as reasons for generation of Mutrkrcccha like-¹⁴

- a. Exercise
- b. Tikshna drug (irritants)
- c. Rough/dry drug
- d. Regular riding on a fast moving vehicle/mounting horses
- e. Intake of meat of marshy animals i.e. animals of wet land and fishes.
- f. Over eating or eating before digestion of previously taken meal.
- g. Indigestion

Doshas of body get vitiated due to above causes and perform pathogenesis in following way-¹⁵(Ch Ci 26/, Page)





Difficult urination

Vitiated doshas reside and cause mutrakriccha in following fashion-¹⁶

- Vata alone may get vitiated and resided in Basti and results in Vatika mutrakriccha.
- Pitta alone may get vitiated and resided in Basti and results in Pattika mutrakriccha.
- Kapha alone may get vitiated and resided in Basti and results in Kaphaja mutrakriccha.
- All three doshas may collectively get vitiated and resided in Basti and results in Tridoshaja mutrakriccha.
- Sometimes, vata dosha dries up semen, urine, pitta or kapha dosha by absorbing their moisture content and brings these in basti (bladder) resulting in the formation of Ashmari (Calculus).
- Sometimes, calculus gets disintegrated by vayu and comes out through urinary passage. Disintegrated form is known as Sarkara.

Acharya susruta has also described 8 types of 'Mutrakriccha' in the 'Mutrakriccha-pratisedham' chapter. But Susruta also used the term 'Mutropghata', synonymus for 'Mutrakriccha'. There is one big difference in the description of these two acharyas. Acharya Susruta, unlike Charak, has not considered 'Sukraja Mutrakriccha', rather, he considered 'Sakritaj Mutrakriccha' -¹⁷

When vayu gets vitiated by suppression of urge of feces then it creates flatulence, colic and retention of urine. It is called 'Sakritaj-Mutrakriccha'.¹⁸

A seer of Ayurveda, Harita, also had given his view on Mutrakriccha and told that conditions responsible for vitiation of pitta like katu, amla, lavana, dravya, wine, hot beverages and food, exertion, exercise and pain are responsible for vitiation of pitta and vitiation of pitta dosha immediately causes the condition of mutrakriccha which is characterized by difficulty in urination and warmth in urine.¹⁹

In another verse, acharya harita explain the mutrakriccha caused by vitiation of vata dosha. He said that due to lack of exercise consuming much food, taking bath in cold water, vata dosha gets vitiated and causes obstruction in the passage of urine.²⁰

Acharya harita has described the diseases related to Basti (bladder), specifically in 4 chapters of tritiya sthan. It denotes the much prevalence of mutraroga in that era.

Similarly, acharya bhela had also a significant concern on mutraroga or diseases related to Basti (bladder). He described Prameha roga and Mutrakriccha in three chapters of chikitsasthan.

Acharya bhela had also emphasized on 8 types of mutrakriccha and its treatment.

Mutrarodh- This term is used by Acharya Harit, in tritiyasthan of Harit samhita.²¹ Not much description is available related to Mutrarodh and the available description of Mutrarodh indicates that it is synonymous with the 'Mutrakriccha'.

Ashmari- Formation of calculus in the mutravaha srotas is known as Ashmari roga. It is described in separate chapter by acharya Susruta, Harita and Vagbhatta. Acharya Charak has described the pathogenesis and treatment of Ashmari in the context of Mutrakriccha. Following are some causative factors for Ashmari-²²

Prameha- This group of disease is also related to 'Basti' and 'Mutra'. These are 20 in number.²³

PRAMEHA	DOSHA
Udakmea	Kapha
Ikshubalikamea	Kapha
Sandramea	Kapha
Sandrprasadmeha	Kapha
Suklamea	Kapha
Sukramea	Kapha
Shitamea	Kapha
Siktamea	Kapha
Shanairmea	Kapha
Alalmeha	Kapha

Ksharameha	Pitta
Kalameha	Pitta
Nilameha	Pitta
Lohitameha	Pitta
Manjisthameha	Pitta
Haridramaha	Pitta
Vasameha	Vata
Majjameha	Vata
Hashtameha	Vata
Madhumeha	Vata

Following factors are considered as general cause of 'Prameha roga' -²⁴

आस्यासुखंस्वप्नसुखं दधीनिगम्यौदकान् परसाः पयांसि

नवान्नपानंगुडवैकृतंच प्रमेहे हेतुः कफकृच्छसर्वम्

DISCUSSION

Charak samhita, an important text book of Ayurveda, has mentioned three major group of 'Mutroga' and it is notable that these mutraroga have been mentioned in Ayurveda in two ways. In first way, some diseases are directly mentioned under 'Prameha' in reference to mutraroga and in second way, some diseases are mentioned under concept of 'Trimarma'. Former one is described by many acharyas in almost the same way but the later one is described in different ways.

Trimarma theory is the unique theory of Charak samhita. Trimarma includes the 'Shira', 'Hridaya' and 'basti'. But the diseases mentioned by acharya charak in this reference are also mentioned by other acharya in same or different titles.

In 'Kiyantashirshiya', a group of 'mutraroga' is not described but the complication of Prameha (Prameha pidika) is mentioned means Charak is agreed to consider the Prameha roga in Mutraroga but this disease has an independent identity.

In 'Trimarmiya chikitsa' chapter, acharya Charak has described a group of mutraroga named as 'Mutrakrccha'. Micturition with difficulty is the main basis of classification of this group. The different diseases in which urine passes with difficulty are mentioned in this group. In 'Trimarmiyasiddhi' chapter there is a large group of 'mutradosha' described by acharya charak. It comprises as much as 13 types. The 'mutrgahta' described by acharya susruta is very much similar to 'mutradosha', described by acharya charak. But at some places they differ to each other like, susruta have not described 'vidvighata' and 'vakrakundalika' rather he described two types of 'mutrauksada'. Some diseases of this group requires medicinal while others require surgical intervention. The diseases of this group are related to urine formation and urine flow. Probably it was the base to describe the diseases as a complication or disease generated due to other conditions.

Prameha is the group in which diseases or conditions are mentioned on the basis of abnormality of urine. The contents of body pass through urine and making the urine abnormal thereby creates such type of conditions which are grouped here. In prameha roga, urine is formed in adequate quantity or even in more quantity but the quality is altered because of passing of bodily content through urine.

In reference of 'Trimarma', it is very considerable thing that Shiroroga and Hridroga are not described or mentioned as much as Mutraroga. It is very notable point that India have severe incidences of urinary disorder from very past. It is the subject of study in relation to the geographical study and life style study etc. in reference to prameha, specific diet and life style is described as the cause of it. Other urinary disorders are described under the context of Trimarma.

CONCLUSION

1. Description of 'Mutraroga' is much in comparison to diseases of other marma i.e. Hridaya and Basti.
2. It is seen that number of 'Mutraroga' described in Ayurveda is more than number of any other disease which reflects its predominance in ancient time in society.
3. 'Mutradosha' group of diseases are related to defective urine formation and release at the level of kidney.
4. 'Mutrakriccha' and 'Ashmari' group of diseases are related to defective urine flow and micturition at the level of lower urinary tract.

5. 'Prameha' group of disorder is related to passing of body contents through urine.

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**INVESTMENT PERCEPTION OF UNORGANISED SECTOR: A STUDY WITH REFERENCE TO
UDUPI CITY**

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ABSTRACT

Investing is the act of committing money or capital to an endeavour, with the expectation of obtaining an added income or profit. Investment is important to accomplish one's financial goals as well as to provide buffer for unforeseen expenses that may arise in future. Researchers in this paper have studied the awareness level of unorganised sector about various investment avenues and their preferences towards it. The study was conducted by taking a sample size of 150 people which includes owners, partners, employees, workers of unorganised sector of Udupi city. Random sampling method was used for the present study along with Likert scale. Chi-square was used for testing the hypothesis. The study revealed that more than three- fourth of the investors in unorganised sector are aware of the investment avenues available but due to lack of knowledge are taking bad investment decisions. The study also highlights the problems faced by the investors of the unorganised sector while investing.

Keywords: unorganised sector, investment avenues, finance, investors.

INTRODUCTION

Investing is not just a game or a gamble, but a serious subject that can have a major impact on investor's future and wellbeing. An investment consists of three elements- time of investment, sacrifice made in the present and the expected gain in the future. Every investment has its own risk and return linked with it. Investing in various types of assets draws people from all walks of life irrespective of their profession, income, economic status, education and family background. Thus, there are large numbers of investment instruments available today and people can choose the proper avenue among those available, depending upon their specific need, risk preference, and return that are expected. However, as far as the unorganised sector is concerned, irrespective of economic class, their share in investment remains flat. Here, the researchers have considered both the production as well as the service aspect of the unorganised sector by collecting data from:

- Shops
- Hotels
- Tailors
- Fishermen/ Fisherwomen
- Street vendors
- Garage workers
- Cobblers
- Electricians
- Plumbers
- Auto- Rickshaw drivers
- Contract workers
- Farmers
- Scavengers
- Domestic workers
- Barbers
- Carpenters
- Playschool workers

- Driving school workers
- Dhobi

RESEARCH OBJECTIVES

- To study the investment awareness level among unorganised sector.
- To highlight the investment perceptions of the unorganised sector based on their savings.
- To project the factors considered by the people of unorganised sector for their investment.
- To find the problems that is faced by the unorganised sectors during investments.

RESEARCH METHODOLOGY

Research design: This case study is based on descriptive study. The descriptive research here is carried out to describe about the phenomenon. This study is hence done to understand the investment perception of the unorganised sector.

Sampling size: Sampling size is 150 for convenience i.e. 150 people filled the questionnaire for the survey.

Sampling technique: Sampling technique is the technique used to select the sample size. Random sampling technique is used here to distribute the questionnaires among the investors of unorganised sector.

Sample design: Since the information is to be taken from investors of the unorganised sector, a questionnaire was prepared for studying the investment perception of the investors of the unorganised sector in Udupi.

Data collection source: The study is based on both primary and secondary data. An open-ended questionnaire was prepared with a total of 15 analytical questions to assess the perception of the respondents of unorganised sector towards investment. 5 point Likert's scale has also been used for the same. The secondary information is collected from different materials viz. books, journal, magazines, articles and websites.

HYPOTHESES**Hypothesis 1:**

H₀: There is no significant relation between gender and awareness level among the unorganised sector

H₁: There is significant relation between gender and awareness level among the unorganised sector

Hypothesis 2:

H₀: Savings and preference of investment avenues are independent

H₁: Savings and preference of investment avenues are dependent

Hypothesis 3:

H₀: There is no significant relation between age and factors which are considered while investing by unorganised sector

H₁: There is significant relation between age and factors which are considered while investing by unorganised sector

NEED FOR THE STUDY

In India, more than 82% of the workforce is employed in the unorganised sector as noted by The International Labour Union in its India labour market update of 2016. Hence we can conclude that the GDP contribution of the unorganised sector is huge. Thus, it is important to know whether they are aware about the various investment avenues available and how much of their earning is actually getting invested in something useful.

LITERATURE REVIEW

Pandian (2001) defines investment as employment of funds on assets with an aim of earning income or capital appreciation.

V.A Awadhani (2004) explains investment as the use of funds for productive purposes for securing appreciation of income and assets.

Heena Kothari (2012) examined the investment behaviour towards investment avenues a study with reference to Indore city implementing mean and standard deviation results and found that investors of different age group have different behaviour while doing investment.

Dr. Dhiraj Jain and Ms. Ruhika Kothari (2012) made a study on investor's attitude towards post office deposit schemes- an empirical study in Udaipur district, Rajasthan using 100 respondents and the study revealed that though the level of awareness regarding post office deposit schemes is low, majority of them had good opinion about it. The study also showed that low rate of return was the major problem faced by the respondents.

Prof. Sanket L. Charkha and Dr. Jagdeesh R. Lanjekar (2018) made a study on Savings and investment pattern of salaried people with reference to Pune city by taking a sample size of 60 and it is revealed 26.34% of the respondents are investing their money due to safety & 16.10% of the respondents are investing due to tax benefits.

FINDINGS OF THE STUDY

Table 1: Demographic profile of the respondents

A.

Sector \ Gender	Female	Male	Total
Production	43	32	75
Service	32	43	75
Total	75	75	150

Source: Primary data

B.

SL.NO.	DEMOGRAPHIC FACTOR	No. of respondents	PERCENTAGE
I.	Age		
1	18-30	26	17.3
2	31-45	47	31.3
3	46and above	77	51.3
	Total	150	100
II.	Educational qualification		
1	Uneducated	7	4.7
2	Primary	56	37.3
3	Board	41	27.3
4	PUC	21	14
5	Graduate	21	14
6	Masters	4	2.7
	Total	150	100
III.	Status of occupation		
1	Owner	105	70
2	Partner	12	8
3	Employee	30	20
4	Worker	3	2
	Total	150	100
IV.	Experience (years)		
1	Less than 2	14	9.3
2	2 to 5	16	10.7
3	5 to 10	23	15.3
4	10 above	97	64.7
	Total	150	100
V.	Savings (monthly)		
1	5000-10000	92	61.3

2	10000-20000	48	32
3	20000-30000	8	5.3
4	above 30000	2	1.3
	Total	150	100

Source: Primary data

Here the **Table A** shows that among 150 respondents 75 were female out of which 43 belonged to Production sector and 32 were from Service sector and among 75 male respondents 32 belonged to Production sector and 43 belonged to Service sector.

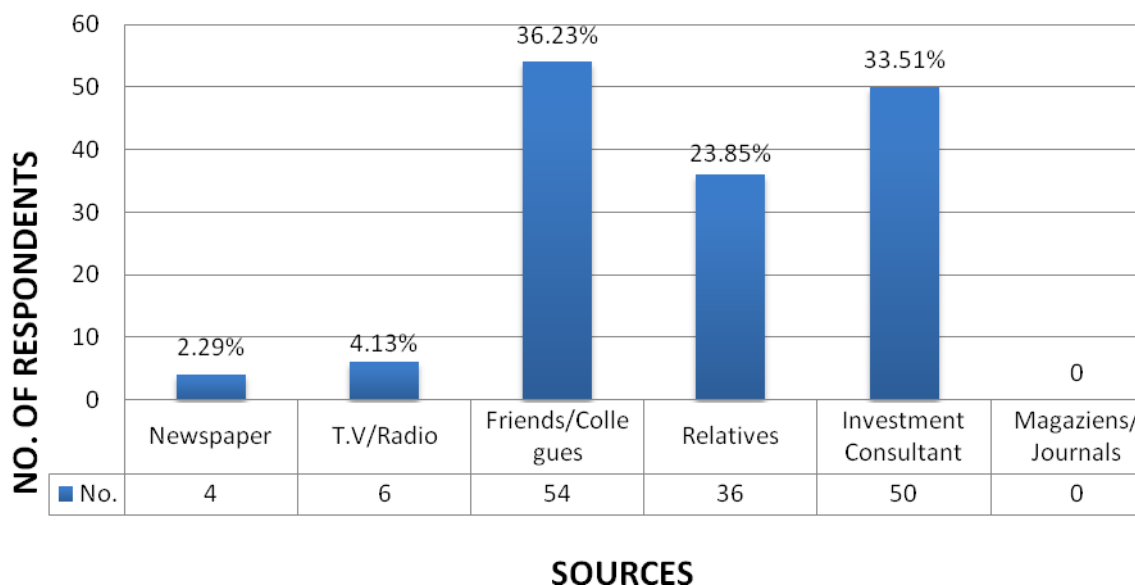
The **Table B** shows that out of 150 respondents 26 were from the age group of 18-30, 47 were from the age group of 31-45, 65 belonged to the age group of 46-60 and 12 belonged to the age group of 61 and above. 4.7% of the respondents had no formal education, 37.3% had pursued their primary education, and 27.3% had completed their 10th grade, 14% had completed P.U.C and 14% had completed graduation and only 2.7% did Masters. 70% of the respondents were owners, 8% of them were partners, 20% were employees and only 2% were workers. Experience profile of the respondents shows that 14 of them are experienced for less than 2 year. 16 have experience between 2 to 5 years. 23 of the respondents have experience between 5 to 10 years and majority of them i.e. 97 have more than 10 years of experience. Savings of 92 of the respondents was between 5000&10000, 48 had savings between 10000&20000, 8 had savings between 20000&30000 and only 2 had savings above 30000.

Table 2: Proportion of investment out of savings in production and service sector (Savings: Investment)

Sector \ Ratio	90:10	80:20	70:30	60:40
Production	66	8	0	1
Service	67	8	0	0

Source: Primary data

Interpretation: The above table shows the proportion of savings and investment. Here in production sector 66 respondents invest 10% of their savings and, 8 respondents invest 20% of their savings and only 1 respondent invest 40% of the savings. In service sector 67 respondents invest 10% of their savings, 8 respondents invest 20% of their savings.

Figure 1: Sources of investment information of the respondents

Source: Primary data

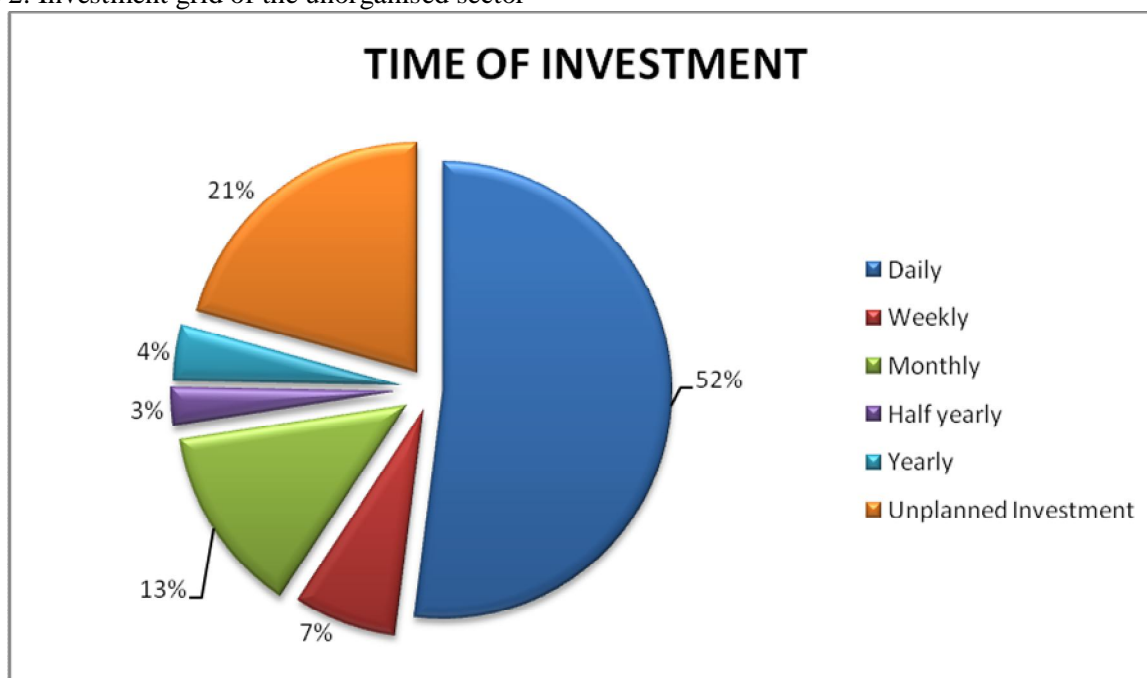
Figure 1 clearly indicates that based on all the sources mentioned, friends/colleagues were mentioned 36.23% of the time as the source of investment information, followed closely by investment consultants at 33.51%. 23.85% of the respondents said that relatives are their source of information. T.V/ radio and newspapers are considered as source of investment information by only 4.13% and 2.29% respectively.

Table 3: Investment avenues of the respondents

INVESTMENT AVENUES	PERCENTAGE
Gold/Silver	15
Real-estate	4
Mutual Funds	1
FD/RD	13
POMIS	5
Cooperative Society	11
PPF	0.3
Pigmy	37
SCSS	1.5
Debts	1.5
Equity	1
Self Help Group	9.7
TOTAL	100

Source: Primary data

Interpretation: Table 3 indicates that pigmy being 37% is the main investment avenue of the unorganised sector followed by gold/silver at 15%. 13% of the respondents choose Fixed Deposit/Recurring Deposit (FD/RD) as the source of investment for them and 11% said cooperative society is their source of investment followed by Self Help Group at 9.7%, Post Office Monthly Savings Scheme (POMSS) at 5%, real-estate at 4%, Senior Citizen Savings Scheme (SCSS) at 1.5%, debts at 1.5%, equity at 1%, mutual funds at 1% and Public Provident Fund (PPF) being the least at 0.3%.

Figure 2: Investment grid of the unorganised sector


Source: Primary data

Figure 2 indicates that 52% of the respondents invest daily followed by 21% of them saying unplanned investment. 13% of the respondents invest monthly, 7% of the respondents invest weekly, 4% of the respondents invest yearly and only 3% of them invest half yearly.

Table 4: Opinion of the respondents of unorganised sector on the following statements

STATEMENTS		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
S1	Family members influence investment decisions.	33	18	3	13	83	150
S2	Money is borrowed from other sources to make investment.	0	15	3	35	97	150

S3	Agents have convinced to opt for various investment avenues	28	7	5	25	85	150
S4	An additional income will get invested.	15	8	27	59	41	150
S5	No withdrawal of the money invested before its maturity.	68	32	11	29	10	150
S6	Money is not invested in a single investment option.	26	13	58	37	16	150

Source: Primary data

INTERPRETATION

The Likert's Scale provides the following interpretation for the above data. In S1, 33 respondents strongly agree that family members do influence their investment decisions but 83 of them strong disagree. S2 states that money is borrowed from others for making investment and 97 respondents have strongly disagreed to this while 15 have agreed to this. Opinion of respondents to the S3 clearly states that 85 of them have strongly disagreed that agents have convinced them to opt for various investment avenues and only 28 of them have strongly agreed. The frequency of disagreement for S4 is relatively very high i.e. 59 when compared to frequency of agreement i.e. 8. 68 respondents have strongly agreed that they never made pre-mature withdrawal of money invested, whereas 10 of them have strongly disagreed to this. For S6, 26 of the respondent have strongly agreed that they do not invest in a single investment option and only 16 have strongly disagreed that they do not invest in a single option.

Table 5: Problems faced by the unorganised sector while investing

PROBLEMS	FREQUENCY	PERCENTAGE
Long term	3	2
Less awareness	22	14.67
Low return	6	4
No guaranteed min. return	3	2
No literacy	5	3.33
Low income	55	36.66
Trust factor	29	19.33
Loan	19	12.67
More expenses	4	2.67
No time	2	1.33
No interest	1	0.67
No problem	1	0.67
TOTAL	150	100

Source: Primary data

The above table shows that out of all the problems mentioned, low income was mentioned 36.66% of the times hence it is the main problem faced by the unorganised sector while investing. Followed by it is the trust factor at 19.33%, less awareness at 14.67%, loan at 12.67%, low return at 4%, no literacy at 3.33%, more expenses at 2.67%, long term at 2%, no guaranteed minimum return at 2%, no time at 1.33%, no interest and no problem both being at 0.67% respectively.

Table 6: Necessity of investment for life

	FREQUENCY		PERCENTAGE	
	Yes	No	Yes	No
Is investment necessary for life	137	13	91.3%	8.7%

Source: Primary data

The above table clearly indicates that 91.3% of the respondents think that investment is necessary for life and only 8.7% of the people think that investment is not necessary for life.

TESTING OF HYPOTHESIS 1

H₀: There is no significant relation between gender and awareness level among the unorganised sector

H₁: There is significant relation between gender and awareness level among the unorganised sector

Gender	Aware	Unaware	Total
Male	74	4	78
Female	56	16	72
Total	130	20	150

O_{ij}	E_{ij}	$O_{ij} - E_{ij}$	$(O_{ij} - E_{ij})^2$	$\frac{(O_{ij} - E_{ij})^2}{E_{ij}}$
74	67.6	6.4	40.96	0.606
4	10.4	-6.4	40.96	3.938
56	62.4	-6.4	40.96	0.656
16	9.6	6.4	40.96	4.267
$\chi^2 = \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$				9.467

Source: Field survey data

The degree of freedom is 1

The level of significance α is 5%

Calculated value	Critical value
9.467	3.84

Since **chi-square** = 9.467 is more than 3.84, **H₀** is rejected.

Interpretation: The chi-square analysis shows that the null hypothesis has been rejected. Hence the alternative hypothesis, "There is significant relation between gender and awareness level among the unorganised sector" has been accepted.

TESTING OF HYPOTHESIS 2

H₀: Savings and preference of investment avenues are independent

H₁: Savings and preference of investment avenues are dependent

The degree of freedom is 1

The level of significance α is 5%

Calculated value	Critical value
14.38	11.1

Since **chi-square** = 14.38 is more than 11.1, **H₀** is rejected.

Interpretation: Here alternative hypothesis **H₁** is accepted; therefore savings and preference of investment avenues are dependent.

TESTING OF HYPOTHESIS 3

H₀: There is no significant relation between age and factors which are considered while investing by unorganised sector

H₁: There is significant relation between age and factors which are considered while investing by unorganised sector

Factors Age	To earn constant returns	To reduce future risk	For future events	Others (Retirement, Gain wealth, To reduce tax)	Total
18-30	7	7	8	6	28
31-45	8	15	18	6	47

46 and above	10	20	29	16	75
Total	25	42	55	28	150

Source: Field survey data

The degree of freedom is 1

The level of significance α is 5%

Calculated value	Critical value
3.917	12.6

Since **chi-square** = 3.917 is less than 12.6, H_0 is accepted.

Interpretation: The chi-square analysis shows that the null hypothesis, “There is no significant relation between age and factors which are considered while investing by unorganised sector” has been accepted. Hence the alternative hypothesis has been rejected.

After the survey and implementation of chi-square test, it was found that more than three- fourth of the respondents are aware of the investment avenues available yet are not knowledgeable enough to choose the right investment avenue for themselves. So out of all the investment avenues Pigmy was the most sought after Investment Avenue.

The chi- square testing proved that there is relation between gender and awareness of respondents in the unorganised sector. Secondly, it was proved that the preferences of investment avenues do depend on savings of the respondents and the age and factors influencing investment are independent.

This study revealed that low income is the main reason why the investment of unorganised sector is so low. Along with that the researchers also came to know that the recent blow of AgriGold scam has left many investors of unorganised sector questioning their investment decisions.

CONCLUSION

The present study endeavoured to give a look on perception of investors of unorganised sector towards investment avenues in India. If the government of India takes an initiative to make the people of unorganised sector more familiar, knowledgeable and teaches them about all the precautionary measures that they should take before investing, may be then their contribution towards investment may rise and they may make the proper investment decision which will be beneficial to both the people of the unorganised sector as well as our country.

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- <https://www.geographyandyou.com/economy/.../the-unorganised-workforce-of-india/>
- https://www.researchgate.net/...Investor...towards_investment_avenues/.../3+INVEST

ENERGY MANAGEMENT IN HOME AUTOMATION BY USING GSM TECHNOLOGY

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ABSTRACT

In this paper presents the renewable energy sources based energy management in home automation by using GSM technology is discussed. The hybrid electric system that combines wind energy and solar energy (Photovoltaic) technologies offers several advantages over either single system. Many hybrid systems are stand-alone systems, which operate "off-grid" not connected to an electricity distribution system. If the batteries run low, the engine generator can provide power and recharge the batteries. Nowadays, the remote Home Automation turns out to be more and more significant and appealing. It improves the value of our lives by automating various electrical appliances or instruments. This paper describes GSM (Global System Messaging) based secured device control system using mobile phones. This paper presents GSM based Device Control System mobile application developed using android smart phones. The Global System for Mobile Communication (GSM) network is almost everywhere. The preface of the Global System for Mobile Communication (GSM) and mainly the use of cellular phones got the novelty of distance communication at remote location. This paper makes use of this ability for remote control of instruments and appliances.

1. INTRODUCTION

Demand for clean and sustainable energy sources has dramatically increased during the past few years with growing population and industrial development. For a long time, fossil Fuels have been used as the major source of generating electrical energy. Environmental consequences of these resources have made it necessary to benefit from clean energy sources, Such as wind and solar. Therefore, distributed generation (DG) Systems based on renewable energy sources have attracted the Researchers' attention. The DG systems include photovoltaic (PV) cells, fuel cells and wind power. However, the outputs Voltages of these sources are not large enough for connecting to ac utility voltage. High step-up converters are a suitable solution for the aforementioned problem. Each PV panel can be connected to a particular high step-up converter. Therefore, each panel can be controlled independently. These converters boost the low-input voltages (12–20 V) to a high-voltage level (250–300 V). The main features of high step-up converters are their large conversion ratio, high efficiency, and small size. Theoretically, conventional boost converters can achieve high-voltage gain with an extremely high duty ratio.

2. ENERGY MANAGEMENT SYSTEM

A typical automated EMS is shown in Fig. 1. The objective of the EMS is to generate suitable set points for all the sources and storages in such a way that economically optimised power dispatch will be maintained to fulfil certain load demand. Because wind power or solar power always change with the variation of wind speed and direction, solar irradiation and circumstance temperature, generation forecast as well as some fast online algorithms are used to define the energy availability and, finally, to define the optimised power dispatch signals to the loads. The use of energy storage requires an optimisation scheme that considers the time-integral part of the load flow. Therefore the energy management has to perform energy scheduling a single day or multiple days ahead. An intelligent energy management system is thus required which enables short term energy allocation scheduling at minimised costs based on power generation and load demand. The EMS optimises the operation according to the prices and the forecasted generation of the DG sources, and the forecasted loads, and sends signals to the controllers of the DG sources to be committed, and if applicable, to determine the level of their production.

3. BLOCK DIAGRAM OF ENERGY MANAGEMENT IN HOME AUTOMATION

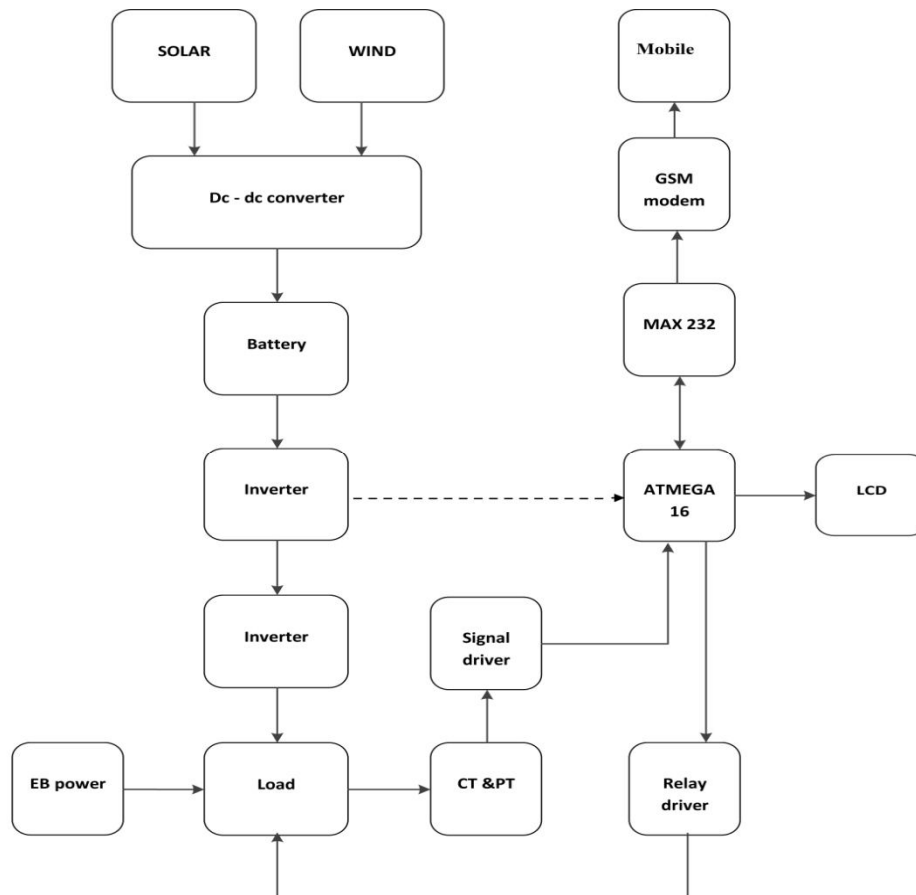


Fig-1: Typical block diagram of energy management in home automation

4. IMPLEMENTATION OF PROPOSED WORK FOR ENERGY MANAGEMENT IN HOME AUTOMATION USING GSM TECHNOLOGY

Then secondly, user has to add logic and actions with plain language instruction blocks that snaps together like a child's building blocks. The app inventor for android is an open-source web application firstly given by Google, and at the present sustained by the Massachusetts Institute of Technology (MIT). It permits beginner to create mobile application for the android based smart phones without writing programming codes. The app inventor provides a graphical user interface, which allows users to drag-and-drop visual objects to develop an application that can run on Android based smart phones. GSM (Global System for Mobile Communications, originally Group Special Mobile), is a standard developed by the European Telecommunications Standards Institute (ETSI) to describe protocols for second generation (2G) digital cellular networks used by mobile phones. It is the de facto global standard for mobile communications with over 90% market share, and is available in over 219 countries and territories. The GSM standard was developed as a replacement for first generation (1G) analogy cellular networks, and originally described a digital, circuit-switched network optimized for full duplex voice telephony. This was expanded over time to include data communications, first by circuit-switched transport, then packet data transport via GPRS (General Packet Radio Services) and EDGE (Enhanced Data rates for GSM Evolution or EGPRS). Subsequently, the 3GPP developed third generation (3G) UMTS standards followed by fourth generation (4G) LTE Advanced standards, which are not part of the ETSI GSM standard. It comprises of Arduino board with microcontroller ATMEGA16, GSM Modem, octal peripheral driver array ULN2803, Relay and a few discrete components. Here in this circuit, microcontroller ATMEGA16 is works as main program me switching unit which receives data from GSM Modem and transferred appropriate program data to ULN2803 for operating relay ON and OFF. Here the proposed energy management in home automation using GSM technology circuit diagram is presented in fig.2. The working output voltages and on/off status are mentioned in table.1. The minimum required operating voltage will be set for converters operations. The first preference will be given as RES. Then there is no EB power will be or the minimum operating voltage level is not to be reached, at that condition the stored battery power will be utilized. Other remaining times of both the EB and RES are available the preference will be given as RES and the remaining excessive power will be stored in battery. There are several steps involved in implementing the hardware which can be represented in the block diagram. Here 5 V DC supply is given to Atmega 16 μ -

controller and the Timer circuit, the output of the μ -controller is fed to interfacing circuit, than to the driver circuit, which isolate the high voltage of the inverter circuit from the rest of low voltage TTL and other low voltage components. The output of the driver and the interface circuit is fed to the gate of each switching device. Each driver is excited by independent power supply for isolation purpose. The microcontroller needs to supply signals to a controller it's supplied from dc source using voltage regulator. Solar and wind source stored in the battery and stored energy used to drive the load using MOSFET. EB side power source drive the same load using relay switch. We can control the load using GSM modem like SMS concept.

Table.1. Output voltage and ON/OFF status

Power Sources Availability	Voltage outputs (V)			Status (ON/OFF)		
EB (or) Required voltage from RES	EB	PV	WT	EB	PV	WT
	230	-	-	1	0	0
	-	60-70	20-30	0	1	1
No EB supply (or) Required voltage from RES	-	60-70	20-30	0	1	1

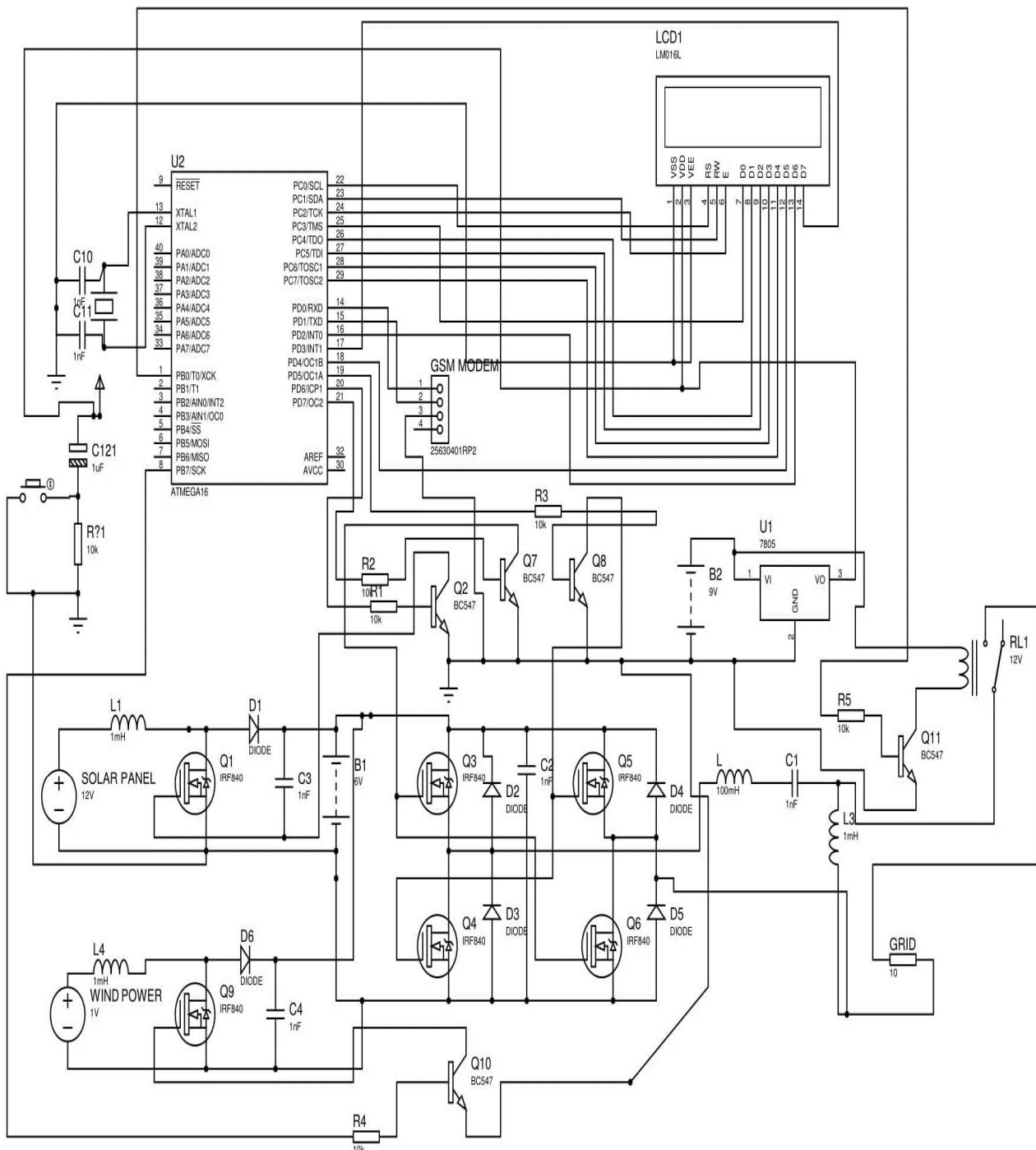


Fig-2: Circuit diagram for energy management in home automation by using GSM technology

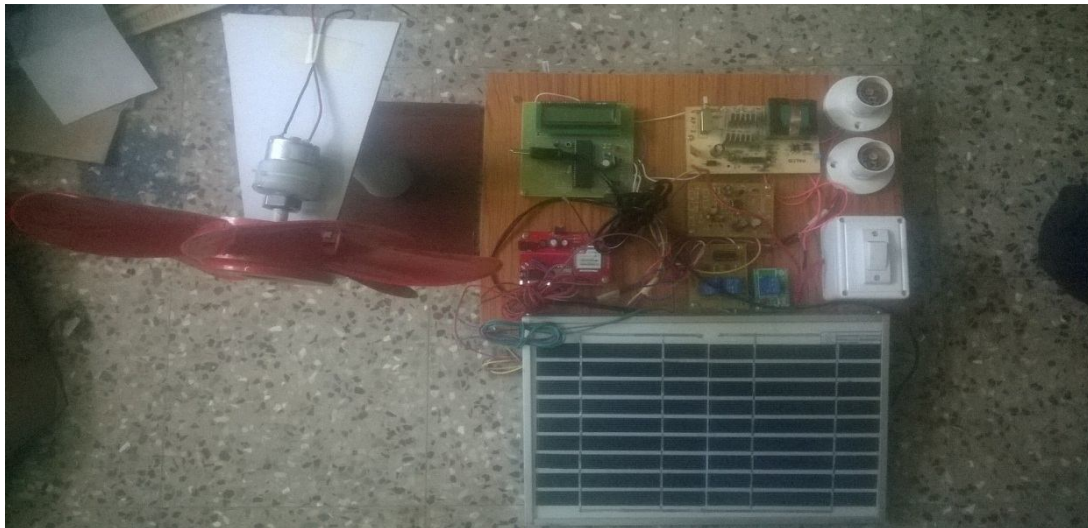


Fig-3: Hardware implementation of proposed work

CONCLUSION

The PV generation system has been widely deployed in the residential sector to save energy cost; however, it is not monitored in detail or managed in a user friendly manner in many cases. Hence, it is required that the PV monitoring system in residential areas provide both detailed monitoring of each PV module and a user-friendly management scheme. It also needs to be provided at a low price for wide deployment in residential areas. If this proposed PV monitoring system is installed in residential areas, this scheme will contribute to reducing energy cost by maintaining the performance of a PV generation system. In this works concludes the following points,

1. Energy management is to be done by using optimal renewable energy resources
2. Home automation is done by using GSM technology

From the conclusion the process of energy management in home automation by using GSM technology is presented efficiently and successfully.

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INDIA AND UNITED NATIONS SECURITY COUNCIL REFORMS

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“The U.N. Security Council reform, being debated since two decades is too long overdue and the necessary expansion must be made considering how much the world has changed.”

-Ban Ki Moon (Former, UN General Secretary)

ABSTRACT

“The International Institutions formed to meet the challenges of the post-WWII world are struggling to cope with the dynamics of the post-Soviet Union world order and other changing powers both in terms of economy and politics. During the last 30-35 years the world has seen massive changes. Disintegration of USSR, unilateralism of USA and in between the rise of multilateral institutions such as BRICS, NAM and a number of other institutions gaining their respective importance for playing significant role towards the world society. Now developing nations, including India, play a larger role in both the international economy and politics. But these changes are not reflected in the UN, where all critical decisions are still being taken by the veto-wielding permanent members of the Security Council. Besides, the geopolitical rivalry among the permanent members has prevented the UNSC from coming up with effective mechanisms to deal with global crises. The United Nation Security Council has emerged as the key arena and barometer for evaluating the promise and progress of accommodating new, rising powers in the international system. The case of India provides one of the best examples of a rising power coming to terms with its increased power role and expectation of itself and of other powers, great and small, in negotiating its place in the reformed Council as a permanent member. This paper begins by mapping its historical association and varied interests vis-a-vis the Security Council and its perspectives on various strands to reform the Council and finally, Indian strategies over the years to gain a permanent seat in the reformed Council. This paper concludes that only a pragmatic, real politic approach that involves hard power bargaining would lead India to achieve its decades old aspiration to sit at the global high table.”

Keywords: Reform Agenda, Security Council, Membership, Expected impact, Relevance of UNSC, Peace and Security.

INTRODUCTION

In a truly “historic” move to reforming global governance in the arena of international peace and security, the 193 member-United Nations adopted a consensus resolution in its 69th General Assembly on September 14, 2015 to move from Inter-Governmental Negotiations (IGN) to Text-Based Negotiations (TBN) process for reforming the United Nations Security Council. Welcoming this General Assembly Decision 80/560 and calling it a “significant development,” India’s Ministry of External Affairs (2015) struck a very optimistic note: “We look forward to early commencement of text-based negotiations with a view to securing concrete outcomes during the 70th Session of the United Nations General Assembly. We call upon all Member States to constructively engage in this process so that the long pending reform of the UN Security Council can be achieved so as to equip the Council to more effectively address the global challenges.” In the Indian eyes, “no reform of the United Nations (UN) is complete without the composition of the Security Council changing to reflect contemporary realities of the twenty-first century. This requires expansion in the membership of the Security Council in both the permanent and non-permanent categories.” This Indian quest for permanent membership to the Security Council, what India’s Prime Minister Manmohan Singh once rightly described as “an essay in persuasion” lies at the heart of repeated Indian pleas for reforming the UN, the only existing universal organization of global governance. This paper posits some fundamental questions: what have been the Indian experiences vis-à-vis the Council; what drives the Indian interests in pursuing the permanent seat in the Council; what perspectives and positions has India articulated on the proposed reforms; what bilateral and multilateral strategies has India put in place in pursuance of its Council objectives; and lastly, what roadblocks does India need to surmount before it achieves its objective of a permanent Council seat. Reflecting what Teresita C. Schaffer calls India’s multilateral “personality,” this paper seeks to locate current Indian perspectives and positions on the entire issue of reforming the Security Council.¹ It begins with first delineating the nature and role of the Security Council itself and the Indian experiences therein of serving two-year seven terms as a non-permanent member of the Security Council. It then examines the multi-layered calculus in pursuing a permanent seat in the reformed Council by looking at its historic role in the UN system, its intrinsic value and its great power ambitions. Further, Indian perspectives on the five sets of issues marked by the

General Assembly and Indian strategies, viz., its diplomacy, are discussed. This paper ends by identifying serious roadblocks to India's ambitions and concludes that India has to display more pragmatism, more real politics to realize its aspiration to be a permanent member of the Security Council—the global high-power table.

India has been actively pursuing its quest to be included in the reformed United Nations Security Council for many years. The argument of including new members is that UNSC has to acknowledge the current geopolitical realities which are very different from the time when UNSC was formed. The current permanent members of the Security Council are the five nations that were made permanent members in the carter when the United Nations was founded. These countries were the victors in the World War II and China were their allies.² Recently the nearly 193 member countries of the United Nations have agreed that over the next near, they will negotiate the working of a document that will call for reforming the Security Council, the top decision-making body, which has 15 members. This has led to the question that is India close to getting into the UN Security Council. But first we should deal with one more important question which is, Is our demand to become UNSC permanent member is legitimate?

WHY UNSC REFORM NEEDED ?

The world is changing, but not the United Nations Security Council (UNSC). Today the geo-political and economic scenario of world is quite different from the situation of 1945 when the UNSC was established by 51 countries 70 years ago. Though it is felt for a long time that the present structure is flawed, however, to reach the consensus remains out of reach. The reforms are needed due to following as more number of nations being decolonized and there are sharp contrast between the number of seats and the total number of member states.

- Reform is needed to remove the—Democracy Deficitl.
- It has failed to tackle the recent crisis of Syria, Gaza and Ukraine.
- Need to make it efficient, effective, credible and a legitimate body.

The three key areas of reform can be summarized as below:

- Equitable Representation: Presently there are 10 non-permanent and 5 permanent members in the UNSC. These are not representing the world in a balanced manner, therefore, it is the need of the present day to accommodate various regions e.g. African, Asia Pacific, Latin America etc. in the UNSC.
- Categories of membership: Member states that have demonstrated credibility and capacity to shoulder the responsibilities of the principal UN organ should have a presence to ensure the legitimacy of the council.
- Veto Reforms: The power of veto is frequently cited as a major problem as the P5 members often influence the resolutions making those countries to suffer, which rather need a platform to grow. In this context, the veto must be abolished and by that time the use of veto should be limited in case of vital national security issues.

AIM AND OBJECTIVES

The main purpose of this research paper is to study the structure of the United Nations Security Council's flagship body. This paper is based on the following objectives:

- To know how it is possible to improve the structure of the UN Security Council.
- To know why ultimately the world's super powers are opposing India's permanent membership in the UN Security Council.
- To study the key committees of United Nations General Secretaries for improving the UN Security Council.
- To study the fact that India how can achieve membership of UNSC.
- To know the changes in geopolitical realities since UNSC's formation.
- To know expected impact of India's permanent membership.
- To analyze the relevance of UNSC in contemporary world's situation.
- To study the efforts made to improve the UNSC.

RESEARCH METHODOLOGY

To gather the information about the above objectives secondary data is used. The research paper, journals, magazines and newspaper are studied to get the relevant information about the topic. This paper is based on the conceptual nature. Every effort has made for getting the relevant information about the concept.

INDIA'S BID TO PERMANENT MEMBERSHIP OF UNSC

The origins of the Indian interests in the Security Council can be traced as back to the founding of the UN itself when Mahatma Gandhi felt that India, then including Pakistan and Bangladesh, should become a veto-wielding member of the Security Council. But the leadership precedence for independence and managing the difficult, bloody partition followed by the India-Pakistan conflict on Kashmir moved their attention and interests away from the possible opportunity of a seat. Later, India's first Prime Minister Jawaharlal Nehru shied away from the highly debatable offer to join the Security Council by both the superpowers, the US and the then Soviet Union in 1950 and in 1955 respectively, keeping in mind the emerging Cold war calculus and steadfastly refused to join at the expense of China. Specifically acknowledging India's rightful claim to a permanent seat,³ Nehru wrote: "It would do us little good and it would bring a great deal of trouble in its train....India, because of many factors is certainly entitled to a permanent seat in the Security Council. But we are not going in at the cost of China. The Indian calculus on permanent membership of Security Council flow broadly from a mix of, not necessarily hierarchical, three streams, viz., India's historic association with the UN system itself since its independence, India's intrinsic value and place in contemporary international politics and its ambitions as a traditional great power in Asia and

1. India in the UN system

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The Indian calculus on permanent membership of Security Council flow broadly from a mix of, not necessarily hierarchical, three streams, viz., India's historic association with the UN system itself since its independence, India's intrinsic value and place in contemporary international politics and its ambitions as a traditional great power in Asia and beyond. In pursuance of its claims to the Council seat, India points out its rich history of consistent international, multilateral posture of cooperation and fraternity, especially when it comes to the UN. The origins of Indian multilateral engagement dates back to 28 June 1919 when India signed the Treaty of Versailles that ended the First World War and created the League of Nations, the precursor of the UN, wherein India, too, was a member. India, also the original member of the UN that signed the Declaration by the UN at Washington on 1 January 1942, participated in the historic UN Conference of International Organization at San Francisco from 25 April to 26 June, 1945.⁶

India, since its independence and even before that, has been an active participant in all initiatives undertaken by the UN and the various UN organs including the various discussions on the agenda for Peace and the Agenda for Development, the Millennium Development Goals, and various UN summits, including most importantly on climate change.⁷ India also contributed by being instrumental in establishing the G-77 of developing states at the UN, other than supporting the establishment of various bodies such as the UNICEF on a permanent basis, the UNDP, the UNEP, and the restructuring of the economic and social fields of the UN and the UN Development Fund. India also makes a strong case by highlighting its regular, significant contributions to the UN. In the arena of peacekeeping, India has remained the largest cumulative contributor of UN Peacekeeping troops with around 180,000 troops since the 1950s. Currently, around 7,700 Indian peacekeepers have been deployed in 13 missions (out of the total of 16) in 11 countries.⁸

Today, most significantly, India has almost twice the number of peacekeepers deployed in the ground as do China, France, Russia, the United Kingdom and the United States combined—also known as the P5, the five countries that wield veto power at the Council. In terms of financial contributions to the UN, India with US\$20.46 million ranks 23rd in the list of contributors. India had emphasised on this back in 1993: "...not just

the financial contribution in absolute terms, but also in relative terms. For a country with low per capita income, assessed contribution as per the United Nations scale may entail proportionately higher sacrifice.⁹ The record of timely payment also should be taken into account.” Adding further, India asserted: “The financial contribution does not remain static forever, and the crucial issue is the readiness to fulfill the obligations and not the quantum of payment at point in time. The point is India could emerge before long, if its economy performs well, as a sizeable contributor to UN budget.”

Indian strategic interest in the Council seat has also been shaped by its history of interacting with the Security Council. In the early years of its independence during its armed conflict with Pakistan on Kashmir, India paid the price for being “idealistic”. India took the Kashmir issue to the had to battle the hard real politics of the Cold War years that led the UN interventions over the Kashmir dispute.¹⁰ To prevent this negative outcome again, it is hoped that an Indian presence at the Security Council will ensure the nation’s interest are not sacrificed at the altar of great power politics. Most importantly, it will stall any possible intervention by China, a permanent member at the behest of its ally Pakistan.

Indian interests in the Security Council also flow from the many, larger foreign policy debates in India on whether it will be a status quo power that accepts liberal norms and positions itself as a ‘responsible stakeholder’ in the international system or a revisionist power that seeks to redefine the norms of international engagement. Many pundits agree that India would be moderately revisionist, in that it will seek to adjust international norms and frameworks that suits its global vision seeking to overthrow that current international system.

In addition, India has always seen itself as a champion, a ‘moralistic force’ of the so called Third World, the developing states. Former Secretary General Kofi Annan has been quoted as India has been one of the most significant votaries of shaping the UN agenda on behalf developing world. At his speech in New Delhi, Annan stated: “Indians have better understood than many other peoples that the goals of the ‘larger freedom’ that which include development, security and human rights are not alternatives. They have been single-mindedly pursuing larger freedom pluralist democracy.”

2. India’s Intrinsic Value

India’s Ministry of External Affairs has clearly articulated India’s “legitimate” candidature to be a permanent member of the UN Security Council. It declares: By any objective criteria, such as population, territorial size, GDP, economic potential, civilizational legacy, cultural diversity, political system and past and ongoing contributions to the activities of the UN— especially to UN peacekeeping operations—India is eminently qualified for permanent membership.” Going further, it says, most importantly, “India has affirmed its willingness and capacity to shoulder the responsibilities of permanent membership.

At the outset itself, demography remains the primary reason why India should be in the Council. India, with its population at 1.25 billion now, is the second most populous country in the world comprising almost one-fifth of humanity.¹¹ This basic fact itself warrants Indian inclusion and representation in the Security Council. For India, moreover “population represents both an expression of the principle of democracy and an element of power. With increasing emphasis on the principle of democracy at the national level, there is a need for extending the principle to the international level also.”

India’s rising economic stature globally has added to Indian claims as well. India is now the fastest-growing major economy in the world, and Asia’s third largest. India’s real GDP growth, as its 2017 Economic Survey predicts, will remain between 6.75 percent and 7.5 percent despite international upheavals like growing oil prices, Brexit, growing protectionism and trade-related tensions between major economies. India’s leading position in software and its IT-enabled services making it a global technology giant add to its increasing economic and trade footprint across the world. India is now counted amongst the most influential players in economic organisations like the WTO, BRICS and the G-20.

India’s newly acquired status as a Nuclear Weapons State (NWS) in May 1998 also makes it a natural claimant as a permanent member similar to the existing permanent members who are all NWS. Though India has not been accorded a de jure recognition of this by the Nuclear Non-Proliferation Treaty (NPT) of 1968, India now stands recognised as a de facto NWS due to the nuclear deal signed by India and the United States in 2005 and the Nuclear Suppliers Group waiver in 2008 to nuclear transfers for India despite not being a NPT signatory. On the negative side, it is argued by critics that India has still not signed the NPT, had rejected the CTBT in 1996 and in fact, was the target of unanimous Security

Council Resolution 1172 after it conducted nuclear tests in 1998.¹² But India's nuclear diplomacy after the May 1998 tests successfully turned India from a pariah state to being increasingly part of the non-proliferation regime.

3. India's Great Power Ambitions

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Foremost in Indian calculus, however, lies the Indian aspiration of the institutionalized status the permanent seat in the Security Council would confer on India right away. Being a 'Pen holder' as the permanent member of the Security Council, India would similarly assume the mantle of international peace and security decision-making. India sees itself carrying the necessary abilities actual and potential, which entitles it to a permanent seat at the Council. Further, the seat on the high table, at the UN's premier, powerful body would provide it the much needed leverage to expand its global geo-political and geo-economic clout. It would serve as an equalizer to China, its rival and an emerging hegemony in Asia, and an ever increasing strategic and Security concern in its immediate neighbourhood and beyond. India has always seen itself as a democratic alternative to the authoritarian China.¹⁶ India's millennia old civilizational existence also demands it to be at the top of the international hierarchy of states.

As India's international profile and capabilities rise due to its ever expanding global and regional footprint in diverse areas such as policies, development, economics, culture and science and technology, India wishes to shift its international position from a rule taker.¹⁷ The Indian attempts at joining various regimes like the ongoing, high-pitched campaign to join the NSG amply indicate that India is no more satisfied with being either the target or a mere follower of various international norms and rules, and now wants to shape the align them to suit Indian ideas and interests.

In conclusion, and most significantly, Indian hopes significantly rest on an acknowledgement by the UN itself of the need to expand the UNSC. In an interview to The Guardian (2015), former UN Secretary General Kofi Annan said that the Security Council must either reform or risk becoming increasingly irrelevant: "If we don't change the council, we risk a situation where the primacy of the council may be challenged by some of the new emerging countries."

HISTORY OF UNITED NATIONS SECURITY COUNCIL REFORM

The history of reform The Security Council initially consisted of 11 members—five permanent and six non-permanent. The permanent members were the USA, the UK, France, China, and the USSR, with the last-named two seats transferred to the People's Republic of China and the Russian Federation in 1971 and 1991 respectively. The non-permanent seats are rotated among members of the UN, with annual elections held among half of the non-permanent members at a time to ensure an equitable geographical representation.

The global decolonization movement from the mid-20th century onwards increased pressures for reforming the Council. In December 1963, the General Assembly voted to increase the number of non-permanent Security Council members from six to ten, which meant that resolutions on substantive issues now needed to be passed by a qualified majority of nine members, including permanent members.¹⁸ This proposal was duly ratified by two thirds of UN members, including the permanent members of the Council. This increase in the number of non-permanent Security Council members had the effect of reducing the power of their individual votes, as it increased the number of possible favourable votes which permanent members could count on to pass a resolution. By facilitating the formation of winning coalitions, it reduced the probability of each non-permanent member providing the decisive vote. Increasing the real voting power of non-permanent members would need further increasing the required majority—otherwise, a seat on the Council without veto power would only bring prestige, information, and a degree of participation in decisions.

After the Cold War, developing countries as well as Japan and Germany, which were major contributors to peacekeeping operations as well as recognized economic powers, began to demand greater participation in Security Council decisions. In 1993, following postponements in considering this issue, the General Assembly established the 'Open ended Working Group on the Question of Equitable Representation on and Increase in the Membership of the Security Council and Other Matters Related to the Security Council', requiring it to report to the Assembly.¹⁹ As the committee's name attests, its aim was to consider two overarching issues: the composition of the Security Council, and the workings of its decision-making process. Table 1 reflects these sets of issues.

This group became known as the 'never-ending working group' because of the length of time it took to reach an agreement. Over the years, numerous issues were discussed, including the composition of the Council, the number of new permanent and/ or non-permanent seats, new categories of members, the distribution of these seats by geography or by financial contribution, the periods in which these updated issues should be dealt with, the majority of votes required in case of expansion, the veto rights of current permanent members, and possible new permanent members.²⁰ These issues were debated and negotiated in an attempt to create a consensus, or near-consensus, on a proposal that could be submitted to a General Assembly vote.

Table-1: Issues addressed by the Working Group on the Security Council

Group-1 Numbers of members and related questions	Group-2 Working method and transparency
UNSC expansion: determining which categories will be expanded (non-permanent and permanent, including questions about prerogatives, powers, and extent of the enlargement)	Improving the UNSC's transparency and working methods
Decision-making, including the maintenance, limitation or abolition of the veto	Participation of non-permanent members in UNSC work
Periodic review of the enlargement	Relationship between the UNSC and UNGA and other organs

Source: UN General Assembly (2004)

Besides the working group, important UN figures – including the president of the General Assembly in 1997, Razali Ismail, and the UN general-secretary, Kofi Annan—tried to advance the debates. Although a proposal formulated by Ismail was informally approved by two-thirds of Assembly members, when it was presented to the working group, few delegates ran the risk of publicly approving it (Luck 2006).

In 2004, at Annan's instigation, the UN Secretariat appointed a High-Level Panel on Threats, Challenges and Change. It found that enlarging the Security Council had become essential, and developed two reform proposals.²¹ Model A involved six new permanent seats without veto powers, and two new non-permanent seats. Model B involved one new non-permanent seat and eight semi-permanent seats with four-year terms, which were renewable. Meanwhile, some groupings had begun to form within the open working group, and develop their own proposals. The G-4, comprising Brazil, Germany, India and Japan, all interested in obtaining permanent seats on the Council, proposed the expansion of permanent members without veto power outlined in table 2.

Table-2: G-4 (Brazil, Germany, India and Japan) proposal: enlarging the Security Council to 25 members

	New permanent member without veto power	New non-permanent members
Africa	2	1
Asia	2	1
East Europe	0	1
Latin America and Caribbean	1	1
Western Europe and other states	1	0
Total	6	4

Source: United Nations General Assembly (2005).

In response to the High Level Panel and the G-4, the Coffee Club, comprising Argentina, Colombia, Mexico, Kenya, Algeria, Italy, Spain, Pakistan and South Korea, adopted a document entitled 'Uniting for Consensus' (which also became the group's name), which favoured broad negotiations. It prepared a proposal that conformed to model B proposed by the High Level Panel without the expansion of permanent seats, but increasing the non-permanent seats from 10 to 20, with the following distribution:

Table-3

	Distribution
Africa	6
Asia	5
East Europe	2
Latin America and the Caribbean	4
Western Europe and other States	3
Total	20

Source: United Nations General Assembly (2005).

Uniting for Consensus proposal: distribution of 20 new non-permanent seats Distribution Africa 6 Asia 5 East Europe 2 Latin America and the Caribbean 4 Western Europe and other States 3 Total 20 Source: United Nations General Assembly. Not satisfied with any of these proposals, the Africa grouping within the working group devised its own: the Ezulwini Consensus in March 2005, and the Sirte Declaration in June the same year. The latter approximates the G-4 proposal, but does not give up veto power to new permanent members.

Table-4: African proposal: enlarging the Security Council to 26 members

	New permanent member without veto power	New non-permanent members
Africa	2	2
Asia	2	1
East Europe	0	1
Latin America and Caribbean	1	1
Western Europe and other states	1	0
Total	6	5

Source: United Nations General Assembly (2006).

Given these differences, the G-4 now needed to persuade the African group to give up veto power, at least temporarily. This suggestion was not well received by regional rival groups to the G-4, and by the permanent members. At the World Summit Outcome document in 2005, the paragraphs about the long-awaited reform were short and evasive.

At the end of the group meetings in 2007, a new group emerged (known as the L-69) which drafted a resolution apparently elaborated by India but supported by Brazil, South Africa and Nigeria. More important than the draft itself were agreements among the IBSA (India, Brazil and South Africa) countries in relation to Security Council reform. Until then, the group had not discussed this subject. IBSA raised the real possibility of bringing a proposal to a vote, breaking the African consensus, and threatening to associate the discussion with a North-South cleavage, which is typical in development issues.²² However, the 2008 General Assembly report stated that no agreement had been reached which could underpin a single Security Council reform proposal, and, even if the working group continued to meet, the practical outcome would be an indefinite postponement of any reforms.

In recent years, the issue has lost momentum, and negotiations have remained contentious, time-consuming and repetitive. In late 2007, countries agreed to establish the Intergovernmental Negotiations Forum, which was due to start functioning in 2009. The Forum took more than a year to draft a text that would serve as the basis for negotiations among facilitators and had repetitive debates. The first four rounds of intergovernmental negotiations reflected the variations among state interests (Islamic Republic of Afghanistan 2009). In May 2010, the members of the Forum finally agreed on a 'negotiating text', prepared by the president of the General Assembly, that integrated 30 proposals received from states and groups of states on five themes distilled from the discussions. In April 2013, in the ninth and tenth rounds of negotiations, a presidential proposal to develop a concise document and establish a High Level Panel did not receive the necessary support in the Forum, with China, Russia and the USA positioning themselves against it.²³

In November 2013, the president of the General Assembly, John W. Ashe, appointed the Afghan representative to the UN, Zahir Tanin, as president of intergovernmental negotiations, and created an advisory group made up of ten representatives of various pressure groups to produce a basis for negotiations. Given the impasse, a group known as Accountability, Coherence and Transparency (ACT), with an interest in reforming the working methods of the Security Council, suggested that meetings about formulating the Council's annual report be separated from meetings about the reform issue. This was mainly aimed at achieving a more detailed and analytical annual report, and seeking greater articulation between the activities of the General Assembly and the Council. In December 2013, the president of Intergovernmental Negotiations produced a report drafted by its Advisory Group, known as the 'Non Paper', which was analyzed and discussed in the first informal Intergovernmental Negotiating Forum meeting of the year.²⁴ However, the deadlock persisted. While the UK, France and the USA as well as the G-4 responded favourably to the 'Non-Paper', Uniting for Consensus as well as African and Arab groups opposed it, and Russia and China expressed reservations.

On 31 July 2015, resulting from the intergovernmental negotiations in 2014, the president of the General Assembly, Sam K. Kutesa, formalized a document summarizing the positioning of states on various aspects of reforming the Assembly. According to Kutesa, the document would serve as a basis for future negotiations. However, in 2015, despite some advances in respect of limiting the veto in cases of mass atrocities, the Security Council reform process remained formally deadlocked.

PERMANENT MEMBER PROPOSALS

One proposed change is to admit more permanent members. The candidates usually mentioned are Brazil, Germany, India, and Japan. They comprise the group of G4 nations, mutually supporting one another's bids for permanent seats. The United Kingdom, France and Russia support G4 membership in the U.N. Security Council. This sort of reform has traditionally been opposed by the Uniting for Consensus group, which is composed primarily of nations who are regional rivals and economic competitors of the G-4. The group is led by China (opposing India), Italy and Spain (opposing Germany), Mexico, Colombia, and Argentina (opposing Brazil), and South Korea (opposing Japan), in addition to Turkey, Indonesia and others. Since 1992, Italy and other members of the group have instead proposed semi-permanent seats or the expansion of the number of temporary seats.²⁵ Most of the leading candidates for permanent membership are regularly elected onto the Security Council by their respective continental groups: Japan was elected for eleven two-year terms, Brazil for ten terms, and Germany for three terms. India has been elected to the council seven times in total, with the most recent successful bid being in 2010 after a gap of almost twenty years since 1991–92.

In 2017, it was reported that the G-4 nations were willing to temporarily forgo veto power if granted a permanent UNSC seat. As of 2013, the current P5 members of the Security Council, along with the G-4, account for eight of the world's ten largest defense budgets, according to SIPRI. They also account for 9 of the 10 largest economies by both nominal GDP and Purchasing Power Parity GDP. India's bid for permanent member of UNSC is now backed by four of the five permanent members, namely France, Russia, United Kingdom and United States. On 15 April 2011, China officially expressed its support for an increased Indian role at the United Nations, without explicitly endorsing India's Security Council ambitions.²⁶ A few months later, China endorsed Indian candidacy as a permanent UNSC member provided that India revokes its support for Japanese candidacy.

As part of the G-4 nations, India is supported by Brazil, Germany, and Japan for the permanent seat. Other countries that explicitly and openly support India for UNSC permanent seat are – Afghanistan, Armenia, Australia, The Bahamas, Bahrain, Bangladesh, Belarus, Belgium, Belize, Benin, Bhutan, Bolivia, Brunei, Bulgaria, Cambodia, Chile, Comoros, Croatia, Cuba, Cyprus, Czech Republic, Denmark, Dominican Republic, Estonia, Ethiopia, Fiji, Finland, Ghana, Greece, Guyana, Hungary,

Iceland, Israel, Jamaica, Laos, Lesotho, Liberia, Libya, Lithuania, Luxembourg, Kazakhstan, Kyrgyzstan, Malawi, Malaysia, Maldives, Malta, Mauritius, Micronesia, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Oman, Palau, Papua, New Guinea, Peru, Poland, Portugal, Rwanda, Qatar, Romania, Serbia, Senegal, Seychelles, Singapore, Sri Lanka, Slovakia, Suriname, Swaziland, Sweden, Syria, Tajikistan, Tanzania, Trinidad and Tobago, Turkey, Tuvalu, Ukraine, United Arab Emirates, Uruguay, Uzbekistan, Venezuela, Vietnam, Zambia and Zimbabwe as a whole, the African Union also supports India's candidacy for permanent member of the UNSC.

INDIAN PERSPECTIVES ON COUNCIL REFORMS

The UN Security Council reforms became an international agenda with the UN General Assembly adopting in 1992 the Resolution 47/62, titled, "The Question of Equitable Representation on and Increase in the Membership of the Security Council." In 1993, the Assembly set up an open ended Working Group that would facilitate a full and frank exchange of views. In its report to the 1994 General Assembly, the Group stated: "the debate was substantive and constructive, clarifying the positions of member states, (but) no conclusions were drawn. While there was convergence of views that the membership of the Security Council should be enlarged, there was also agreement that the scope and nature of such enlargement require further discussion."²⁷ The arguments put forward by the Member States centered on four aspects for making the Council more representative: the future size of the Council, the categories of membership, the criteria of membership, and the veto power. It needs to be recalled that the Security Council reformed as back as 1965 when it increased its non-permanent members from 11 to 15, and increased the necessary votes for the adoption of resolutions from seven to nine. Indian attempts at reforming the Council date as far back as 1979, when India's ambassador to the UN, Brajesh Mishra, along with other NAM countries submitted a draft resolution to the General Assembly calling for an increase in the non-permanent membership from 10 to 14, arguing an increase in the UN membership as the principal reason.²⁸ The 1990s also saw Indian's attempts at pressing for UN reforms. India joined a number of countries in adopting General Assembly Resolution A/RES/47/62, inscribing this item on our agenda for the first time in September 1992.

Calling the 69th UN General Assembly decision of September 2014 "truly historic and path-breaking on several counts," Ashok Mukherjee, India's then Permanent Representative to the UN, clearly put forward Indian thinking on the matter. Three issues were highlighted specifically. First, that the consensus decision was not a technical, but a substantive decision, since it was now adopted through an official formal L document of the UNGA, the A/69/L.92, and the first in the history of the Inter-Governmental Negotiation process. This was "a most positive and unique development" for India as these moved beyond mere statements, compiled texts or summaries. Second, the UN General Assembly decision has formally changed the IGN process to a text-based negotiation. And last, quoting the UN General Assembly President's 31st July 2015 letter that reflected a true mandate, India highlighted that the text attached to the letter "represents a sound basis upon which Member States can engage in text-based negotiations through the next phase of the IGN." India had, in April 2013, called for a conclusion of the IGN process on UNSC reforms by the 70th anniversary of the UN. Hoping that the UN now moves purposefully to conclude the negotiations during the 70th session, India reminded that the World Summit of 2005 had given a unanimous mandate for "early reform" of the Security Council to make it "more broadly representative, efficient and transparent and thus to further enhance its effectiveness and the legitimacy and implementation of its decisions." In order to move the TBN process forward, India has frequently and seriously articulated its positions on diverse aspects of the Security Council reforms.²⁹ Two organizing principles stand out: first, purposeful, result-oriented negotiations and second, parity for the unrepresented and the underrepresented. Five sets of issues have been identified by the General Assembly 62/557 decision on "question of equitable representation on and increase in the membership of the Security Council and related matters": categories of membership; question of veto; regional representation; size of an enlarged council and working methods of the Council; and the relationship between the Council and the General Assembly.

1. Categories of Membership

On the issue of categories of membership, India has argued that an overwhelming majority of Member-States have already supported expansion in both categories. Two largest groups, including Africa with 54 members and L-69 with 42 members and CARICOM, G4 and another 233-Member States including two permanent members, France and UK have supported expansion in both categories. India claims that around 85 percent of total submissions that are part of the text and the annex have supported expansion in both categories.³⁰

India supports increase in both permanent and non-permanent membership of UN Security Council. Making a case that there is an imbalance of influence between the permanent and non-permanent members of the Council, India has called for a “balanced enlargement in both categories.” Herein, India has highlighted the need of Africa to be represented in both categories. This directly challenges the proposed “so called” intermediate models wherein a longer term and immediate re-election are seen as compensations for a permanent membership. India, citing the deliberations held in 1945, pointed out that these models were rejected by an overwhelming majority. India identified a number of reasons for its opposition to an increase in non-permanent category only.³¹ First, the issues raised by the current imbalance between permanent and non-permanent members are not addressed due to lack of checks or balances. Second, the African continent and other developing countries would still not be represented fully in the Council. Importantly, it would mean a new category of members and the addition of new members that fails to make the Council more effective and accountable. According to India, only the addition of elected, new permanent members, which are subject to “stringent review” could provide such an accountability. Siding with the small states, India supported their contention that the chances of the small states to serve at the Council would be reduced as the proposed intermediate models surely enhanced the chances of more resourceful middle powers to contest in both the traditional non-permanent category seat and the “so called long-term seats.”

2. Question of Veto

On the most important question of veto, India’s position is fully aligned with the G-4, L-69 and Africa who have called for the abolition of veto and till it exists, it needs to be provided for all members of the permanent category of the Security Council, which should have all prerogatives and privileges of permanent membership in the permanent category, including the right of veto. The Indian position is not one of quantity, viz. extending it immediately to new permanent members, but talks about quality, viz., of introducing restrictions. India, showing a marked flexibility, has argued that it supports new members with the same responsibilities and obligations as current permanent members as a matter of principle. It is open to not exercising the veto by new permanent members until a decision is taken during a review process.

3. Regional Representation

On the question of regional representation, India has forcefully argued for an equitable geographical representation and the urgent need for mitigating the non-representation and under-representation of some regions in both the permanent and the non-permanent categories. Making the case, India has pointed to the increase in the number of states to 193 at present from 51 when the UN was founded, and the untenability of whole continents not being represented at all in the permanent category. The Council in its existence of 70 years also does not represent the geo-political and economic realities. The Security Council, for India, needs to reflect contemporary realities and provide adequate representation to all regions of the world. India sees the growing clamor for regional representation as “a cry of frustration and dissatisfaction with the state of affairs.”³² The demand for regional representation has been made on multiple grounds including historical injustice, entire regions not equitably represented or even unrepresented in a key category, and hope of moving beyond the nation state as the primary actor on international affairs. In Indian eyes, it is an “anachronistic” situation that the UN has three of the five permanent members from one region alone while the regions of Africa, Latin America, three-fourths of Asia including the Arab states, the entire Central and Eastern Europe, the Caribbean states and the Small Island developing states remain excluded from the functioning of the Security Council. On the role of regional groupings in the selection of new members, India favored the current practice, viz., each regional grouping would endorse its candidate, to be followed by the need to contest an election on the floor of the General Assembly for occupying a seat at the Security Council.

Acknowledging the various existing perspectives on the issue of regional representation that vary from one region to another, India has welcomed the approach of regions like Africa that have asked as a collective to be treated as a unique case. But these should be seen as supplemental in nature and do not replace the Charter requirements of all Member States voting to elect a permanent member for an equitable regional representation. While India accepts the inter-linkage drawn by the African states between the issue of categories and regional representation, India opposes such linkages.³³ (Joint G-4 Statement by Brazil, Germany, India and Japan, April 2017) Realizing that such a unanimity in the Asian region does not and will not come about, India has stated that though it respects the unanimous desires of a region like Africa, it cannot be replicated elsewhere where such desires do not exist.

4. Size of Council and its Working Methods

On the question of the size of an enlarged Council and its working methods, India has stated that 'we the peoples' in whose name the Charter was agreed to have more than trebled since 1945, from about 2.35 billion worldwide to more than 7.3 billion estimated today. Also, at the signing of the UN Charter in 1945, the Security Council had 11 members, including five permanent members and six non-permanent members and a total of 51 member states. Thus, there was one Council member for every five Member-States and one permanent member for every 10 of the General Assembly. The UN membership now has also trebled. (Feb 2016) India, realizing the need to be realistic, has not called for a three-fold expansion in the membership of the Council.

5. Relationship between the SC and the GA

On the equally significant issue of the relationship between the Security Council and the General Assembly, India opines that it should not be competitive or adversarial, but "one of synergy and complementary" that benefits the UN objectives of the promotion of international peace and security.³⁴ A relationship with the General Assembly based on transparency, mutual trust and frequent interaction with all Member States will increase the credibility of the Council, which includes increase in dialogue between the Council and the Assembly. India thus has called for a greater transparency and consistency to improve the relationship between the two.

Additionally, and crucially, as it assumes implications for Indian success in getting the permanent seat in the Council, on the issue of election process of new permanent members, India has argued for a process of elections by a secret ballot, in consonance with the UN Charter and General Assembly rules. Article 108 of the Charter stipulates that the any amendment to the Charter could be done with a vote of two-thirds of members of the General Assembly. On the other hand, Rule 83 of the GA Rules of Procedure says that two-thirds of the majority of the members present and voting can take decisions of the General Assembly on important questions.³⁵ Such decisions include recommendations regarding maintenance of international peace and security and the election of the non-permanent members of the Security Council. India has also cited that the General Assembly's Resolution A/RES/53/30 of 23 November 1998, which was unanimously adopted, decided on a 2/3rd majority of the membership, as the threshold for arriving at substantive decisions on Security Council Reforms.

PROBLEMS IN THE REFORM PROCESS

The road for the reforms is not easy. Three powerful members of the UNSC namely Russia, China, and the--U.S. are opposed to any major restructuring of the Council. Though Russia and the U.S. have said they would support India's UNSC bid, however, when it comes to proceedings at the UN their positions represent a far cry from the promises they make at bilateral meetings. The U.S. favours only a—modest expansion of the UNSC, while Russia doesn't want any change in the veto arrangement. The reform of the Security Council can only take place if two-thirds of UN member states vote in favour, along with an affirmative vote from all the permanent members, who enjoy the veto power. Effectively, even if India secures the support of two-thirds of UN members, who are present and voting, it would still need the five permanent members to not use the veto and thereby, prevent the adoption of the reform process. Moreover, the India's bid for the permanent seat in UNSC is being opposed by its nuclear--armed rival Pakistan with other members such as Italy, Mexico Egypt Argentina, South Korea, Spain, Turkey and Indonesia.

CONCLUSION

India's claim for permanent membership is a genuine demand in the changed geo politics of 21st century as we have discussed before. India is possibly the most obvious and least controversial option to add as a permanent member, and probably long overdue for a seat. UNSC is mandated to keep international peace and security.

However it is under constant criticism for its plans and actions. It is said to be performing in unilateral way with unquestioned authority, working only for vested interests and not making non-permanent members inclusive in their decision making. In this context, we can see that India's demand is not illegitimate as India does wield a certain influence in world affairs today due to its impressive economic growth and strong military base. South Asia being a victim of various repercussions of war, terrorism, and extremism India gains more say on its and neighbor's a victim of various repercussions of war, terrorism, and extremism India gains more say on its and neighbor's problems and will have power to challenge the ethos and working style of permanent members of UNSC. In the contemporary period, if India has to make a strong claim to permanent membership, it has to single-mindedly focus on economic growth, with concomitant military might.

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PARADIGM OF ANTI- DEFECTION LAW IN INDIA: A SUGGESTIVE ANALYSIS

Yogendra Jain

ABSTRACT

Every country has a political system. India is a democratic country and has a multiparty system. In every five years, before the election, these parties showcase their policy and programs before the citizens of India and the people elect their representatives from various candidates of different parties. With the time, election procedure has turned out to be more complex. The members were seen to cross the floor either in the lure of money or for the love of the chair. Firstly defection took place at a large scale in 1967. The first step was to prevent any such situation was taken as the 52nd amendment in the Indian constitution 1985. The 10th schedule was incorporated in the Indian constitution by this amendment. Subsequently, committees were formed to examine the efficiency of the anti-defection law in 1990, 1996, 1999 and 2002. Further, The Indian constitution was secondly amended in 2003 (91st constitutional amendment) to regulate the anti-defection law. Also, the judiciary has provided landmark ruling and decisions on the cases related to anti-defection law.

The researcher has divided the study into four chapters. The first chapter deals with the provision of the anti-defection law. The second chapter describes the view of the judiciary. The third and fourth chapter analyzes the reforms of anti-defection law with prevailing lacunas and frames suggestions to regulate the law. The principal issue in the present research is to find out the lacunas of anti-defection law of India. It has been seen that the parties use the whip to regulate the behavior of the members very often, which subsequently results in the suppression of the welfare of the common man. Also, the decision making power is given in the hand of the speaker/chairman who himself is a part of the house. These issues are the main statement of the problem and the study revolves around finding the solution for these issues.

Keywords: Anti-defection, 10th Schedule, Constitution, Parliament

In general sense 'defection' can be defined as "The discharge of faeces from the body."¹ In the context of Indian politics, it can be understood as the situation where a legislator of a political party abandons his loyalty towards the party and joins another party.

The history of Indian republic faced no issue of defection in the first two decades of independence. In 1967, elections took place in sixteen states. Also, Gaya Lal who was the member of Haryana Legislative Assembly in 1967 changed his party thrice in a fortnight from Indian National Congress to The United Front then backed to Indian National Congress and within nine hours he again joined United Front. This act is popularly known as '**Aya Ram, Gaya ram**'.² Surprisingly, Congress could prove majority in the only state. This turned into the beginning of the **coalition era** in India. Subsequently, the government took 17 years to amend the laws and incorporate anti-defection provision in Indian law. In 1985, **Rajiv Gandhi Government** introduced the provision to regulate the defection law in India, through the 52nd Constitutional Amendment, which is also known as an anti-defection act.

The 10th schedule was incorporated in Indian Constitution through **52nd Constitutional Amendment Act**, which provides for the conditions of disqualification for a member of central or state legislature on the basis of following grounds:-

(i) In case of a member of a political party

- When voluntarily resigned from his party or disobeyed the directives of the party leadership on a vote.³
- When does not vote/abstains as per party's whip? However, if the member has taken prior permission, or is condoned by the party within 15 days⁴ from such voting or abstention, the member shall not be disqualified.⁵

¹ <https://en.oxforddictionaries.com/definition/defecation> Accessed on, 13th May 2019

² Kuldeep Dhiman, Aya Ram, Gya Ram, Published in The Tribune, 2nd November 2008

³ The Constitution of India, Schedule X, Paragraph 2(1) (a)

⁴ The Constitution (Ninty-First Amendment) Act 2003

⁵ The Constitution of India, Schedule X, Paragraph 2(1)(b)

(ii) In the case of an Independent Member

- If an independent member takes membership of any political party, he/she shall be disqualified to be a member of the respective legislature.

(iii) In the case of Nominated Member¹

- If a nominated member wants to acquire membership of any political party, he shall acquire such membership before the expiry of six months from the date of appointment.

Power to Disqualify²- Speaker or the chairman of the house decides the question of disqualification of a member.³ In case, where the complaint is received against the speaker or the chairman of the house, then the elected member of the house shall decide the case.⁴

Here it is also expedient to note that Speaker or Chairman of a legislature can resign from his party. However, he can rejoin the party after the end of his term as a legislator.

Another important aspect is that the abovementioned provision shall not be applicable if more than 1/3rd member of party merges into another party.⁵ Further, through the **91st Amendment Act, 2003**, this limit is extended to 2/3rd member. This provision is also known as the merger of the party. Now if less than the 2/3rd member of a party split, they will be covered by the said act.⁶

All proceedings regarding disqualification of a legislator are deemed to be the parliamentary proceedings or proceedings of a legislature, as the case may be.

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Court has no jurisdiction and speaker or chairman of the legislature shall decide the case of disqualification. Subsequently, the matter can be brought before the court through the process of **judicial review**.⁷

The researcher is dealing with cases which have been decided in light of anti-defection laws. Some of them are as follows-

The first major case related to the Anti-defection law in India is '**Kihoto hollohon VS Zachillhu(1992)**'⁸. In this case, the main question was to decide whether or not the tenth schedule of the Indian Constitution curtail the right to freedom of speech and expression of the elected members in parliament and state legislatures? SC decided that the 10th schedule neither impinges upon the freedom of speech and expression nor turns over the rights of elected members. The apex court found the 10th schedule constitutionally valid. Supreme Court relied upon the view that the parliamentarians who are members of the party are supposed to have the same opinion as to their respective party where the opinion is vital for the existence of his party in the government or in any other important issue. So the right of speech and expression conferred by the constitution is available to the parliamentarians.⁹ These persons shall not be compelled to have an opposite or different opinion, which is in favor of the party, every now and then. On the other hand, the government allowed the party whip partially to eliminate any possibility for a parliamentarian to use their position to vote in the favor of others, in the lure of money.¹⁰

Two other important issues raised in this case were related to the finality of the decision of the speaker or the chairman of the house, which was inscribed in paragraph 6th of the 10th schedule of the Indian Constitution.

¹ The Constitution of India, Schedule X, Paragraph 2(3)

² The Constitution of India, Schedule X, Paragraph 6

³ The Constitution of India, Schedule X, Paragraph 6(1)

⁴ The Constitution of India, Schedule X, Paragraph 6(1), sub paragraph 2nd

⁵ The Constitution (Fifty-Second Amendment) Act 2003

⁶ The Constitution of India, Schedule X, Paragraph 4(2)

⁷ M.P. Jain, Indian Constitutional Law, Page 779, (6th Edition) Wadhwa Publication, Nagpur

⁸ Kihoto hollohon VS Zachillhu AIR 1993 SC 412

⁹ Constitution of India 1950, Art. 19(1)(a)

¹⁰ Kashyap Shubhash C., Anti-Defection Law and Parliamentary privileges, Page 167-170, (2011), Universal Law Publishing Company Ltd

Also, the 7th paragraph was challenged because it barred the jurisdiction of the court in case of disqualification of a member.

SC decided that the power given to the speaker under the 10th schedule is legitimate and valid. However, the doors of High Court and Supreme Court were kept open for 'Judicial Review' as a check and balance mechanism over the use of power by the speaker or chairman of the house. But here it is expedient to cite that the court said, "Judicial Review cannot take place prior to the decision of respective authority as per 10th schedule". On the other hand, the 7th paragraph was declared invalid as it tried to change the operation of article 136, 226, 227 of the Constitution. So the SC pronounced this verdict to eliminate any possibility of defection.

Two years later another issue was raised in relation to the anti-defection law of India. This time the interpretation of the term "*Voluntarily giving up the membership*" was called in question in "**Ravi S Naik v. Union of India (1994)**"¹ The Issue raised was, "Does only resignation constitute "**voluntarily giving up**" membership of a political party" ".

Supreme Court said that the resignation is a ground to reach the opinion that the member is "voluntarily giving up membership of a political party" but it is not the sole criteria to draw such inference. Instead, such inference can be drawn by the conduct of the member and subsequently appropriate action can be taken against the member as per the 10th schedule of Indian Constitution.

In 1996 the term "*Unattached Member*" was introduced in the **G. Vishwanathan v. Speaker, Tamil Nadu Legislative Assembly (1996) case**.² The main issue, in this case, was that if a member of a party joins another political party after being expelled from his previous party, will he be considered as "voluntarily giving up membership"?

Here the concept of "Unattached Member" came into picture When the Apex court said that once a member is expelled from his party that member is treated as *unattached member* in the house. However, he is still considered as a member of his old party as per the provisions of 10th schedule of Indian Constitution. Subsequently, if he joins a new party, he can be said to have voluntarily given up membership of his old party. Hence, on such condition, he can be punished as per the provisions of anti-defection law of the nation.

This decision provided a political calculation that creates a fear in the mind of all members of a political party.³ Because this rule prohibits all member to take shelter under the roof of another party's headquarter when they are expelled from their own party.

The review is one of the major features of Indian Civil Laws. In 1993, **Dr. Kashinath G Jhalmi vs Speaker, Goa Legislative Assembly**⁴, an issue was raised that can a speaker review his/her own decision to disqualify a member?

Apex Court decided that the the speaker of the house cannot review his own decision. No such power has been explicitly or impliedly provided by the 10th schedule. Further, in **Ravi S. Naik Vs Union of India**⁵ Supreme Court said that speaker, while deciding the case of disqualification of a member, acts like a '*Tribunal*', therefore the decision passed by the speaker is subject to judicial review by High Court or Supreme Court. This view was firstly expressed in '**Kihoto hollohon VS Zachillhu(1992)**'⁶ case and subsequently,, it was referred in in this case.

Now the question raises that are the rules formed by the Speaker/Chairman under the 10th schedule are subject to the judicial review?

The apex court decided in the **Ravi S. Naik case**⁷ that the rules under the given schedule are procedural in nature. Procedural rules are immune from the judicial review, so the rules under the 10th schedule are out of the purview of judicial review.

¹ Ravi S Naik v. Union of India 1994 AIR 1558

² G. Vishwanathan v. Speaker, Tamil Nadu Legislative Assembly 1996 AIR 1060

³ Arvind P Bhanu, Anti-Defection Law Coalition Formation: Issue and Spectrum, IJLS 2011

⁴ Dr. Kashinath G Jhalmi vs Speaker, Goa Legislative Assembly 1993 AIR 1873

⁵ Supra 15

⁶ Supra 12

⁷ Supra 15

Last decade of the 20th century was the golden period of the judicial reforms in the field of the anti-defection law. After this decade another vital guideline was provided by the Apex court in 2007 regarding the conditions when can a court review the decision of speaker under 10th schedule.

The SC said that if a speaker fails to act on any complaint or accepts claims of splits or merges a party without making a finding then he acts contrary to the 10th schedule of Indian Constitution. Hence Court can interfere in the matter in such case through Judicial Review. (Decided in **Rajendra Singh Rana and Ors. vs. Swami Prasad Maurya and Ors. (2007)**)¹.

➤ Instances of some disqualifications by the speaker for defection-

Speaker/Chairman of the house decides the case of defection by a member of parliament/state assembly. The power to disqualify a member on the basis of defection has been used various times by the speakers. The researcher is providing a brief study of some instances where the speaker adjudicated the matter and pronounced the decision regarding defection. This is done to make the understanding of the practical approach adopted by the speaker in the case of defection clear.

One of the recent cases is related to Dr. P.P.Koya. In 2009, he disobeyed his party whip by being absent from the voting, where he was required to be present and vote against the motion of confidence for the government. This matter of defection was presented before the speaker and he decided that the reason for illness' pleaded by Dr. Koya is not sufficient and he failed to satisfy the speaker. Hence the speaker pronounced the decision against him.

This case firmly established the principal that it is essentially required to prove the inability to obey the party whip due to an external cause.²

In another instance, speaker decided that where there is sufficient evidence to prove that the whip of party has been delivered and duly received. Any member cannot take the plea of improper delivery of the whip.³

National level political parties have their own ideologies in India. People follow those party because they are influenced by the ideology, proposed schemes, programs of that party. So, where a member of any political party wins the election, the reputation of the party plays a vital role in the victory. Hence, If a member criticizes the government of his party then his conduct shows the elements of "voluntarily giving up membership".⁴

➤ The Issue of Uttarakhand

The first quarter of 2016 witnessed the **Uttarakhand crisis**. The Chief Minister of Uttarakhand lost the majority on 18th March. When nine MLAs of Congress crossed the floor of the house and joined BJP.⁵ Speaker of the assembly Mr. Govind Kunjwal dismissed the membership of the nine Congress MLAs because defection is permissible only when it takes place with 2/3majority⁶. In the present case allowing these MLAs along with 27 other MLAs of BJP to demand division of votes on "Appropriation Bill" could have defeated the defection law in India. Hence the speaker took this step.⁷

Further, the Supreme Court bench of Justice Deepak Mishra and Rohinton Nariman refused to stay the disqualification of nine MLAs along with the chief minister Mr. Vijay Bahuguna on the evening of the beginning of assembly season on 21st July. The bench refused to discuss the constitutionality of the decision of disqualification of nine members by a speaker when a motion of his removal was already pending before the floor of the house.

¹ Rajendra Singh Rana and Ors. vs. Swami Prasad Maurya and Ors. *AIR 2007 SC 1305*

² Shri Rajeev Ranjan Singh "Lalan" vs. Dr. P.P. Koya, JD(U), (January 9, 2009)

³ Shri Prabhunath Singh vs. Shri Ram Swaroop Prasad, JD(U), (October 3, 2008)

⁴ Shri Avtar Singh Bhadana vs. Shri Kuldeep Singh, Indian National Congress, (September 10, 2008)

⁵ Press release, The Hindu, March 27, 2016, available at <http://www.thehindu.com/news/national/other-states/rebel-mlas-disqualified-under-antidefection-law/article8402469.ece>, Accessed on 21-04-2019

⁶ The Constitution (Ninty-First Amendment) Act 2003

⁷ Press release, Hindustan Times, 09th May 2016, available at <http://www.hindustantimes.com/india/here-is-all-you-wanted-to-know-about-the-anti-defection-law/story-49d09jR4iSNmKI5w83u2IL.html> Accessed on 05-04-2019

Hence it is clear that the defection has a long history in India. From time to time appropriate actions have been taken by the governments to eliminate any possibility of defection. Still, there are certain lacunas remains in the law of the land that must be filled soon.

Recent Case of AIADMK MLAs¹, On April 30, a notice was served by the Assembly Speaker Mr. P Dhanapal to Mr. A Prabhu (Kallakurichi), Mr. E Rathinasabapathy (Aranthangi) and Mr. Kalaiselvan (Vridhachalam), seeking an explanation for allegedly favoring Amma Makkal Munnetra Kazhagam (AMMK) leader TTV Dhinakaran.

A petition was filed by the said AIADMK MLAs to The Supreme Court. Further SC, On Monday, stayed disqualification proceedings against two AIADMK MLAs, who were served notice by the Tamil Nadu Assembly Speaker for allegedly indulging in "anti-party" activities.

REFORMS MADE IN ANTI-DEFECTION LAW SO FAR

Reassessment of the defection law in India was done through the constitution of various committees in this regard. In this chapter brief examination of the main steps taken by the government to eliminate defection will be discussed. These are as follows-

- i. *Dinesh Goswami Committee on Electoral Reforms (1990)²*
- ii. *Halim Committee on Anti-Defection Law (1998³)*
- iii. *Law Commission Report (170th report) (1999)*
- iv. *Election Commission's Recommendations*
- v. *Constitutional Review Commission (2002)*

In 1990, a committee was chaired by Mr. Dinesh Goswami to examine the anti-defection laws of India and provide appropriate suggestions. This committee mainly suggested that the decision on the defection shall be taken by President/Governor on this must be done on the advice of election commission. Secondly, this committee suggested disqualifying a member only on the ground either of voluntarily giving up membership of the party or when the member acts against the party whip.

This committee importantly suggested that the decision making power must be shifted from chairman/speaker to the president /governor. These suggestions have not been implemented yet.

In 1998 another committee was formed. This committee was known as Halim Committee on anti-defection law. This committee said that the term "Voluntarily giving up membership" must be comprehensively defined. It means that not only the explicit resignation but the conduct of a member which shows that the member is acting against the party shall be sufficient to conclude that the member has voluntarily given up the membership of the party. Secondly, this committee also suggested that the member who has been found guilty of defection shall be deprived of joining another party or holding office in the government for a certain period. This committee also suggested that the term "Political Party" must be clearly defined.

The **Law Commission Report⁴** pens down the provision that exempts splits and mergers from disqualification shall be deleted. Also, where the political parties form the front by incorporation of two or more parties for the election purpose, these fronts must be treated as political parties for the purpose of the anti-defection law. This report also said that 'Whip of the party' must not be used frequently. It means that the party should use the whip only when there is an imminent danger to the government.

Election commission of India found the Dinesh Goswami Committee's suggestions appropriate where it was suggested that the decision making power must be handed over to the President/Governor.

¹ Press release, Economic Times, 06th May 2019, SC stays disqualification proceedings against 2 AIADMK MLAs

<https://economictimes.indiatimes.com/news/politics-and-nation/sc-stays-disqualification-proceedings-against-2-aiadmk-mlas/articleshow/69197165.cms> Accessed on, 07-05-2019

²<http://lawmin.nic.in/ld/erreports/Dinesh%20Goswami%20Report%20on%20Electoral%20Reforms.pdf> Accessed on 04-11-2016

³ lawmin.nic.in/legislative/ereforms/bgp.doc Accessed on 20-04-2019

⁴ Law Commission Report, Reforms on Electoral Laws, Report No. 170th, 1999

Constitutional Review Commission 2002 says in its report that any person who is found guilty under anti-defection laws shall be barred from holding any public office or any remunerative political post for the remaining term. Here it was also said that the vote cast by a defector to tumble the government shall be treated as invalid.

Here it is very clear that some conscious steps have been taken and many vital suggestions have been made by the committees formed from time to time to regulate the anti-defection law of the land. Now it is expedient to study the lacunas of the anti-defection law and find the answer to the questions on the basis of the study.

ANTI-DEFECTION LAW- PRESENT LACUNAS AND SUGGESTIONS

The major lacuna of the anti-defection law in India is the absence of defined purview for “*the extent of use of party’s whip*”. It has been seen that the parties frequently use the whip to restrict the behavior of member in the public. This act of parties deprives the member of their right to speech and expression given to them as a citizen of India under Article 19(1) (a) of The Constitution of India.¹

The main function of the parliament/state assembly is to regulate the acts of executive. This can be effectively done only through healthy debate. Originally, the British parliament adopted the method of debate. This is a medieval understanding of parliament where debated means a meeting or speech. Hence freedom of speech is mandatory for a democratic government.

On the other hand, Many times government takes decisions which are against a particular region of the country. But the MLA or MP elected from that region is the representative of the people of that part, hence it is his duty to raise the voice of people in the house. But the member is many time forcefully deprived of his right to raise the voice in the shadow of party whip. As a representative he is bound to take the local issues to the government on one hand and on the other hand he is also bound to follow the mandate of the party and be reliable to the party. In balancing both of the responsibility members usually provides preference to the party because the party plays a major role in the existence of the member in the government. Hence somewhere the party whip turns to be anti to the welfare of society.²

So it is required to regulate the extent of use of party whip over the members.

In this regard, firstly the party should use the whip only when there is imminent threat to the existence of the government of the party. In this case the use of whip should be permitted because the member who is elected from the ticket of a particular party, somewhere, has won the election because of the reputation of that party. Hence party has right to restrict that person from going against the mandate of party in a situation of imminent threat.

Secondly the whip must not be used for minor decision. The rationality behind this view rests in the fact that the members are elected for the betterment of the area of the country which the represents. If every time party uses the whip and restricts the MLAs and MPs then the ultimate goal of social welfare will be defeated.

On the other hand, it is expedient to scrutinize decision making power. Presently, the decision making power is given to the speaker/chairman of the house. The chairman/speaker is a person who is basically related to a political party. Also, speaker is a member of the house. So there always remains the possibility of misuse of power. Recently, it was seen in the Uttarakhand that a motion was pending before the floor of the house against the speaker and he passed a decision of disqualification of nine MLAs.³ So these incidents take place because of lack of proper decision making authority. Election commission is the apex authority for the matters related to the election in India. Hence the decision making power must be handed over to the President in the case of parliament and in the hand of Governor in the case of state assembly and both must take decision on the basis of the suggestions of the Election Commission of India.

RECOMMENDATIONS AND CONCLUSION

I would suggest three recommendations-

- i. The parliamentarians or the members of state assemblies should not be compelled by the party for the sake of minor issues. The use of party whip must be restricted to the very important issues as no-confidence motion or on the situation of danger to the government of the party.

¹ Kashyap Shubhash C, Anti-Defection Law: Premises, Provision and Problems, Page 72, 1989,

² Kashyap Shubhash C., Anti-Defection Law and Parliamentary privileges, Page 285 (2011) Universal Law Publishing Company Ltd.

³ Supra 26

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- ii. I am of the opinion that the president/governor is an appropriate authority for decision making in the defection cases than to the speaker/chairman. I have discussed the Uttarakhand case and many similar cases have been seen where the speaker used his power in a biased manner. Hence the president/governor can serve the purpose in the best manner. However, this power must be used as per the advice of the Election Commission.
 - iii. The present anti-defection law certainly affects the healthy debates but we should not forget that the present scenario is way better than the past fifty years. Hence I would say that not only the lawmakers but also the parties should brainstorm to regulate and minimize the use of party whip to promote healthy discussions.

Thus it can be concluded that the anti-defection law works as a very effective tool to form a stable government. Also, it prevents legislators from casting vote for the lure of money or in the enticement of ministerial birth. On the other hand, the anti-defection law makes the legislators handicapped by providing a strong whip in the hand of the political party. When we take a look at the present scenario we find that the ministers and politician many time plays cheap politics so it is expedient to enact a stringent law that can eliminate any possibility of defection. The present law has partially solved the issue but there is a long way ahead to reach the destination for the anti-defection law. Where on one hand provision as- merger by minimum 2/3 majority, provisions for the nominated and independent candidate are transparent, on the other hand, decision making power and the absence of effective regulation to control the use of the whip by the parties are still needed to be reviewed. Hence it can be concluded that the Indian Defection Law has been proved very useful in the past seventy two years of democracy and this law should be made more efficient by incorporating some important provisions.

ANN BASED GRID TIED PV SYSTEM WITH TRANSFORMERLESS INVERTER FOR REACTIVE POWER CONTROL

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ABSTRACT

The Rise in power demand with growing population across the world has led to the development of renewable energy sources. Among all the renewable energy sources PV power generation system proves to be more superior and efficient than other renewable sources. Recent innovations in transformerless inverters have proven to be efficient and reliable than conventional ones. The major difficulty in handling the transformerless inverter is the leakage currents, which is because of the parasitic capacitance between PV array and the ground. This leakage current leads to several protection issues along with unstable CM voltages. Here the proposed transformer less inverter for grid connected PV system has the capability of reducing the leakage currents. It also provides the required reactive power to the system to maintain constant CM voltage. To provide high quality current injection in to the grid, PR controller and fuzzy controller are used. In this study the detailed analysis of the operating modes of the proposed PV transformer less inverter system, analysis of the leakage currents and results in MATLAB simulation are presented.

Keywords:- Common mode (CM), parasitic capacitance, reactive power, ANN controller, Transformer less inverter.

1. INTRODUCTION

With the rapid growth in population the demand for electrical power has been increasing and there has been a limitation on usage of natural resources. In order to meet the electrical power demand there has been great interest towards renewable energy sources[1]. Among all the renewable sources solar power is considered to be the better in order to meet the demand since it is pollution free and in exhaustible. With the rapid increase in power electronic devices and incentive beneficiary from the government, PV module price decreases, and so grid-connected PV systems plays an important role in distributed power generation. Typically galvanic isolated transformers are used in grid connected PV machine for protection reason. Galvanic isolation prevents DC current injection into the grid and the leakage currents between grid and PV module are reduced [2]. By the usage of high frequency transformers at the DC aspect and low frequency on inverter facet the overall performance of the system is decreased. In order to overcome this problem transformer less grid tied PV system is employed.

In this paper a new scheme of grid connected PV system with full bridge topology inverters are presented under low frequency transformer. With the help of this galvanic isolation [3], it reduces the usage of inverter filter requirement and also eliminates the compliance of electromagnetic interference. However, converters embedding frequency transformer (50 Hz) are bulky and the transformer accounts for 1-2% of the power losses.

For these reasons, researchers have been active in the study of solutions for removing the line frequency transformer, with a view to pursuing maximum efficiency without increasing the cost of the cost converter. The main problem that arises when you delete the low frequency transformer is due at the sight of a parasitic capacitance between the solar cells and the metal frame of the Panel [4]. This implies that a leakage current to ground (i.e., common mode current) can flow into the resonant circuit is composed of line conductors, grounding of MV/LV distribution transformer and the parasitic capacitance of the PV field. If a simple full-bridge is used without coupling transformer or specific modulation strategy, high-frequency common mode voltage variations at the converter output cause abnormal levels of earth leakage current, which generate EMI, reduces the security of the system and cause the disconnection of the device due to residual current device (RCD).

By removal of galvanic isolated transformer, the leakage currents between grid and PV module are increases, the parasitic capacitance effect occurs and it leads to common mode voltage fluctuation at grid side [5]. This common mode voltage fluctuation depends on the switching scheme and topology structure, hence which leads to capacitive leakage currents. These leakage currents increases the grid harmonic currents and system losses. To inject reactive power into system, this PV inverter is interfaced with grid. In recent international regulations certain rules have been imposed regarding minimum reactive power handling by grid-tied PV inverter system.

Previously transformerless H-Bridge inverter is utilized for PV System. The basic simple H-Bridge PV transformer less inverter is shown in figure 1. The principle benefit of this topology is potential to generate

reactive to the grid. The main disadvantage of this device is the bipolar pulse width modulation to avoid commonplace mode voltage and excessive switching losses in IGBTs [7].

Another H5 transformer less topology show in figure 3 which is make from fig1 by adding an extra switch at the at DC side of the full bridge inverter. For example when this system preform with input voltage 345V dc and switching frequency 16-kHz then system efficiency has 98%. But, this topology has high conduction losses due to the truth that the current must conduct through three switches in series during the active segment [9]. Every other disadvantage of the H5 is that the line frequency switches S_1 and S_2 cannot make use of MOSFET gadgets due to the fact of the MOSFET frame diode's gradual reverse recovery.

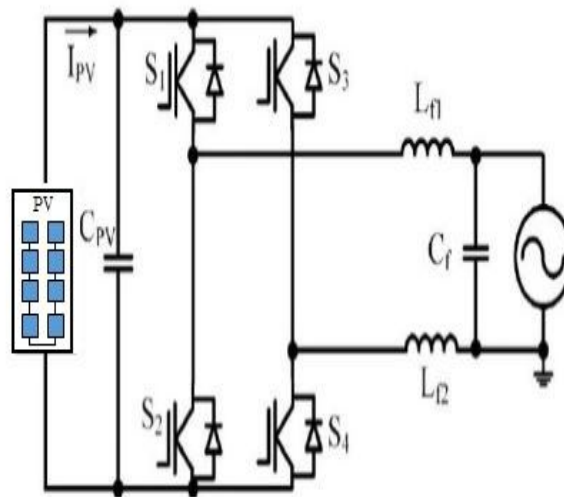


Fig-1: The H-bridge inverter topology [6]

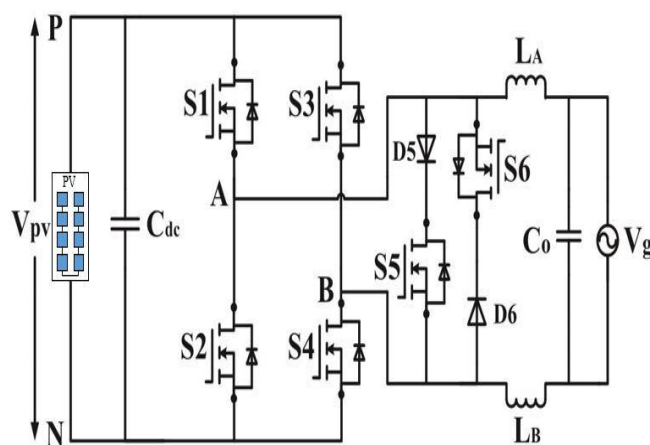


Fig-2: The HERIC inverter topology [8]

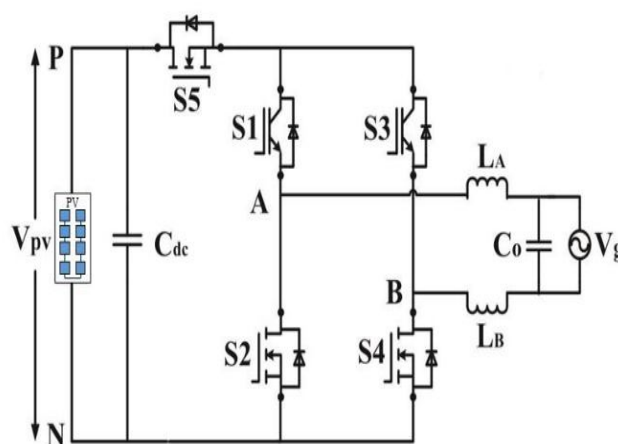


Fig-3: The H5 inverter topology [9]

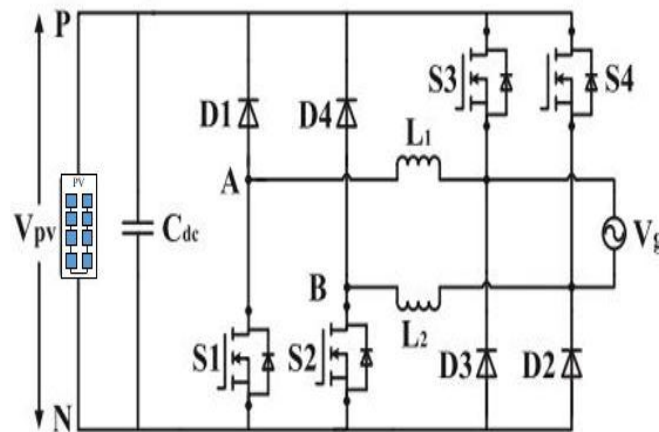


Fig-4: Symmetrical H6 inverter topology [10]

When we are capable of developed a transformerless inverter predominant troubles are taken into consideration. one of the trouble for an excessive efficiency and reliability transformerless PV inverter is that as a way to gain high performance over an extensive load range it is essential to utilize MOSFETs for all switching devices [11]. Some other difficulty is that the inverter need to no longer have any shoot-via problems for higher reliability. A good way to address these key issues, a new inverter topology is proposed for unmarried-phase transformerless PV grid- connected systems.

The important function for grid connected photovoltaic systems are generate real power and compensation of reactive power. This paper implemented with two current controllers i.e Fuzzy controller and PR controller. These current controllers are effectively control grid current and also maintain power flows between the grid and system. The PR controller can maintain the grid current in phase with the grid voltage by the inverter, so unity power factor can achieved. The PR+HC controller are minimize lower order odd harmonics components present in inverter output current, and also these are gives high gain at resonant frequency. Therefore the system study state error reduce to zero. Due to this THD value of the system has been decreased. Therefore these controllers can reducing harmonic currents rejection and steady state errors as compared to the PI controllers.

2. PROPOSED TOPOLOGY AND OPERATING PRINCIPLE

2.1 Circuit configurations

The proposed transformerless inverter topology shows in Figure 5 and it consists of 6 MOSFET switches (S1-S6) along with 6 Diodes (D1-D6). The coupled inductors L_{1A} , L_{2A} , L_{1B} , L_{2B} , L_{1g} , L_{2g} form the LCL type filter adopted to the grid and signifies the input dc voltage and dc link capacitor. In proposed topology the MOSFETs body-diodes contains of low reverse- recovery problems when injecting the reactive power into the grid [12]. in order to reduce issues present topology developed with high reliability and efficiency. The proposed topology can also consists of unipolar-SPWM with three level output voltage.

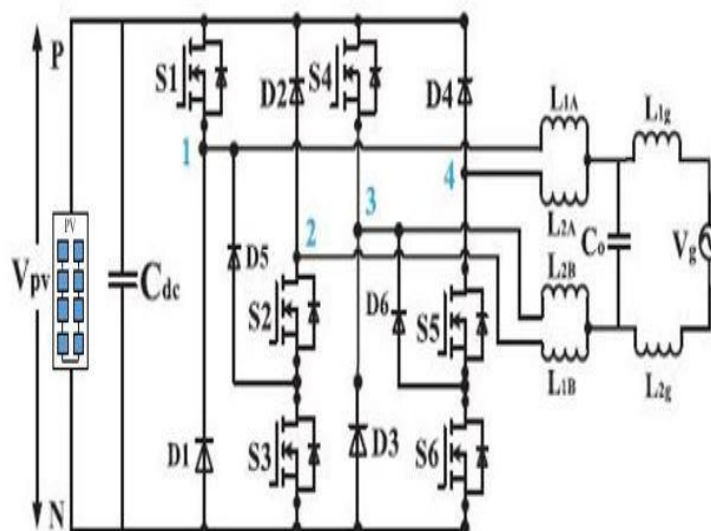


Fig-5. (a) Proposed topology [12]

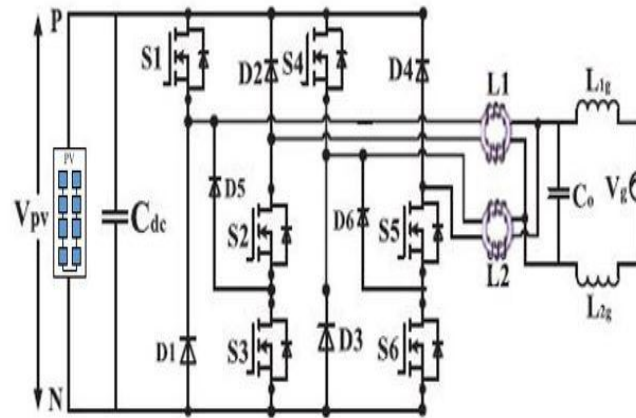


Fig-5(b). Circuit with coupled inductor

2.2 Operating principle of proposed topology

The switching pattern of proposed topology as shown in Fig.6 where the switches S1,S2,S3,S4,S5,S6 signifies main switches and their operating gate signals G_{s1} , G_{s2} , G_{s3} , G_{s4} , G_{s5} , G_{s6} are respectively. The principle of operation of the proposed topology is classified into four regions as shown in Fig.5. The proportional operation of the high-quality and negative half of cycle of the grid contemporary are identical, consequently right here positive half of cycle has discussed. But the negative half cycle of operation is shown in Fig.7.

Region I: On this region, both the grid voltage (V_g) and the grid current (I_g) are positive. All through the duration inside this region S2 is continually on, while S1 & S3 synchronously and S5 complementary commute with high switching frequency. There are constantly states that generate the output voltages are in two states i.e $+V_{pv}$ and zero.

State 1($T_0:T_1$): At $t=T_0$, the switches S3 & S1 are switched on and the current via inductor rises through grid as shown in Fig.7(a). In this time interval, the voltages V_{1N} and V_{2N} may be defined as: $V_{1N} = +V_{pv}$ and $V_{2N} = 0$, consequently the output voltage of inverter $V_{12} = (V_{1N} - V_{2N}) = +V_{pv}$.

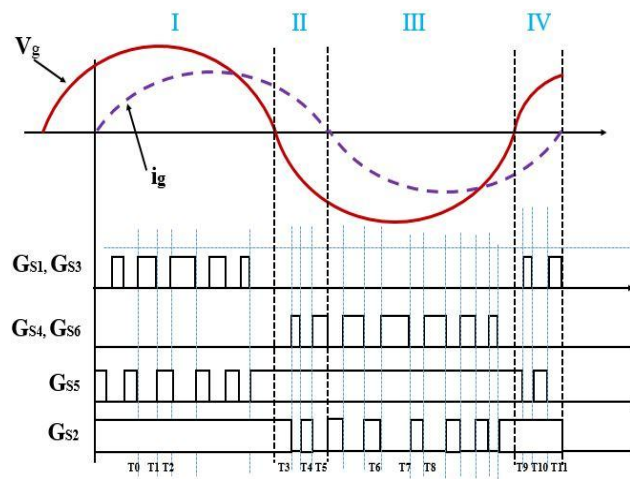


Fig-6: Switching configuration of this proposed topology

State 2($T_1:T_2$): When the switches S1 and S3 are became-off, the current through inductor freewheels via D5 and S2. In this state, V_{1N} falls and V_{2N} rises till their values are identical. Therefore, the voltages V_{1N} and V_{2N} become: $V_{1N} = V_{pv}/2$ and $V_{2N} = V_{pv}/2$ and the inverter output voltage $V_{12} = 0$.

Region II: In this range, the inverter output voltage is negative, but the current remains positive. All through the period of this range, S5 is always on, even as S6 & S4 synchronously and S2 complementary commute with high switching frequency. There are also two states that provide the output voltage of $-V_{pv}$ and zero. The negative 1/2 cycle operated in states that produce the output voltage of $-V_{pv}$ and 0.

State 3($T_3:T_4$): On this state, the switches S6 and S4 are became-on and the clear out inductors are demagnetized. For that inverter output voltage is negative and the grid current remains positive; therefore, the inductor current is forced to freewheel through the D1 and D2 diodes and decreases unexpectedly for enduring

the reverse voltage as shown in Fig. 7(c). The voltages V_{IN} and V_{2N} can be defined as $V_{IN} = 0$ and $V_{2N} = +V_{PV}$, thus the inverter output voltage $V_{12} = (V_{IN} - V_{2N}) = -V_{PV}$.

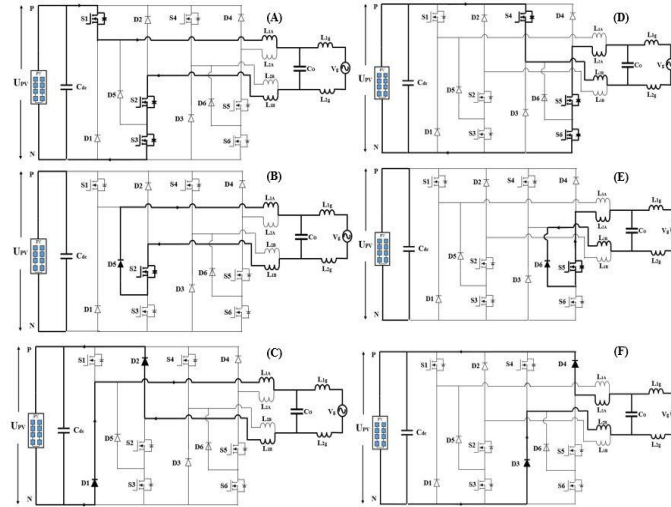


Fig-7: The operating principle of the proposed topology: (a) state 1 (b) state 2 (c) state 3 (d) state 4

State 4(T4:T5). At $t = T_4$, the switches S_6 and S_4 are switched off and S_2 is turned-on. Therefore, the current allows through D_5 and S_2 like as state 2 .Fig. 7(b) can be referred as equivalent circuit) in inductor. This state is called as energy storage mode. The voltages V_{IN} and V_{2N} could be: $V_{IN} = V_{PV}/2$ and $V_{2N} = V_{PV}/2$, and thus the inverter output voltage, $V_{12} = 0$.

3. HIGH FREQUENCY CM MODEL OF THE PROPOSED TOPOLOGY FOR LEAKAGE CURRENT ANALYSIS

The Photo voltaic module produces a chargeable electrical surface area which faces a grounded frame. Due to this capacitance is formed between the grounded grid and PV Module. Consequently this capacitance arises as an undesirable side effect, it's also referred as parasitic capacitance. Due to the lack of galvanic separation between the grounded grid and the Photovoltaic (PV) Panel, a Common Mode (CM) resonant circuit can be formed [13]. An alternating Common mode voltage that is predicated on this topology structure and control layout, due to this resonant circuit formed, and it causes the high ground leakage current flows through the circuit. so as to research the CM characteristics, an equivalent circuit of the proposed topology as shown in Fig. 8 may be drawn, where V_{IN} , V_{2N} , V_{3N} and V_{4N} are the managed voltage source connected to the negative terminal N, L_{CM} and C_{CM} are the Common Mode inductor and capacitor, C_{PVG} is the parasitic capacitance, and Z_G is the grid impedance. At the period of positive cycle, the switches S_4 and S_6 are continually off. As an end result, the controlled voltage assets V_{3N} and V_{4N} are zero and can be removed. As stated by the definition of common mode (CM) and differential-mode (DM) voltage:

$$V_{CM} = 1/2 (V_{IN} + V_{2N}) \quad (1)$$

$$V_{DM} = V_{IN} - V_{2N} \quad (2)$$

Solving (1) and (2), V_{IN} and V_{2N} can be expressed as follow

$$V_{IN} = V_{CM} + 1/2 V_{DM} \quad (3)$$

$$V_{2N} = V_{CM} - 1/2 V_{DM} \quad (4)$$

In view to illustrate the CM model at switching frequency, equation (3) and (4) could be replaced for the bridge-leg in Fig.7. The grid is a frequency (50-60 Hz) voltage supply; therefore the effect of grid on the leakage current may be not noted. The DM capacitor C_o can also be eliminated because it indicates no impact on the leakage current [2], [14]. Consequently, modified model of this topology for positive half cycle could be drawn as Fig.9. At last, this model of this topology for positive half cycle is derived in Fig.10. From Fig.10, the following equation of the total CM voltage can easily be derived as:

$$V_{ICM} = V_{CM} + \frac{V_{DM}}{2} \left(\frac{L_2 - L_1}{L_2 + L_1} \right) \quad (5)$$

Where V_{ICM} represent total CM voltage, and $L_1 = L_{1A} + L_{1G}$ and $L_2 = L_{1B} + L_{2G}$. In this inverter if $L_{1A} = L_{2A}$ and $L_{1G} = L_{2G}$ for a nicely designed circuit with symmetrically dependent magnetics, equation (5) may be rewritten as

follows:

$$V_{ICM} = V_{CM} = \frac{1}{2} (V_{1N} - V_{2N}) \quad (6)$$

In keeping with the precept of operation of this topology provided, the entire CM voltages may be calculated for each country of wonderful half of cycle operation as follows:

$$\begin{aligned} \text{State 1 : } V_{ICM} &= \frac{1}{2} (V_{1N} + V_{2N}) = \frac{1}{2} (V_{PV} + 0) \\ &= \frac{1}{2} V_{PV} \quad (7) \end{aligned}$$

$$\begin{aligned} \text{State 2 : } V_{ICM} &= \frac{1}{2} (V_{1N} + V_{2N}) = \frac{1}{2} \left(\frac{1}{2} V_{PV} + \frac{1}{2} V_{PV} \right) \\ &= \frac{1}{2} V_{PV} \quad (8) \end{aligned}$$

$$\begin{aligned} \text{State 3 : } V_{ICM} &= \frac{1}{2} (V_{1N} + V_{2N}) = \frac{1}{2} (0 + V_{PV}) \\ &= \frac{1}{2} V_{PV} \quad (9) \end{aligned}$$

$$\begin{aligned} \text{State 4 : } V_{ICM} &= \frac{1}{2} (V_{1N} + V_{2N}) = \frac{1}{2} \left(\frac{1}{2} V_{PV} + \frac{1}{2} V_{PV} \right) \\ &= \frac{1}{2} V_{PV} \quad (10) \end{aligned}$$

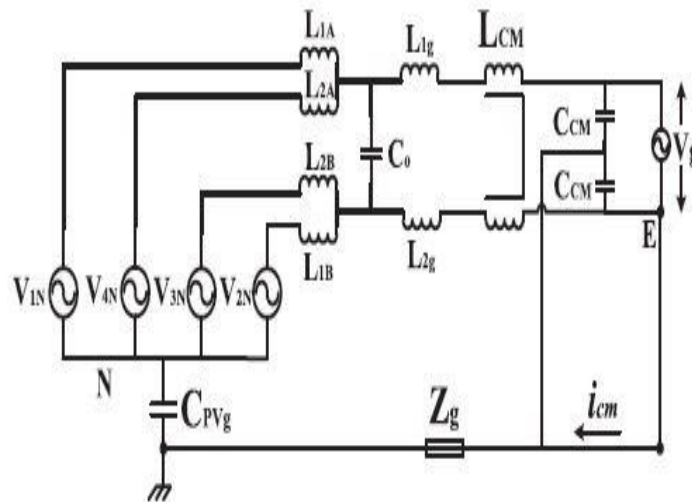


Fig-8: Equivalent Common Mode model of the proposed topology.

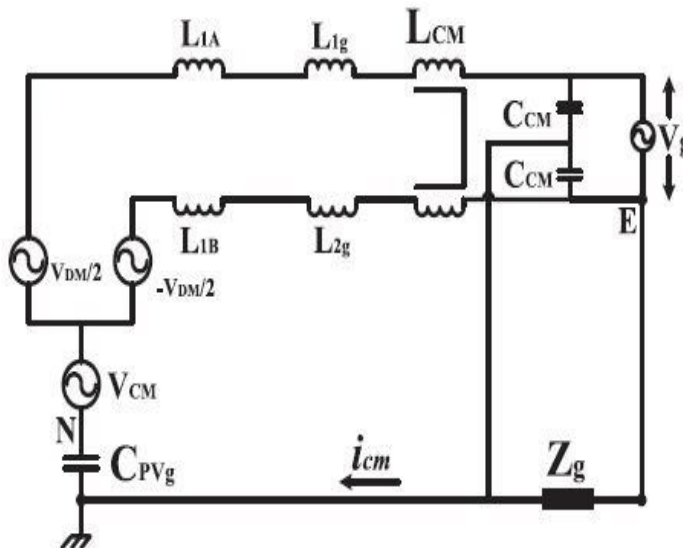


Fig-9: Simplified Common Mode model at switching frequency for positive half cycle.

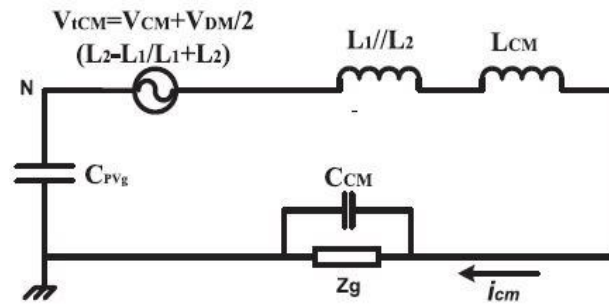


Fig-10: Simplified single loop CM model.

It is clear from equations (7)-(10) that the total CM voltage for this topology is kept same at $V_{PV}/2$ during positive half cycle operation. Likewise, the full CM voltage for the negative half cycle operation can be calculated and discovered to be regular at $V_{PV}/2$ because of the symmetry of operation for the corrupt and advantageous half cycle of grid present day. The most effective variation is the activation of various energy devices. For this reason, it could be summarized that the whole CM voltage throughout the complete grid cycle is stored same, lower-ing ground leakage current.

4. CONTROLLER DESIGN FOR SINGLE PHASE GRID TIED TRANSFORMERLESS INVERTER

The controlling structure of the proposed topology has shown in fig.11. This contains orthogonal signal generator (OSG) gadget for calculations of lively and reactive power of the gadget, artificial neural controller [14] for grid current controlling, and SPWM technology block [6].

In single phase grid related transformerless inverter, two controllers are evolved. One of the controller is artificial neural controller and second one is proportional resonant current controller (PRC). These current controllers plays an important role in current injected into the grid with less harmonic content when the power interchange among the system and grid. $I_g\alpha$ reference can controls the actual power of the system and also the orthogonal component of $I_g\beta$ reference controls the reactive power of the device with the grid. Consequently a decoupled governor of real and reactive power can be performed [12],[15],[16].

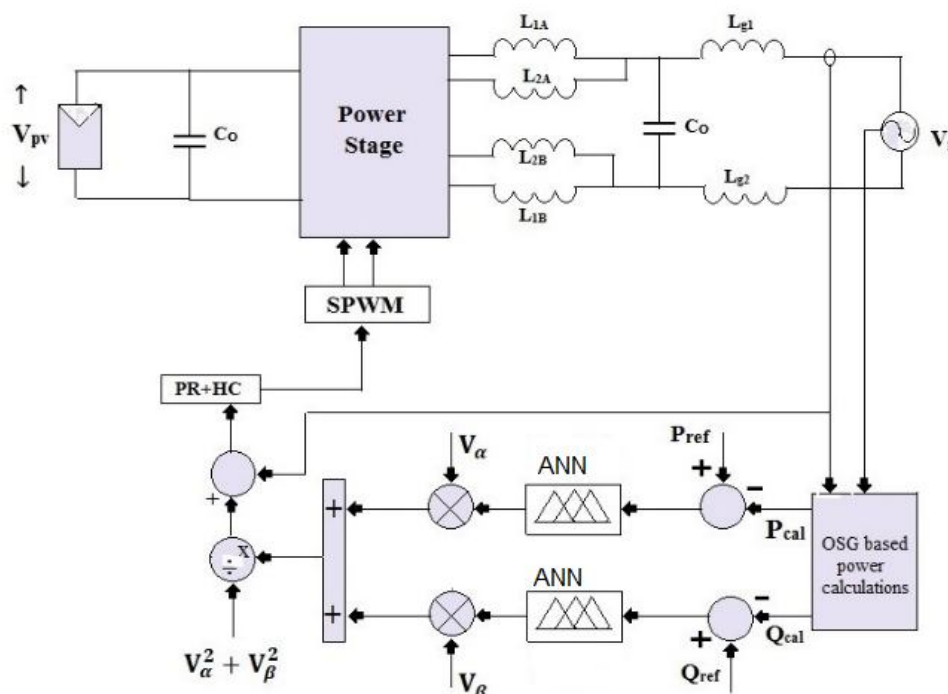


Fig-11: Block representation of control of proposed system with ANN controller.

4.1. Artificial Neural Networks

Figure 12 shows the basic architecture of artificial neural network, in which a hidden layer is indicated by circle, an adaptive node is represented by square. In this structure hidden layers are presented in between input and output layer, these nodes are functioning as membership functions and the rules obtained based on the if-then statements is eliminated. For simplicity, we considering the examined ANN have two inputs and one output. In this network, each neuron and each element of the input vector p are connected with weight matrix W .

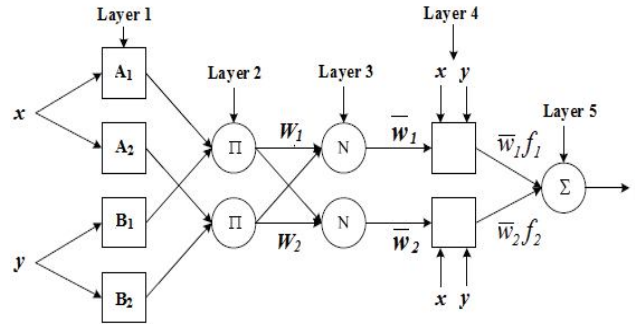


Fig-12: ANN architecture for a two-input multi-layer network

Where the two crisp inputs are x and y, the linguistic variables associated with the node function are Ai and Bi. The system has a total of five layers are shown in Figure 12.

Step by step procedure for implementing ANN:

1. Identify the number of input and outputs in the normalize manner in the range of 0-1.
2. Assume number of input stages.
3. Identify number of hidden layers.
4. By using transig and poslin commands create a feed forward network.
5. Assume the learning rate should be 0.02.
6. Choose the number of iterations.
7. Choose goal and train the system.
8. Generate the simulation block by using 'genism' command.

4.2. Proportional Resonant Current Controller

The block representation of the PR controller with harmonic current compensator depicts in Fig.13 the transfer function of essential contemporary controller are $G_c(s)$, $G_h(s)$ and $G_d(s)$, harmonic compensator, and inverter respectively.

The PR current controller is utilized in the stationary frame which is different from the traditional PI controller. Due to no transformation from stationary frame to synchronous frame, the computation pattern of this controller is simple. For these cases, processor which is less in cost can be used. Besides, when grid imbalances or a sensing error occurs, this controller is more robust than the PI controller. Especially, the PR controller is suitable for constant frequency operation inside the grid-tied system. Generally, the PI controller has an disadvantages to reduce steady state error in stationary reference frame [13],[14]. This controller structure has obtained familiarity due to its ability of removing steady-state error when regulating sinusoidal signals. Moreover, the simple execution of a harmonic compensator without any counter cause on the controller results prepares this controller well befit for grid-linked systems. The transfer function of the PR controller is defined below:

$$G_c(s) = K_{pi} + K_{ri} * \frac{s}{s^2 + \omega_0^2}$$

$$G_h(s) = \sum_{h=2,3,\dots} \frac{K_{ih}s}{s^2 + (h\omega_0)^2}$$

$$G_d(s) = \frac{1}{1 + 1.5T_s s}$$

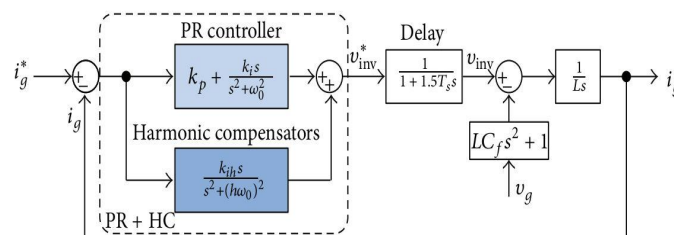


Fig-13: PR controller with harmonic compensator

Where K_{pi} and K_{ij} are the proportional and resonant gain, ω_0 is the fundamental frequency, K_{ih} is the resonant gain at the nth order harmonic, h is the harmonic order, and T_s is the sampling period.

5. SPECIFICATIONS OF SYSTEM

Table 1: System parameters

Inverter Parameter	Value
Input Voltage	400 V DC
Grid Voltage /Frequency	230V/50 Hz
Switching Frequency	20kHz
DC bus capacitor	470 μ F
Filter Capacitor	2.2 μ F
Filter Inductor $L_{1A}, L_{2A}, L_{1B}, L_{2B}$	1 mH
Filter Inductor L_{g1}, L_{g2}	0.5 mH
PV Parasitic Capacitor C_{PV1}, C_{PV2}	75 nF

6. SIMULATION RESULTS

The Analysis of this transformer less inverter topology was performed using the MATLAB/SIMULATION SOFTWARE. The parameters are considered in simulation are given in Table I. in this simulation PV module are replaced with 400V DC Voltage source. C_{PV1}, C_{PV2} are parasitic capacitance between the PV module and ground, which is emulated using thin film capacitor of 75nf. In this phase, assessment of different parameters along with inverter voltage, commonplace mode voltage (CMV), leakage contemporary and the performance of proposed topology underneath adjustments of reactive and actual energy are mentioned.

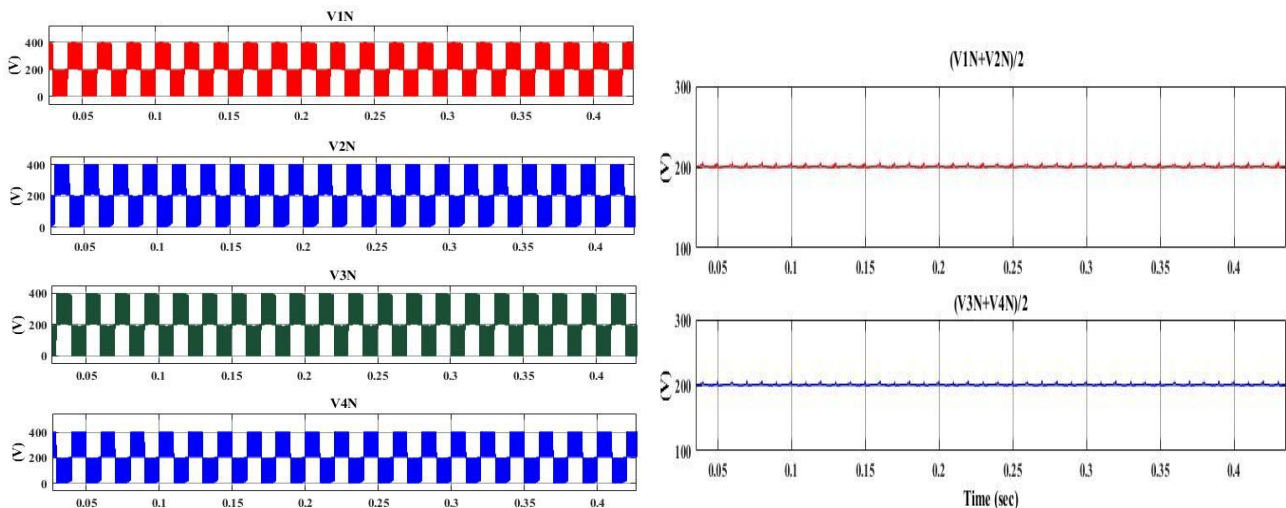


Fig-4: CM characteristics of the proposed topology

The Characteristics of CM voltages for proposed converter topology with pure real and reactive powers are expressed as; for positive half cycle of CM voltage $(V_{1N}+V_{2N})/2$ and for negative half cycle of CM voltage $(V_{3N}+V_{4N})/2$.

The characteristics of CM Voltages (V_{1N} , V_{2N} , V_{3N} and V_{4N}) are depicts in figure 14. Due to the fluctuation of CM voltage. However, the peak and RMS value of leakage current flows through this topology depicts in figure 15.

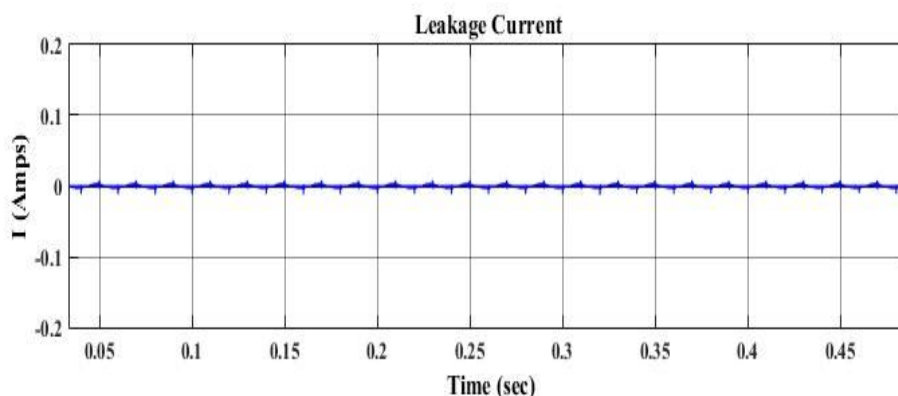


Fig-15: Simulation Result for Leakage Current

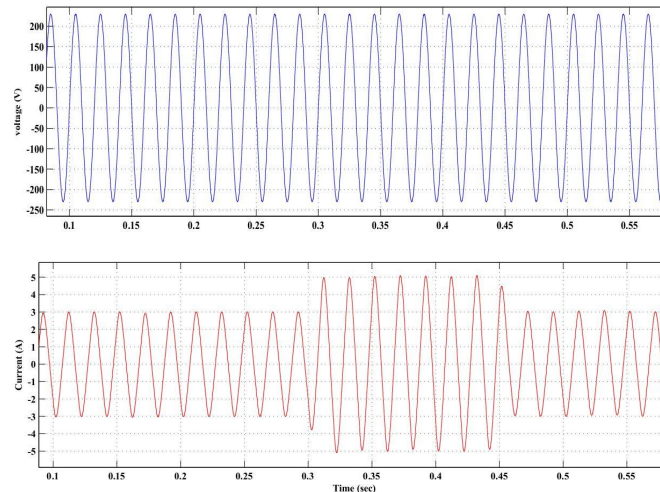


Fig-16: Performance of Grid Voltage and Current

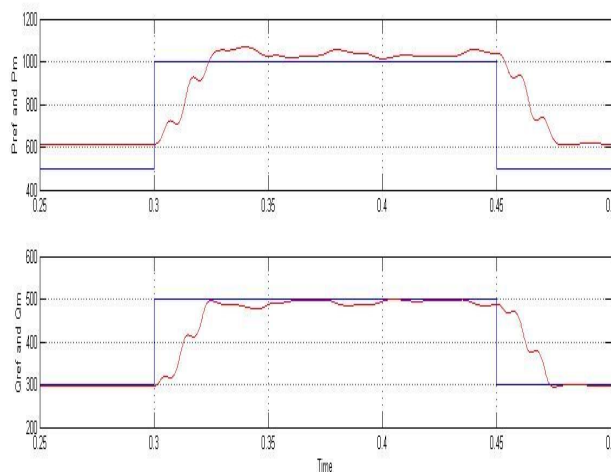


Fig-17: Performance of Grid active and Reactive Powers

The dynamic performance of the proposed system is simulated under changes in both P_{ref} and Q_{ref} . The simulation results of Grid Voltage and Current and its measured active and reactive powers are shown in figure 16 and 17 respectively.

From the results, it shows that there is a change in grid current with respect to step change in load and the active and reactive powers tracks the reference powers. From the results, there is very low distortion in grid voltage and current, hence the leakage current flows through the system is also very low

7. CONCLUSIONS

This paper Proposes a system for governing the flow of current from PV system when with the grid depended on ANN controller. PV system with inverter topology and its regulation action was developed using MATLAB / Simulink environment. With the Proper design of ANN and PR controller, the proposed PV inverter had succeeded in producing an excellent response, where the output current of inverter was sinusoidal and the harmonic values met with international standards. The Simulated Results have been analyzed.

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ENTREPRENEURIAL INTENTION OF STUDENTS IN HIGHER EDUCATION SYSTEM: SOME ASPECTS

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ABSTRACT

In a factor driven economy like India, the ability to think 'out of the box' is seldom encouraged. New and exceptional ideas in any field lack the required support, thus, acting as a major hindrance for budding entrepreneurs. This very impediment deters the prospects from assuming any risk of opting to be an entrepreneur, rather, follow the convention of seeking employment. Apart from the several other remedial measures, the education system of the country needs to be effective enough so that entrepreneurship is projected as a career alternative. The seed of entrepreneurship needs to be sown among the youth through the education they receive which can help develop an entrepreneurial mindset. Applying appropriate methodology in idea based entrepreneurial innovation, this paper, aims to measure the entrepreneurial intention of post graduate students of educational institutions in Assam, in a gendered perspective. This gendered comparative study attempts to associate the 'gender' variable with entrepreneurial intentions. The results of the study exhibit medium to low intentions of the students, which implies entrepreneurship is not a preferable career option for them. Moreover, analysis of the data reveals that entrepreneurial intention of the students varies on the basis of their gender.

Keywords: entrepreneurship, entrepreneurial intention, entrepreneurial mindset, innovation, factor driven economy

1. INTRODUCTION

In the vast domain of entrepreneurship literature, an entrepreneur has been defined emphasizing on diverse aspects, viz. 'innovation' (Schumpeter, 1947; Cochran, 1968; Drucker, 1985), 'risk assumption' (Knight, 1921; Palmer, 1971; Rosenberg, 1983), 'value creation' (Say, 1815; Bruyat and Julien, 2001; Fayolle, 2008), 'venture creation' (Collins, Moore and Unwalla, 1964; Smith, 1967; Brereton, 1974; Komives, 1974; Mancuso, 1979; Schwartz, 1982), 'opportunity recognition' (Smith, 1967; Meredith, Nelson and Neck, 1982; Kirzner, 1983; Stevenson and Gumpert, 1985). It is implied from these literatures that an individual creating a venture of his own without anything new about it, can be regarded as an entrepreneur since he assumes risk and creates value. However, for an enterprise to sustain in the long run, innovation is the key since anything novel and distinct provides an edge over the competitors. An individual's creative approach in launching a venture can significantly contribute to the economy in the long run.

"Innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or a different service. It is capable of being presented as a discipline, capable of being learned, capable of being practiced. Entrepreneurs need to search purposefully for the sources of innovation, the changes and their symptoms that indicate opportunities for successful innovation. And they need to know and to apply the principles of successful innovation." (Drucker, 1985)

"Innovation and entrepreneurship are closely connected concepts. It is argued that entrepreneurs disrupt market equilibrium by introducing new product-market combinations into a market, better fulfilling the needs of consumers as well as the environment, and driving out less productive firms as their innovations advance the production frontier. Innovation goes beyond just creating novel products and services. To commercialise their innovations, entrepreneurs need to identify new market niches and develop creative ways to offer, deliver and promote their products. All of this requires an awareness of competitive offerings, and the ability to incorporate this knowledge into distinct products and services." (GEM, 2016)

An entrepreneurial mindset and innovativeness of the youth are inversely proportionate to the ever lying employment crisis in the country. A mental preparedness of the students and youths regarding self employment is considerably crucial in today's time. In simple words, entrepreneurship should be considered as a desirable career alternative after completion of studies. The prospects need to have intent to start up and innovate. Even though entrepreneurial intention and innovation go hand in hand, however, intention may also precede innovation at times since without the intent to initiate a venture of his own, the individual does not yearn to conceive anything fresh and original. Reverse may be true as well. Since the individual innovated a new concept or product, he may decide to commercialise it on his own i.e. his innovation paved away for his entrepreneurial intent. Keeping in line with this strong correlation between intention and innovation, this paper attempts to measure the entrepreneurial intention among the male and female post graduate students.

2. OBJECTIVES OF THE STUDY

The study has been carried out based on the following objectives:

- To measure entrepreneurial intention of post graduate students of Kamrup district of Assam;
- To analyse the association of gender variable with entrepreneurial intention of the students under study.

Keeping in consideration with second objective, the study has been carried out with the following hypothesis:

H₀: There is no association between entrepreneurial intention and gender of students.

3. METHODOLOGY

The research method used to fulfill the objectives of the study is detailed below:

- **Area of the study:** The study has been carried out in Kamrup (Metro) district of the state of Assam. The district covers an area of 955 Sq. Km. with a total population of 1253938 as per the 2011 Census.
- **Universe of study:** The population of the study comprises of the students pursuing Master's Degree of Commerce and Business Administration streams only in the approved/ affiliated (AICTE/ Gauhati University) educational institutes of Kamrup (Metro). The study primarily focuses on the students pursuing post graduation since these students are in their final stage of building their career and are confronted with career choice decisions. The basis for concentrating only on students of Commerce and Business Administration streams is that these two disciplines acquaint the students with business planning, book keeping and financial management, market competitiveness and various other aspects of marketing and human resource management which are essential for starting up and maintaining a business venture.
- **Sampling technique and sample size:** A convenience sampling technique has been adopted for the present research enquiry. The researcher has selected students from two MBA institutes and two M.Com institutes as the sample for the study. The distribution of the sample is shown in the following tables:

Table-3.1: Sample Distribution of the select MBA institutes

Sl. No.	Name of The Institute	Sub sample size
1.	Assam Down Town Group University	49
2.	NERIM (North Eastern Regional Institute Of Management)	29
Total Sub Sample of students of MBA		78

Source: Field survey by the researcher, 2018

Table-3.2: Sample Distribution of the select M.Com institutes

Sl. No.	Name of The Institute	Sub sample size
1.	Department Of Commerce, Gauhati University	23
2.	KC Das Commerce College	19
Total Sub Sample of students of M.Com		42

Source: Field survey by the researcher, 2018

Therefore, the sample size for the study = $78 + 42 = 120$

- **Sources of study:** The present study is based on both primary and secondary sources.
 - a) Primary data have been collected from the students of the select institutes (as shown in table 3.1 and table 3.2)
 - b) Various related official websites, records, books, journals, statistical handbooks etc have formed the basis for collecting secondary data.
- **Tools for data collection:** The literature review identifies the use of questionnaires specifically designed for measuring entrepreneurial intention and motivation. On this backdrop, a questionnaire has been framed to measure students' entrepreneurial intention based on the studies of Fatoki (2010), Malebana (2014), Solesvik (2013), Nieuwenhuizen (2015), Lashley (2010), Linan (2006), Linan (2011), Walter (2013), Sánchez (2013), and Lee (2005). From the previous studies, it is clear that entrepreneurial intention is a measure of attitudes towards behaviour, subjective norms and perceived behavioural control (Theory of planned behaviour, Azjen, 1991). Therefore, the questionnaire consists of the following parts designed with the help of five point Likert Scale-

Part A- questions relating to demographic information of the respondents

Part B- questions determining students' attitude towards entrepreneurship as a career option

Part C- questions determining students' perception towards subjective norms

Part D- questions measuring students' perceived behavioural control

Part E- questions measuring students' entrepreneurial intention

4. ENTREPRENEURIAL INTENTION

With the rise in number of graduates each year in the country, employment has become a major concern today. The rates of unemployed youth are soaring high in the recent years. This is evident from the following table:

Table-4.1: Rates of unemployment in India

	2013-14	2014-15	2015-16
Unemployment rate (%)	2.0	2.1	3.4

Source: excerpt from ILO report, 2016

It is apparent that over the past three financial years (as shown above), the percentage of unemployment youths in the country has surged upward. Out of all the causes that can be attributed to this phenomenon, dearth of jobs and lack of desired qualifications among candidates are the primary ones. India, being the largest democracy, people here look forward to the authorities for panacea of all social and economic ills. In this context, after completion of their degrees, individuals expect to place themselves as public servants. The implicit truth is that achieving a government job is an epitome of success in a country like India. It is due to this that individuals make dire efforts to get themselves absorbed in the public sector. However, the authorities are unable to create jobs in tune with the country's population explosion. Another crucial fact is that there has been a demand and supply gap in the job market. Today the top corporates look for recruiting talented bunch of people with specific desired qualifications. However, the quality of education received by a majority is not in line with what these companies seek and therefore, these graduates find it difficult to get themselves placed. Due to such a mismatch, there has been an escalation in the unemployment rates in the country.

Even under such circumstances, people in our country do not find entrepreneurship as a viable career alternative. The GEM Global Report 2016-2017 substantiates this fact in the following table:

Table-4.2: Status of entrepreneurship in India

	Value %	Rank/62
High status to entrepreneurs	46.7	61
Entrepreneurship a good career choice	44.4	57

Source: excerpt from GEM Global Report 2016-2017

The above table depicts ranking of India among 62 countries in terms of the two mentioned criteria. India ranks awfully low when it comes to providing recognition to entrepreneurs as well as while considering entrepreneurship as a career choice. This implies a low intention among the citizens towards opting for entrepreneurship.

Fishbein (1975) defines intention as a "person's location on a subjective probability dimension involving a relation between himself and some action. A behavioural intention, therefore, refers to a person's subjective probability that he will perform some behaviour." Entrepreneurship is, therefore, considered as an outcome of intent of an individual to start up his own venture. A person with a strong 'entrepreneurial intent' would signify that he plans to start his own venture in the near future. The entrepreneurial intent is, thus, "sense of a conscious and planned resolve that drives actions necessary to launch a business." (Thompson, 2009)

The 'theory of planned behaviour' (Ajzen, 1991) is one of the most influential theories of measuring entrepreneurial intention (Sondari 2014, Kolvereid 1997, Linan 2011, Linan 2006, Piperopoulos 2015, Venesaar 2006, Graevenitz 2010, Malebana 2014, Solesvik 2013, Ambad 2016, Usaci 2015). This theory was propounded by Icek Ajzen which explains that intention of an individual is shaped by three antecedents viz. attitude towards behaviour, subjective norms, and perceived behavioural control. Attitude towards the behaviour refers to the degree to which a person has positive or negative assumption of self performance of the behaviours in question. Subjective norms refer to perceived social pressure and influence of other's judgement while performing the behaviour. Perceived behavioural control refers to perceived ease or difficult of performing the behaviour and is related to the concept of self-efficacy. Based on this theory, the aforesaid three antecedents are considered as parameters of measuring intention in this study.

5. RESULTS AND DISCUSSIONS

After compilation, tabulation and analysis of the data so collected, the results can be presented as below:

Table-5.1: Distribution of Respondents Scores as per Likert Scale

	Strongly agree (1)	Somewhat agree (2)	Neither agree nor disagree (3)	Somewhat disagree (4)	Strongly disagree (5)	Total
ATB	240	201	110	30	19	600
SN	100	198	238	115	69	720
PBC	158	141	114	44	23	480
INT	427	450	468	187	148	1680
Total	925	990	930	376	259	3480

The results of the above table can be interpreted on the basis of the antecedents, viz.

- **Attitude towards Behaviour (ATB):** Majority of the respondents have strong attitude towards their entrepreneurial behaviour i.e. they have a positive evaluation of self performance of entrepreneurship.
- **Subjective Norms (SN):** The maximum value in this case falls in the neutral ranking of the scale i.e. majority of the respondents neither agree nor disagree regarding the influence of social pressure while opting for entrepreneurship as a career choice.
- **Perceived Behavioural Control (PBC):** The table shows that high numbers of respondents perceive a full control over the factors related to their entrepreneurship career.
- **Intention (INT):** Finally, the highest value in the distribution regarding entrepreneurial intent is at the mid of the scale i.e. a neutral entrepreneurial intention of the students. They have neither displayed a strong entrepreneurial intention nor a weak one.

Based on the mean of the distribution of 120 respondents, the total intentions were categorized in three categories, viz. High, Medium and Low. The following tables show entrepreneurial intent distributed as per these categories:

Table-5.2: Distribution of Respondents scores on the basis of the select disciplines

Courses	High	Medium	Low
MBA (78)	25 (32%)	26 (33%)	27 (35%)
M.Com (42)	12 (29%)	19 (45%)	11 (26%)
Total (120)	37 (30%)	45 (38%)	38 (32%)

Among the 78 MBA students, majority i.e. 35% displayed a low intention towards opting entrepreneurship as a career option. 45% of the M.Com students have shown medium entrepreneurial intentions. However, intentions of 32% MBA students fall in the High category as compared to only 29% of M.Com students. Out of the total sample, students displaying high entrepreneurial intention are in minority.

Table 5.3: Gender * Intention Cross tabulation						
			Intention			Total
			HIGH	LOW	MEDIUM	
Gender	Female	Count	11	22	22	55
		Expected Count	17.0	17.4	20.6	55.0
	Male	Count	26	16	23	65
		Expected Count	20.0	20.6	24.4	65.0
Total		Count	37	38	45	120
		Expected Count	37.0	38.0	45.0	120.0

Table 5.4: Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.261 ^a	2	.044
N of Valid Cases	120		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.96.

In order to test the hypothesis, a chi square test has been carried out using SPSS Version 16 to determine the association of entrepreneurial intention with the gender variable. Since the *p* value in the above chart (.044) is

less than .05 (5% significance level), so we reject the null hypothesis. This implies that entrepreneurial intention of a student is associated with gender of a student and so it differs on the basis of gender. Table 5.5 provides a detailed analysis of the same.

Table-5.5: Distribution of Respondents scores on the basis of Gender

Gender	High	Medium	Low
Male (65)	26 (40%)	23 (35%)	16 (25%)
Female (55)	11 (20%)	22 (40%)	22 (40%)
Total (120)	37 (30%)	45 (38%)	38 (32%)

With reference to the second objective under study, a gender based analysis has been carried out categorizing the intention into high, medium and low categories. Out of the 65 male students, majority of them i.e. 40% have shown a high entrepreneurial intention while only 20% female students have come under the high intention category. Most of the females (40%) have displayed entrepreneurial intention at the mid of the scale.

6. CONCLUSION

As the results reveal that majority of the students under the study do not exhibit a strong intent towards entrepreneurship as a desired career option, this can have repercussions at the large end. Only if start ups seem as a viable career alternative after studies, then only there will be a switch from job seekers to job creators. An entrepreneurial career is still at an infancy stage in India. We have a long path ahead to witness this drastic transition. The role of education is crucial here, both in terms of developing and encouraging entrepreneurs as well as in begetting a social transformation to accord entrepreneurship with a higher status.

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COLLEGE STUDENTS PERCEPTION TOWARDS JUNK FOOD: A STUDY WITH REFERENCE TO UNDER GRADUATE AND POST GRADUATE STUDENTS

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ABSTRACT

Junk food culture has vigorously uprising trends among the youngsters and it makes people eat without planning. Junk food is easy to make and consume. Generally junk food looks attractive and so yummy for all the age group people not only children but also adults too. However, why everyone loves to eat junk food even after knowing it's truth because it is delicious, affordable and readily available. Junk food effects can include increased risk for obesity, certain types of cancer, cardiovascular diseases, chronic inflammation and other serious condition. Hence, the researcher made an attempt to study the college students' perception towards junk food: A study with reference to under graduate and post graduate students. Here the researcher tried to find out the relationship between junk food healthy or unhealthy and educational qualifications. Out of 160 respondents, 64 respondents are under graduate students and 96 respondents are post graduate students.

Keywords: Junk food, Cholesterol, Obesity, Burger, Fast food

INTRODUCTION**'Junk foods are only to taste, but home foods are always best'**

Junk food all began in 1893 when two brothers Frederick and Louis Rueckheim at the world's fair in Chicago made a concoction of popcorn, peanuts, and molasses that was widely popular. Then their sweets became famous in 1896. Invention of the term is attributed to Michael Jacobson, director of the centre for science in the public interest, who used it first in 1972. But most of the junk food appeared in 20th century.

The junk food has the low nutritional value. A food that is high in fat sodium and sugar is known as the junk food. Junk food is the packaged food or food that is prepared instantly without any time and it is very easy to consume as well. The junk food is made of saturated fats which is very unhealthy. Generally, junk food is consumed by all types of people.

OBJECTIVES

- To highlight the reasons to avoid junk food
- To understand the types of junk food
- To study the college students perception towards junk food

RESEARCH METHODOLOGY**SAMPLING**

For this study, the researchers used simple random sampling method to distribute the questionnaire among college students covering the under graduate and post graduate students with sample size of 160.

TOOLS USED FOR THE STUDY

This study is descriptive in nature. The study is based on primary data and the secondary data. Primary data was collected through the questionnaire and the secondary data was collected from internet, books, and articles. Tabular form and the diagrams (various charts) are used for presenting the data and for testing the hypothesis chi - square test has been used.

HYPOTHESIS

H₀: There is no close relationship between junk food healthy or unhealthy and educational qualifications

H₁: There is close relationship between junk food healthy or unhealthy and educational qualifications

NEED OF THE STUDY

The junk food has become very popular now-a-days. Junk food is also known as fast food, they are usually cheaper. The junk food is easily available anywhere. The junk food is prepared in less time. Despite, of so many advantages there are some disadvantages as it contains the saturated fat that is unhealthy for human being and also decrease the energy levels. So the researcher made an attempt to study the college students' perception towards junk food.

LITERATURE REVIEW

Total and Singh (2007) have explained that the young consumer visit the fast food channels for fun and change.

MOMS EAT JUNK FOOD KIDS GET FAT, studied by WEB MD. Mothers who eat junk food during the pregnancy have obesity - prone children rat studies suggest. This study suggests that the rats mice who ever never tasted the junk food still have desire for it because may be their mother have eaten that this is said that the junk food kids grow faster than the normal kids.

Dingman et al observed that the geographic proximity might increase the fast food consumption within that community.

In this what you call junk food this article written by Brian O'Neil tells us that nowadays the junk food is used widely all over the world. In the study he says that junk food is seen all over in TV, newspapers and many more places.

FINDINGS OF THE STUDY**Reasons to avoid junk food:-**

- **Fats:-**Most processed foods contain the lot of fat. This is generally saturated fat, which can increase LDL cholesterol.
- **Obesity:-** Junk food plays a major role in the obesity epidemic. It increases your risk for cardiovascular diseases, diabetes and many other chronic health conditions.
- **Depression:-** The junk food leads to lots of hormonal changes in teenagers which makes to mood swing and behavioural changes. This leads to depression in teenagers due to lack of essential nutrients.
- **Damage the liver:-** In junk food, there is high number of trans fats found which can cause deposition of fats in the liver which can cause liver dysfunction.
- **Risk of cancer:-**Too much of junk foods that are high in sugar and fat increasing the chances of developing colorectal cancer.
- **Chronically fatigued:-** The junk food has a big affect on the way you feel and your energy levels. Eating junk food regularly can easily suffer from fatigue.
- **Makes us lazy:-** Not only it is bad for health but also makes us lazier because we don't have to cook we can just go out and eat. We can get delivered to us at home.

Types of junk food:-

- **Pizzas:-** It is one of the world's most popular junk food. It tastes awesome and it is loved by all types of generation and it is convenient to eat.
- **Pastries, cookies and cakes:-** It is junk food that is loved by children. There are many different types of pastries, cookies and cakes are available in the market.
- **French fries and potato chips:-** French fries are often served with salt and a side of ketchup, vinegar, barbeque sauce or other sauce. Potato chips are also famous/popular junk food which also comes in a packaged form.
- **Ice-cream:-** Ice-cream is one of the most delicious foods on the planet. Ice-cream is also high calories and it is very easy to eat excessive amounts.
- **Chocolates:-** Chocolates is one of the most popular junk food types and flavours in the world. Chocolates are loved by all types of people. It is in various forms.
- **Burgers:-** It is consumed in the large quantity. It is also very popular. Burgers are consumed by the young adults people while parties or other events.

Table 1: Respondents sample size

Educational qualification	Frequency
Undergraduate	64
Postgraduate	96
Total	160

Source: Primary data

Table 1 indicates that out of 160 respondents, 64 students are under graduate whereas 96 students are post graduate.

Table 2: Respondents consuming junk food

Educational qualification	Yes	No	Total
Undergraduate	60	4	64
Postgraduate	83	13	96
Total	143	17	160

Source: Primary data

Table 2 indicates that out of 160 respondents, 60 undergraduate students consume junk food and remaining 4 students do not consume junk food, whereas 83 postgraduate students consume junk food and remaining 13 do not consume junk food.

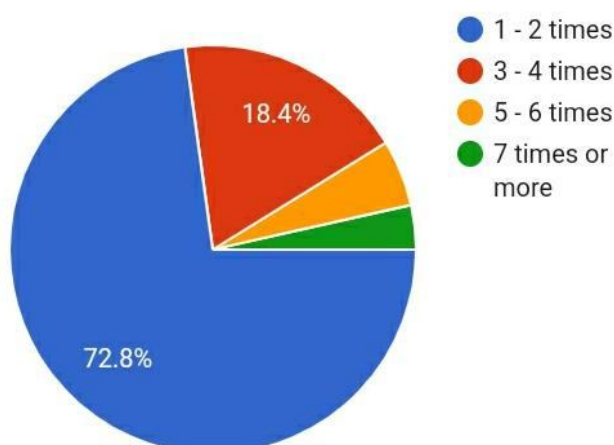
Table 3: Respondents awareness about harmful effects of chemical in junk food

Educational qualification	Completely aware	Partially aware	Unaware	Total
Undergraduate	9	54	1	64
Postgraduate	31	63	2	96
Total	40	117	3	160

Source: Primary data

Table 3 indicates that out of 160 respondents, 9 undergraduate students are completely aware, 54 undergraduate students are partially aware, and 1 undergraduate are unaware about harmful effects of chemical in junk food, whereas 31 postgraduate students are completely aware, 63 postgraduate students are partially aware, and 2 postgraduate students are under about harmful effects of chemical in junk food.

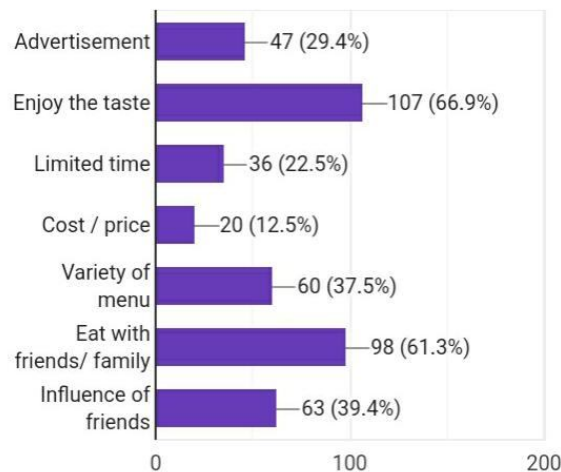
Fig 1: Respondents consuming junk food on weekly basis



Source: Primary data

Fig 1 indicates that out of 160 respondents, 111 students consumes 1 – 2 times, 36 students consumes 3 – 4 times, 8 students consumes 5 – 6 times, remaining 5 students consumes more than 7 times on the weekly basis

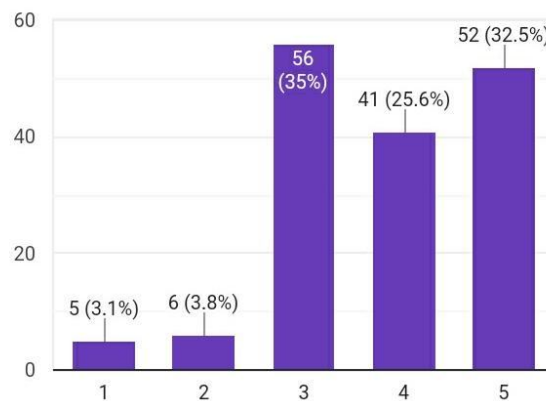
Fig 2: Respondents reasons for choosing to eat junk food



Source: Primary data

Fig 2 indicates that out of 160 respondents, 29.4% students chooses junk food by seeing advertisement, 66.9% students preferred junk food for enjoying the taste, 22.5% students chooses junk food because preparation is done within limited time, 12.5% students prefer junk food for its price, 37.5% students prefer junk food for variety of menu, 61.3% students choose it to eat with their family/friends, 39.4% prefer junk food by influence of friends.

Fig 3: Respondents opinions towards statement “Junk food cause harm to general health”.



Source: Primary data

Fig 3 indicates that out of 160 respondents, 32.5% students strongly agrees with the statement, 25.6% students agrees with the statement, 35% students have neutral opinion with the statement, 3.8% students disagrees with the statement, 3.1% students strongly disagrees with the statement.

TESTING OF HYPOTHESIS

H₀: There is no close relationship between junk food healthy or unhealthy and educational qualifications.

H₁: There is close relationship between junk food healthy or unhealthy and educational qualifications.

Table 4: Respondents opinions regarding junk food

Educational qualification	Healthy	Unhealthy	Total
UG	4	60	64
PG	3	93	96
Total	7	153	160

Source: Primary data

Degree of freedom is 1

Level of significance is 5%

Calculated value	Critical Value
0.897	3.84

Chi - square value=0.897 is less than 3.84, H_0 is accepted.

INTERPRETATION

The chi square analysis shows that null hypothesis, “no close relationship between junk food healthy or unhealthy and educational qualifications” is accepted. Hence, the alternative hypothesis is rejected

CONCLUSION

Junk food is becoming more and more acceptable and convenient in our society. Due to the daily busy schedule there is no time to cook food so junk food is the instant solutions for that all. Although junk food tastes good and eating it's once is fine. But if we eat it frequently it may result in various health issues. Though, there are many advantages of junk food like prepared instantly, low price, varieties there are many disadvantages also like obesity and many other health issues. As per the study there is no close relationship between junk food healthy or unhealthy and educational qualifications.

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- Sam Abraham, Manuel Martinez, Gabriel Salad, Jessica Smith (2018). College students perception of risk factors related to fast food consumption and their eating habits, Journal of Nutrition and Human Health.(Volume 2).

WEB RESOURCES

- www.researchgate.net/publication/323385686_junk_food_consumption_among_secondary_level_students_chitwan.
- www.studymode.com/topic/fast-food.
- www.slideshare.net/mobile/Vaishali_bansal/junkfood-a-study-and-analysis.
- www.researchgate.net/publication/257536304_effects_of_junk_food_and_beverages_on_adolescents_health_a_review_article.

LANGUAGE OF RESEARCH IN INDIA: MAJOR ISSUES VIS-À-VIS QUALITY IMPERATIVES

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ABSTRACT

Language is the medium of expression of the people of a particular region, state or country. It is not only a powerful means to communicate but also a means to think about the events, incidents and phenomena, search reasons for their occurrences, analyze the available evidences, perceive relationships and assimilate knowledge. All these are integral fundamentals of research, the prime means of acquiring and expanding knowledge. Language in which a research endeavour is carried out has a significant impact on its quality. Research always has a social value attached to it. So it must be conducted in a language which is easily understood by both the researcher and the social force for which it is meant. In this paper the author has discussed the issues related to the language usage in conducting research in a multilingual society like India where most of the people prefer to speak their vernacular language. The focus of the paper is on how research conducted in a language with which the research participants are not well versed undermines the quality of research. It also suggests measures to enhance the quality of research and highlights the increasing adoption of vernacular languages in India for academic and research purposes.

Keywords: Language of Research, Linguistic Expressions, Multilingual, Quality Imperatives, Vernacular Language

INTRODUCTION

Language has a great relevance in multilingual and multiethnic societies. In India the Indo-Aryan languages are spoken by the maximum number of speakers, followed in the descending order are the Dravidian, Austro-Asiatic, and Sino-Tibetan (Tibeto-Burman) languages. The Constitution of India designates the official language of the Government of India as Hindi written in the Devanagari script, and English as the 'associate official language'. The successive decennial censuses over the century have categorized the total number of languages spoken today as one hundred and twenty two of which twenty two are included in the Eighth Schedule to the Constitution of India. These twenty two languages are referred to as scheduled languages and given recognition, status and official encouragement. In addition, the Government of India has awarded the distinction of Classical Language to Kannada, Malayalam, Odiya, Sanskrit, Tamil and Telugu on account of their rich heritage and independent nature. Eighteen Indian languages, namely, Assamese, Bengali, Gujarati, Hindi, Kashmiri, Kannada, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, and Urdu are spoken by 96.29% of the population of the country and the remaining 3.71% of the population speak rest of the languages. Remaining plus the 'total of other languages' unidentifiable on the basis of linguistic information available are not included in the Eighth Schedule (Census of India 2011). Owing to such enormous diversity, language plays a vital role in the formation and transformation of different sectors of the country like polity and governance, economy, health care, science and technology and education, to name some of the significant ones. It is the most highly developed symbol of communication and demarcates between human beings and other animals. Gleitman and Papafragou (2012) consider language as a powerful conduit for thoughts that converts our mental representations and ideas into transmissible forms for common understanding among people. With the development of language, higher orders of cognitive thinking are achieved. However, language may not adequately represent all our thoughts and become under-representations or over-representations of our thoughts if the inferential processes operating outside do not match with the linguistic representations. The misrepresentations and misinterpretations of languages are equally dangerous and may lead to blunders. This is particularly at high stake in a multi-lingual country like India. Many times people switch codes between association and dissociation.

In present societies, research has become the buzz word. We rely only on well researched processes, products, policies and programmes. Before venturing into any field we prefer to conduct a little research so that we get an idea of the field and understand the inherent risks and possibilities of growth. This research is slightly different from the conventional meaning of the word 'research' but is significant for effective planning and efficacious execution. Research has great significance in teaching-learning at all levels of education to understand the existing policies, programmes and practices, improve them, evolve new ones with time and carry out innovations for better and enriched results. In order to produce more aware, better adjusted, confident and well informed individuals possessing multifarious knowledge and abilities, continuous research on different aspects of teaching-learning is essential. As such research culture must be adopted by all educational institutions. For

quality research, the researcher must be able to comprehend and formulate the linguistic expressions accurately. So it must be conducted in a language which is easily understood by both the researcher and the social force for which it is meant. Appropriate and effective language plays a pivotal role in conducting quality research that improves teaching-learning practices, touches lives of those concerned and promotes a research culture. Sociolinguists in India have raised a number of issues like co-variance of multiple languages, different home, school and academic language, occurrence of stylistic variation as well as variation across class, gender or age and regional difference in a particular language that make interpretation of research findings difficult for the learning communities.

SIGNIFICANCE OF LANGUAGE AT DIFERENT STAGES OF RESEARCH

Research is a systematic scientific inquiry that aims to explore the unknown aspects of nature and to increase the sphere of the known aspects, to replicate the studies previously conducted, to ascertain their relevance in present times and to understand and solve the problems arising in specific fields. The relationship between research and language can be understood in following three stages; the first two are related to the researching community who conduct research and the third is related to the readers or reviewers.

• Genesis and Process of Research

Any research work initiates when a difficulty is felt. There are primarily three sources to perceive difficulty in an area, viz., observation, experimentation and the accessible repository of literature. All these three sources incorporate some or the other forms of linguistic expression like oral-written, spoken-heard or felt-perceived which underlie the thought processes. In India, there is no specific medium of instruction in higher education. Hence language becomes significant at the entry point and also acts as a barrier in pursuance of education (Sarma & Agrawal, 2010). The choice of language determines the context in which knowledge is situated. Since there is a dearth of literature in vernacular language, the researchers do not find appropriate knowledge in the context of their research problem and have to resort to English to conduct their study. If the researcher is not well-versed with the linguistic expressions, he may not be able to understand the essence of the research problem, misinterpret it or wrongly formulate it. When the initiating point is weak and the research problem is not accurately stated, getting appropriate solutions is a distant dream. Poor understanding of available literature and inarticulate linguistic expression, sometimes result in dysfunctional aspirants who lose their motivation in the struggle between vernacular medium and English. Any piece of information wrongly reported or understood at any point of time affects the entire process of research and poses a serious doubt on the findings of the research.

• Communicating the Research Findings

Research is a social endeavour. The work of the researchers does not get over by just completing the research; they have to share the research findings with the learner communities and all stakeholders by writing the research report and getting it published. Publication is vital to dissemination of knowledge. Here also the role of language is significant. The research report must be explicit but without redundant details. If the language used is not simple and clear, interpretations may be ambiguous and coloured. However, oversimplification also under-represents significant findings. Technical flaws, repetition of words and sentences, culturally unfamiliar words, lack of coherence, logical continuity and uninteresting presentation, and linguistic jargons negatively affect the research report and in due course of time the research which would have otherwise contributed significantly to the existing social values and norms may be completely lost. A significant constraint in Indian research publication is the dominance of English language. The table below throws light on the publication of three major institutions working in the field of education:

Table-1: Publications of Educational Institutions in India

Sl. No.	Educational Institution	Number of Publications	Publications in Hindi /Vernacular Language
1.	National Council of Educational Planning and Administration (NCERT)	8	2
2.	National University of Educational Planning and Administration (NUEPA)	1 (Journal) All other publications are in English	1 (Journal)
3.	National Council for Teacher Education (NCTE)	6 (Journals and Periodicals)	1
TOTAL		15	04

Source: Web pages of NCERT, NUEPA and NCTE

It is evident that the scope of publication in Hindi or Vernacular languages is very limited. Thus, researchers working in vernacular languages not only have limited access to international work, most of which is written in English but their own expression also suffers a lack of appropriate channel. This places a serious constrain in producing quality research.

• Comprehending the Research Findings for Further Uses

Once the research findings are published, they are for the larger societies to read, review, use, replicate, validate or modify as per their needs and interests. The language of the research again affects each of these. If the readers are not well-versed with the language used, or are unfamiliar with the cultural and social backgrounds of the research and if they have not been clearly specified in the research paper or report, or if the research has not been coherently presented, there may be confusion and multiple interpretations. In India, many research works are conducted on ethnic or cultural or social background of individuals. The findings of these research works cannot be generalized to any extent to other ethnic or social or cultural groups unless the conditions in which the particular research work was conducted and its scope are clearly stated in comprehensible language.

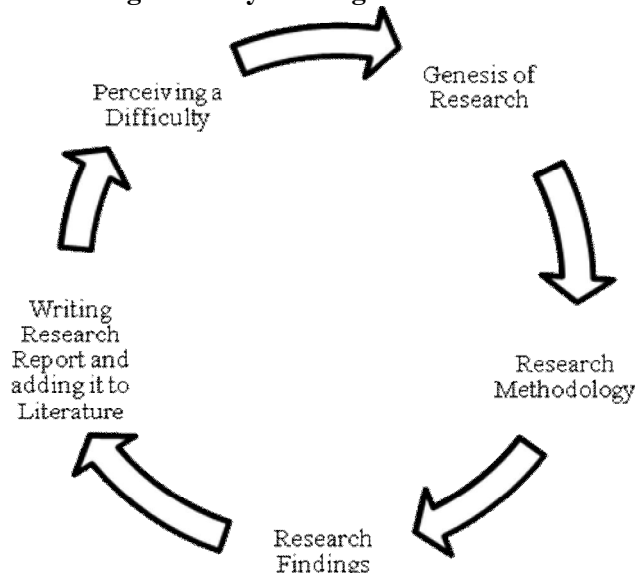
The probable linguistic discrepancies arising at the above mentioned stages of research have been presented in Table 2 below:

Table-2: Research Stages with Their Linguistic Discrepancies

Stage of Research	Probable Linguistic Discrepancies	Consequences
Genesis and Process of Research	Unfamiliar linguistic expressions, improper interaction with learning and human resources, less access to context-based meaningful knowledge	Inadequately stated research problem, faulty lineation of evidences, ambiguous interpretations, inaccurate solutions
Communicating the Research Findings	Grammatical incorrectness, repetition of words and sentences, use of ambiguous words or culturally unfamiliar words, lack of coherence and logical continuity, uninteresting presentation and overuse of jargons	Significant findings are undermined
Comprehending the Research Findings for Further Uses	Language unfamiliar or not comprehensible to the readers	Improper generalization, confusion and multiple interpretations

Further, the above three discussed stages of research are explicitly depicted in Figure 1. Each significant research publication becomes a source of review and reference for many other research works. Newer difficulties are identified as research problems in the light of the research works previously accomplished. These stages of research repeat themselves in a cyclic manner, so with the passage of time the cumulative effect of language discrepancies tend to deteriorate the quality of research and affect the teaching-learning programmes and processes.

Figure-1: Cyclic Stages of Research



MEASURES FOR QUALITY IMPERATIVES

In the present time when there is influx of information from all sides, teaching-learning has become an ever-evolving process. If changes are not incorporated in tune with the needs of the global scenario, individuals will not fit in the society and this will impact all sectors of our society adversely affecting the stand of our country amidst others. Hence, in order to develop a system that continuously updates itself with time; every educational institution must internalize a research culture. Sound knowledge of research methodology is vital for conducting quality research. In this paper, however, the authors have kept research methodology outside the purview of their discussion and focused mainly on the linguistic aspects of research. Some of the probable measures for enhancing the quality of research commensurate with the present day requirements are:

- **Researchers as Voracious Readers**

A research endeavour always initiates with a problem. However, the problem cannot just arise from nowhere. The source of research problem is a felt difficulty. Researchers can perceive this difficulty and specifically state it in a crisp manner only when they read a lot and have a comprehensive knowledge of different fields. Any significant research cannot confine itself within rigid boundaries. Its offshoots spread to different fields and draw information from them. Hence researchers must be well informed. This has to be done consciously by them. An added benefit that is gained in the process is an enriched vocabulary of the language or languages, various ways and forms of expression, interesting presentation styles and culture specific and culture free usage of words and sentences. There was a time when academicians and researchers like Gandhi and Tagore were adept in writing in more than one language. But today, the linguistic skills of researchers have got limited to either English or Vernacular language. So, they fail to grasp the essence of international language and connect to the problems of the local communities at the same time. Hence, it is essential to incorporate intensive reading habit. Reading good books not only increases the panorama of life but also equips them with the tool of language proficiency which they can use to carry out the research works efficiently.

- **Researchers as Participant Observers**

As already stated research is a social endeavour. So it cannot be completed in isolated settings. As such before initiating a research work, as far as possible the researchers must spend some time with the social, cultural, academic and other groups that form the focal point of their research; this is particularly significant in ethnographic and ethnomethodological research. This will provide them practical knowledge about the individuals or groups. They will feel an attachment towards them and become more accountable towards their research undertaking. They will also come to know about the language of these people, actual meaning and interpretations of different words in their culture and can use this knowledge in reading and understanding theoretical texts, framing tools of research, analyzing the data collected, interpreting them, drawing meaningful conclusions and generalizing under specified conditions. An important task associated with a meaningful research endeavour is creation of a literary resource in the language of the readers, beneficiaries and the learning communities.

- **Researchers as Lexicographers**

Researchers must develop their own dictionary. This dictionary should contain words not only with their literal meanings but also their usage in different contexts. It should also have an exhaustive list of words used and not used in different cultures. This is important as researchers must remember the fact that knowledge of a grammatical system must be complemented by culture-specific meanings (Thanasoulas, 2001). Such a dictionary cannot be developed in a day. It takes a long time and concerted efforts. Researchers must inculcate a habit of noting down the significant aspects of everything that they observe with their meanings and intent 'Ones a researcher, always a researcher' should find true with them. This will further sharpen their literary skills. They will be able to understand people, their cultures, social obligations and problems in a better way, undertake significant research works and make effective contributions in the developmental processes.

- **Reporting Research in the Researchers' Language**

Researchers must report the research finding in the language with which they are comfortable. Since they are familiar with the words of their language and their usage, they will be able to prepare impressive research reports highlighting all the significant aspects. We use schemas to perceive situations and problems, search for their solutions and devise strategies to deal with their future occurrences (Nishida 1999). If we were to verbalize the entire process, it would be through our language. If the representations of our schemas and their linguistic representations do not match, we will be left with impoverished expressions which will bring down the quality of our work. Hence researchers must make use of their own language in making their research findings explicit. While doing so, they must be cautious of grammatical correctness, avoid repetition of words and sentences, use

socially accepted and culturally familiar words maintaining the logical continuity and coherence of their presentation.

Besides all these, the researchers must abstain from the pre-conceived notions or generalized viewpoints about a specific subject while conducting and reporting their research undertakings. For example, though caste based discriminations are not good for any social set-up, the existing caste based systems help the researchers to study the differences amongst the different castes and ascertain their implications. This may be beneficial to device measures to eradicate them in future. Researchers must be very alert in the selection of words while reporting their research findings. Errors in their use may put their research findings at high stakes.

CHANGING SCENARIO OF LANGUAGE USAGE IN INDIA

In the last decade, Indian Government, non government organizations and masses have realized the significance of native and vernacular languages in all the vital sectors of life. Dr. Manmohan Singh, the then Prime Minister of India emphasized the need to invest in building the knowledge base of the coming generation at the launch of the National Knowledge Commission in 2005. It was felt vital to translate materials for increasing access to knowledge in several critical areas to broaden and strengthen people's participation in education and continuous learning. With this, National Translation Mission was launched for the promotion of knowledge text translation in all the major disciplines of study and its publication thus providing support to research and development. Besides, all the major Indian start-ups are increasingly adopting vernacular languages to reach out to the masses. Many apps in vernacular languages have also been introduced. According to a study by KPMG in India and Google (2017), it is expected that by 2021, 201 million Hindi users, i.e., 38% of the Indian internet user base would be online. The growth of any website or app would be possible only if they are able to expand and increase their audience as English-speaking netizens are already a part of the online hub. With such a promotion of vernacular languages and rise in the reservoir of knowledge in the language of the larger communities, it is increasingly becoming possible to conduct research and communicate its findings in the language of the research participants.

CONCLUSION

Research must be encouraged at all levels of education for progressive teaching-learning in line with the present day scenario. The purpose of research must not be undermined by arbitrarily selecting a research topic from somewhere, conducting quantitative or qualitative studies in bits and pieces and reporting or copying findings from different sources with fabricated social implications. Research is a much more serious and sincere act, a commitment to the society to which the researchers belong to contribute significantly in its well being. As such it must be undertaken with a lot of dedication. Besides having a command over the research methodology, the researchers must also be watchful of the linguistic expressions used in earlier research works and make articulate use of language throughout their work, appropriately and accurately representing their ethnic, cultural and social connotations for subsequent use by the larger societies. Research conducted in vernacular language is able to touch the lives of the people more and it also serves to build knowledge repositories for the development of future generations.

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STUDY OF SPECTRAL PROPERTIES OF $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ CRYSTAL DOPED WITH Yb^{3+} IONSM. M. Bhavé¹, D. H. Gahane² and S. V. Moharil³¹Ph.D. Scholar, Department of Physics, N. H. College, Bramhapuri, Gondwana University²Associate Professor, Department of Electronics, N.H. College, Bramhapuri, Gondwana University³Retired Professor, Department of Physics, RTM Nagpur University, Nagpur

ABSTRACT

$x\text{Yb}_2\text{O}_3$ -doped $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ ($x = 1, 3, 5, 7$ mol %) phosphors have been with successfully synthesized by using combustion synthesis method. at 750°C . The phases of prepared phosphors were confirmed by X-ray diffraction pattern and luminescent properties of phosphor materials were systematically studied. $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ crystallizes in the trigonal system with space group $R\bar{3}m$. As a result of host absorption of $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$, a broad excitation band ranging from 200 to 600 nm is recorded when Yb^{3+} emission was observed, photoluminescence spectra measured suggests the efficient energy transfer from host to Yb^{3+} ions. Upon ultraviolet excitation, an intense near-infrared emission of Yb^{3+} ($^2F_{5/2} \rightarrow ^2F_{7/2}$) is observed in $\text{Li}_2\text{Ba}(\text{MoO}_4)_2:\text{Yb}^{3+}$. All the results indicate that Yb^{3+} doped $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ crystal can serve as UV excited phosphor that is a promising candidate as an associated application for solid state laser.

Keywords: Combustion Method, crystal structure, $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$, Luminescence, Phosphors, solid state laser.

1. INTRODUCTION

In recent years there has been a significant advance of the knowledge on certain families of scheelite-related tungstate and molybdate crystals as rare-earth hosts for solid-state lasers [1, 2], white light emitting diodes (w-LEDs) have attracted great attention for application in solid state lighting [3,4]. $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ belongs to the series of quaternary oxides $\text{K}_2\text{Ba}(\text{LnO}_4)_2$ ($\text{Ln} = \text{Cr}, \text{Mo}, \text{W}$). $\text{K}_2\text{Ba}(\text{CrO}_4)_2$ was used as a corrosion-resistant pigment and metal alloy primer [5], while $\text{K}_2\text{Ba}(\text{MoO}_4)_2$ has been studied as a host for luminescent rare earth ions for lighting applications [6,7].

Among the RE^{3+} ions, Ytterbium (Yb^{3+}) is promising activating ion possessing a number of advantages for laser operations in the $1\mu\text{m}$ spectral region. They possess a very simple energy level scheme constituted of only two levels: ground state ($^2F_{7/2}$) and excited state ($^2F_{5/2}$). Due to such energy level, the Yb^{3+} ion reduces the laser efficiency factors like excited state absorption (ESA), cross relaxation and up-conversion. The Yb^{3+} ion has a small quantum defect hence they can be pumped at 0.94 to 0.98 μm by InGaAs laser diodes resulting in high laser efficiency and offer a certain tuning of the laser emission wavelength. The intense Yb^{3+} absorption lines resulting from the stark splitting are well suited for laser diode pumping near 980 nm [8,9]. When the Yb^{3+} ion is encapsulated with complex molybdates, it results into extra advantages which advance their absorption and emission spectral bands. This advantage is useful for tuning laser diode [10,11] and to generate a short pulse for mode -locking lasers [12-15]. The present work reports on synthesis of Yb^{3+} activated $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ by using combustion synthesis method and analyze the photoluminescent properties required for lightening applications.

2. EXPERIMENTAL SECTION

2.1 Material and Method

$\text{Li}_2\text{Ba}(\text{MoO}_4)_2:\text{Yb}^{3+}$ phosphors were prepared through combustion technique. The starting AR grade materials (99.99% purity) taken were barium nitrate ($\text{Ba}(\text{NO}_3)_2$), ammonium molybdate ($(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}\cdot 4\text{H}_2\text{O}$), Ytterbium oxide (Yb_2O_3), and urea (NH_2CONH_2) were used as fuel for combustion. In the present investigation, materials were prepared according to the chemical formula $\text{K}_2\text{M}_{1-x}(\text{MoO}_4)_2:x\text{Yb}$. The solution of reagents was mixed together to obtain a homogeneous solution. Yb^{3+} ion was introduced in the form of $\text{Yb}(\text{NO}_3)_3$ solution by dissolving Yb_2O_3 into HNO_3 solution. The molar ratio of Ytterbium rare-earth ions was changed in relation to $\text{K}_2\text{Ba}(\text{MoO}_4)_2$ phosphor. The compositions of the metal nitrates (oxidizers) and urea (fuel) were calculated using the total oxidizing and reducing valencies of the components, which served as the numerical coefficients so that the equivalent ratio is unity and the maximum heat is liberated during combustion. After stirring for about 15 min, precursor solution was transferred to a furnace preheated to 650°C - 750°C and the porous products were obtained. The stoichiometric amount of redox mixture, when heated rapidly at $\sim 700^\circ\text{C}$ was boiled, underwent dehydration followed by decomposition generating combustible gases such as oxides of N_2 , H_2O and nascent oxygen. The volatile combustible gases ignite and burn with a flame, and thus provide conditions suitable for the formation of phosphor lattice with dopants. Large amounts of escaping gases dissipate heat and prevent the material from sintering and thus provide conditions for the formation of a crystalline phase. Rare earth ion doped $\text{Li}_2\text{Ba}(\text{MoO}_4)_2:\text{Yb}$, Yb ions were introduced in the form of an $\text{Yb}(\text{NO}_3)_3$ solution with the concentration

of the Yb ions varied with $x = 1, 3, 5, 7$ mol%. Photoluminescence properties were analyzed thus synthesized phosphors.

2.2 Characterisation Technique

X-ray powder diffraction (XRD) analysis was performed with Bruker AXS D8 Advance Diffractometer having Cu, Wavelength 1.5406 Å radiation in the 2θ range of 3° to 135° with Si(Li) PSD detector. The optical excitation and emission by samples are measured with Varian, Cary 5000, and spectral range 175-3300 nm UV-Vis-NIR spectrophotometer instrument.

3. RESULT AND DISCUSSION

3.1 Crystal structure and XRD analysis of $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$

Fig. 3.1 represents the XRD patterns of $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$: $x \text{ Yb}^{3+}$ ($x = 0.03$ and $x = 0.05$). From the XRD patterns, it can be seen that no impurities are observed in the resulting product. All diffraction peaks index well match to the standard phase structure of $\text{K}_2\text{Ba}(\text{MoO}_4)_2$ (JCPDS No. 29-0985) with lattice parameters $Z=3$, $a = 6.0051 \text{ Å}$ and $V(\text{unit cell volume}) = 216.55 \text{ Å}^3$, which belongs to space group $R\bar{3}m$.^[16]

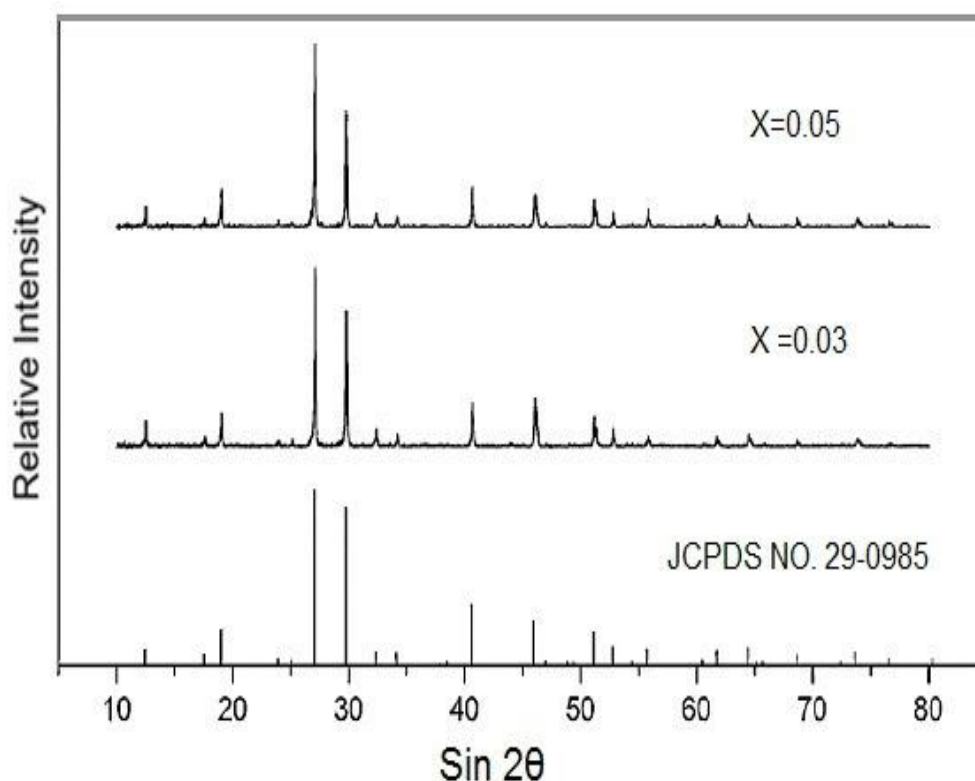


Fig-3.1: XRD pattern of $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$: $x \text{ Yb}^{3+}$ ($x = 0.03$ and 0.05)

$\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ crystallizes in the trigonal system with space group $R\bar{3}m$. One crystallographically independent Li atom, one independent Ba atom, one independent Mo atom, and two independent O atoms are in the asymmetric unit. Rb, Ba, Mo, O₁, and O₂ atoms are at the Wyckoff sites 6c, 3a, 6c, 18h and 6c respectively. In addition, the occupancy of all atoms is 100%. As there are no metal-metal or O-O bonds in the structure, the oxidation states of 1^+ , 2^+ , 6^+ , and 2^- can be assigned to Li, Ba, Mo, and O respectively and in this way charge balance can be achieved.

As shown in Figure 3.2 (A) and Figure 3.2 (B), its structure can be characterized as consisting of layers of MoO_4 tetrahedra corner-sharing with the distorted BaO_6 octahedra. These layers are perpendicular to c-axis of the unit cell, and they are separated from each other by bi-layers of cations lithium in 10- coordinate environment which share faces with the BaO_6 octahedra.

Since three Mo-O lengths $d(\text{Mo-O})$ are $1.764(3) \text{ Å}$, and one Mo-O length $d(\text{Mo-O})$ is $1.738(7) \text{ Å}$, the polyhedron MoO_4 may be denominated as regular tetrahedron. The Ba atom in the structure has a octahedral oxygen coordination with Ba-O bond length $d(\text{Ba-O}) = 2.783(4) \text{ Å}$, shorter than that of BaO [$2.791(3) \text{ Å}$]^[17], and longer than that of BaO₂ [$2.570(4) \text{ Å}$]^[18].

The bond length of Rb-O falls within $2.772(7)$ – $3.167(5) \text{ Å}$, which is comparable to that observed in $\text{Rb}_5\text{ErHf}(\text{MoO}_4)_6$ ^[19]. The coordination environments of all cations are described in Figure 3.2 (C).

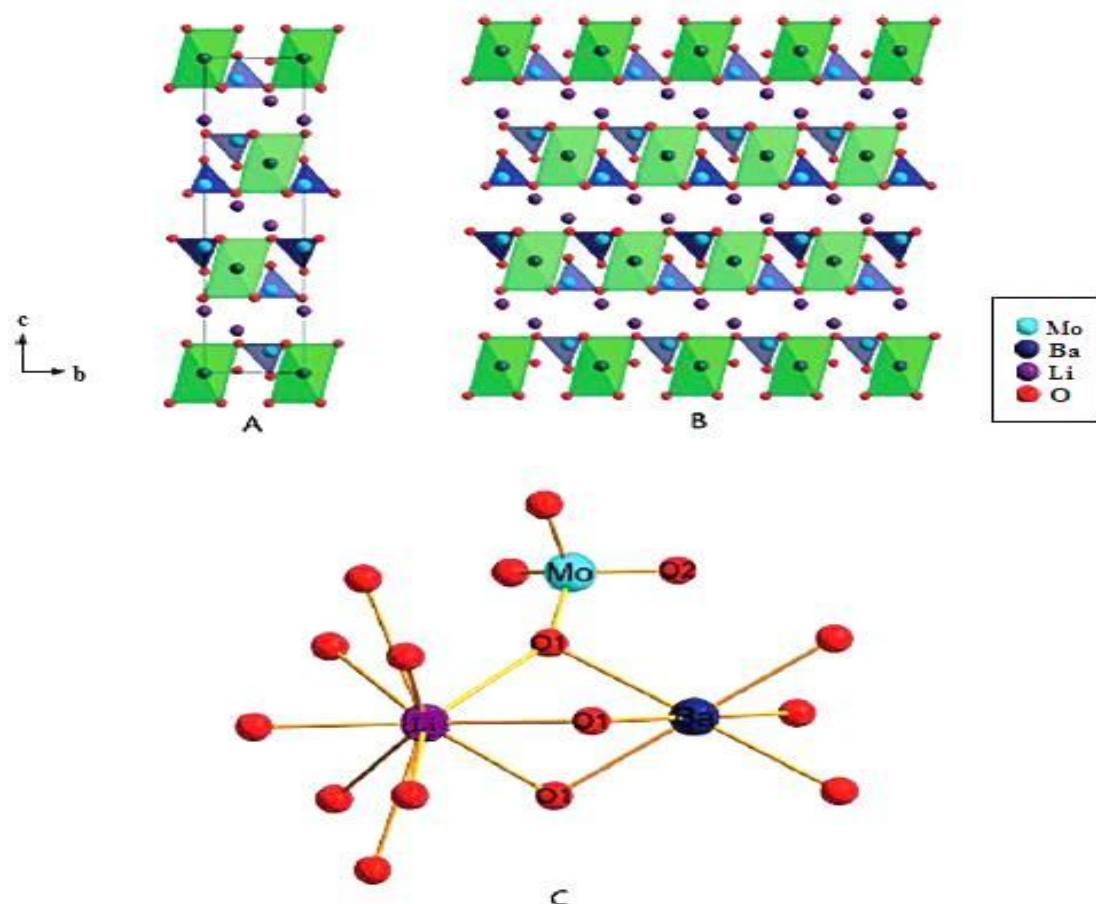


Fig-3.2: (A) Crystal structure of the unit cell of $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ viewed along $(2 -1 0)$ surface, (B) extended structure view of the $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ to emphasize the layering, (C) coordination environments of all cations.

3.2 Photoluminescence Properties

Typical for Yb-doped materials, there is a NIR emission spectra for $x\text{Yb}_2\text{O}_3$ -doped $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ ($x = 1, 3, 5, 7$ mol%) phosphors in the wavelength range of 900-1100 nm in Fig 3.3. Under the excitation of UV light of 299 nm, the emission spectra are composed of groups of broad peaks, which belong to the characteristic of emission of Yb^{3+} ion. The first emission peak is at 982 nm and second emission peak is at 996 nm, originating from the electric dipole transitions $^2\text{F}_{7/2}$ to $^2\text{F}_{5/2}$ of Yb^{3+} , which reveals that Yb^{3+} ions occupy the lattice sites without inversion symmetry.

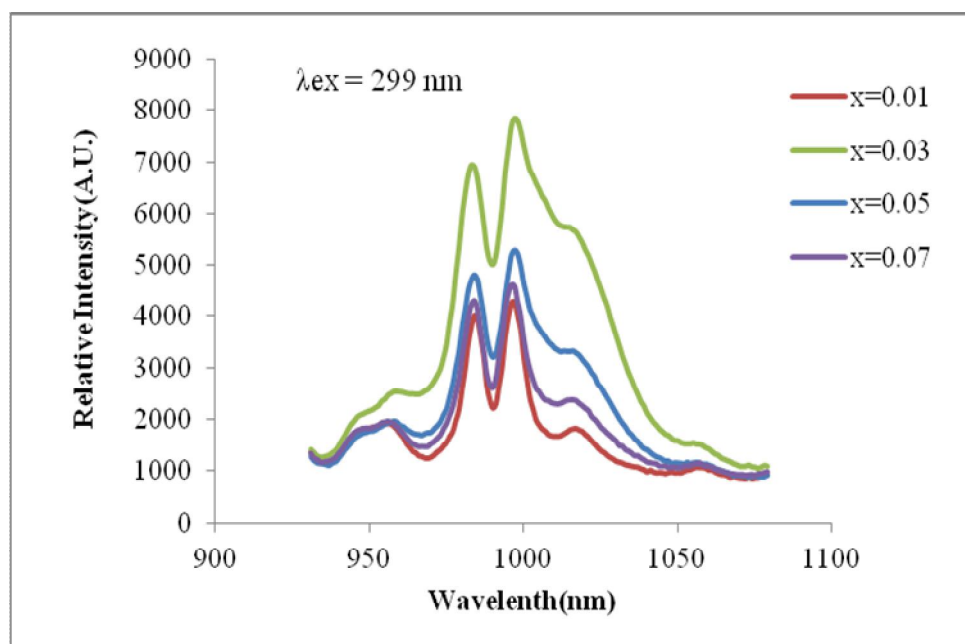


Fig-3.3: Emission spectra of $x\text{Yb}_2\text{O}_3$ -doped $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ ($x = 1, 3, 5, 7$ mol%) phosphors

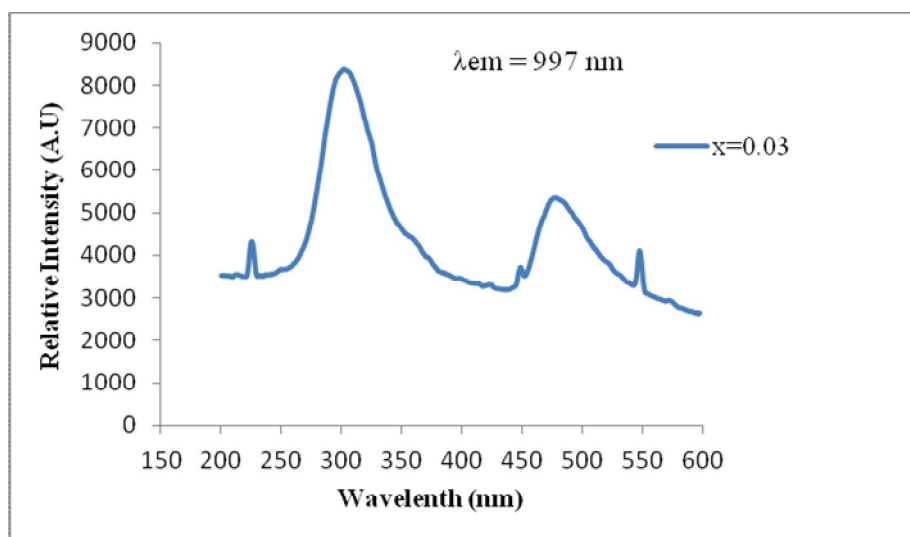


Fig-3.4: Excitation spectra of $\text{Li}_2\text{Ba}_{0.99}(\text{MoO}_4)_2: 0.03 \text{ Yb}^{3+}$ phosphor

The excitation spectrum of $\text{Li}_2\text{Ba}_{0.99}(\text{MoO}_4)_2: 0.03 \text{ Yb}^{3+}$ phosphor is shown in Fig. 3.4. It can be seen that the excitation spectrum monitored under 997 nm composes of a wide band centered at 300 nm and several peaks of sharp and broad lines. The sharp band from 200 to 230 nm is attributed to the electric charge transfer (C-T) transition of $\text{O}^{2-} \rightarrow \text{Mo}^{6+}$ and $\text{O}^{2-} \rightarrow \text{Yb}^{3+}$. Other peaks in the range of 250–600 nm originate from the intra-configurational transitions of Yb^{3+} ions in the host.

3.3. Effect of molar concentration of Yb^{3+} ion

The doping concentration is one among the necessary factors influencing the performance of light materials^[20]. Therefore, it's necessary to grasp optimum doping concentration. The emission intensity of $x\text{Yb}_2\text{O}_3$ -doped $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ ($x = 1, 3, 5, 7$ mol%) phosphors excited by 299 nm is shown in Fig. 3.5.

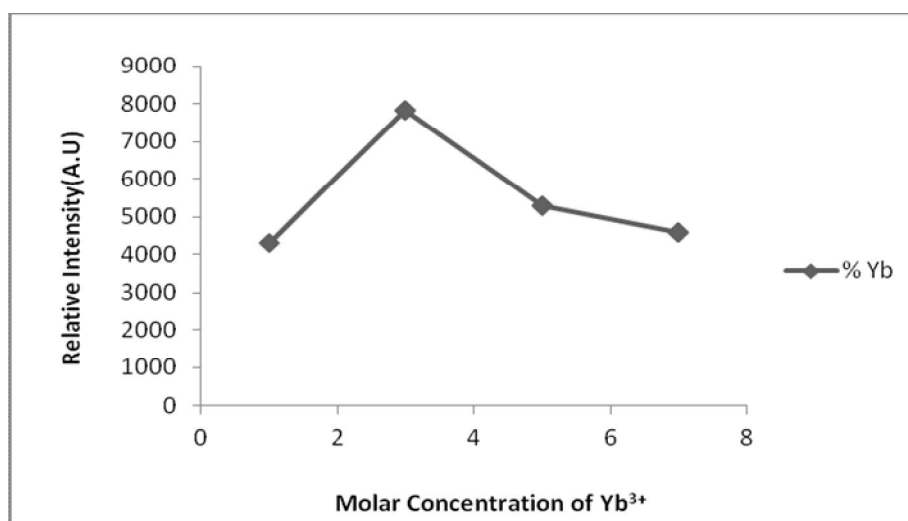


Fig-3.5: The emission intensity of $x\text{Yb}_2\text{O}_3$ -doped $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ ($x = 1, 3, 5, 7$ mol%) phosphors

It can be seen that the emission intensities of samples increase with the doping concentrations of Yb^{3+} ions, and the intensities will decrease after the highest value at $x=0.03$ because of the concentration quenching effect. Thus, the optimum concentration for Yb^{3+} ions in $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ host is $x=0.03$.

4. DISCUSSION

In conclusion, $x\text{Yb}_2\text{O}_3$ -doped $\text{Li}_2\text{Ba}(\text{MoO}_4)_2$ ($x = 1, 3, 5, 7$ mol%) phosphors have with successfully synthesized by using combustion synthesis method. XRD reveals that the structure of the compound consistent with the standard PDF card available JCPDS no. 29-0985. The PL emission spectra of the phosphor materials show two peaks at 982 nm and 996 nm, originating from the electric dipole transitions $^2\text{F}_{7/2}$ to $^2\text{F}_{5/2}$ of Yb^{3+} that reveals that Yb^{3+} ions occupy the lattice sites without inversion symmetry. The emission intensities of samples increase with the doping concentrations of Yb^{3+} ions, and therefore the intensities can decrease when the highest value at $x=0.03$ that may be a sign of concentration quenching in the experiment. The emission intensities of samples cover the NIR region that suggests that these samples could have been a promising candidate in solid-state laser application.

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THE IMAGE/TEXT INTERFACE IN THE VISUAL ARTS WITH SPECIAL REFERENCE TO THE TEXT-BASED WORKS OF SUBODH GUPTA, SHILPA GUPTA AND JATISH KALLAT

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ABSTRACT

The perennial demonstration of the image/word paradigm as a logical/natural means of communication is as old a paradigm as pictograms or ideograms of prehistoric and ancient traditions. Reminiscent of the great traditions of illuminated manuscripts, illustrated manuscripts, calligraphy, print technology the story of image/word may have various moments of inception or nature of origin in different cultural contexts but in the modern world they have kind of synthesized in our blackboards/smart classrooms, kindergarten schoolbooks, newspapers, comics, graphic novels, multimedia and so on. In the history of modern art, Rene Magritte's Pipe is a classical case in point, as it conspicuously demonstrates the problematic relation between the pictorial and the linguistic. The radical use of text as a semiotic intervention in Conceptual art of 60s/70s west was informed by the postmodern theories in general and the moment of transition from structuralism to post-structuralism in particular where artists assumed a philosophical stance to negotiate the self-reflexive position of art as a language. For many the old painterly painting was either dead or thrown into exile and what consumed the new painting surface was the influx of text. Tracing its development in the western art and locating its presence in Indian art, the present paper seeks to investigate the moments of convergence, intersection, or interface between image and text in visual arts and how such interventions redefined art and how it called for a renewed response from the audience.

Keywords: Dematerialization, Postmodern Art, Post-Structuralism, Semiotics, Structuralism.

"Formerly, the image illustrated the text (made it clear); today, the text loads the image, burdening it with a culture, a moral, an imagination." Roland Barthes

"Seeing comes before words. The child looks and recognizes before it can speak." John Berger, *Ways of Seeing*

Art history is witness to various moments of transition or transgression in terms of painters indulging into poetry, or more strictly, painters juxtaposing their visual vocabulary with verbal elements. The example of the poet-painter, William Blake in the west and Rabindranath Tagore in India, is worth recalling. Blake, inspired by the medieval illuminated manuscripts, sought a fusion of his poetry and painting in order to empower his thematic concerns of innocence and experience by illustrating his poems in his distinctive technique of relief etchings. At the outset the visual impact complements the verbal aura. At a deeper level, more than a mere supplement to the poetry, the engraved plates anticipate a complex relation between the image and text. Rabindranath Tagore's erasures is an interesting example of a poet, as if, confronted with the writer's block and in the event of erasing/obliterating or altering his words he may have discovered an image that he worked on until he forgot about composing the poem and indulged into making art. In his late 60s Tagore set out to his newfound vocation as an artist and soon was considered by many as the father of modern art in India. Born out of his beautifully handwritten manuscripts, Tagore's art is known for its inherent rhythm and childlike ease. The tangled, crisscrossed, doodle like images are an explicit repertoire of a poet struggling with his modest tools: pen, ink and paper and the way this struggle transforms/transport him from a man of letters to an image-maker. As he writes: "I try to make the corrections dance, connect them in a rhythmic relationship and transform errors into adornment."

The equation between images and words is as complex as, one may say, the equation between seeing and knowing. As John Berger points out 'the relation between what we see and what we know is never settled'¹, which is further echoed in Michel Foucault's understanding of Rene Magritte's painting called 'The Betrayal of Images, 1928-29' when he states that 'the relation of language to painting is an infinite relation'. The painting is unambiguously self-explanatory. The realistic representation or utterly recognizable smoking pipe is counteracted by the precise and boldly rendered writing beneath it, which reads: *Ceci n'est pas une pipe*, ("This is not a pipe"). The painting's paradoxical position has generated a considerable discussion engaging, not only artists and art theorists, but influential thinkers from across the disciplines. Foucault's reading of pipe states: "Magritte shows everything that can be shown: written words, a visible object. But his real aim is to show what cannot be pictured or made readable, the fissure in representation itself, the bands, layers, and fault-lines of discourse, the blank space between the text and the image."² This ever-present-gap, or what Foucault calls 'blank space, between words and images is further accentuated in his more radical stance in the work called *The Key of Dreams*, which is a blatant demonstration of what you see is not what you know.

As Foucault explains, Magritte disturbed the traditional bonds of language and image and the text resumed its place—below the image, supporting, the task of “naming” and becoming “the legend.” Meanwhile the form is released and re-ascends, floating anew in its natural silence. Magritte returned to a simple correspondence of image to legend or of word to thing. He names what does not need to be named and denies that the object is what it is. In redistributing the text and image in space, each retains its place and the text affirms its own autonomy... The exteriority of written and figurative elements are symbolized by non-relations between the painting and the title. A gulf prevents the reader/viewer at the same time, because Magritte named his painting in order to draw attention to the very act of naming. According to Magritte, “Between words and objects one can create new relations and specify characteristics of language and objects generally ignored in everyday life... Sometimes the name of an object takes the place of an image. A word can take the place of an object in reality. An image can take the place of a word in a proposition.”³

The dichotomy of image and text, as exemplified by Magritte’s *The Betrayal of Images*, can be applied to the semiotics of Ferdinand de Saussure and Charles Sanders Peirce. This needs to be mentioned here that it was by late nineteenth and early twentieth century that the systematic application of semiotics developed by Peirce and Saussure was applied to the visual arts.⁴ The semiotic reading of Magritte is a good case in point. Laurence Schneider Adams in his book *The Methodologies of Art* points out that Magritte’s *The Betrayal of Images* “seems to speak to the semiotics of both Saussure and Pierce”. That the painting “can be read as link between their semiological positions – between Saussure’s signifier and Pierce’s icon. The stark divide between image and word foregrounds the discourse of mimesis, illusion and truth in painting. Adam further writes: “Magritte’s versitic style appeals to the iconic quality of the sign. As a result, the painted image enhances artifice – the ability to persuade that it is what it is not. It is the linguistic message that breaks the illusion by informing viewers of the icon’s mendacity.”

In Saussure’s system, Signifier and Signified constitute the Sign – as two sides of a coin constitute the coin. The signifier is the sounded or written element of the word, and the signified is the words conceptual element. For Saussure, there is no logical or natural connection between signifier and signified. Their relation is entirely arbitrary. From Saussure’s semiotic position the arbitrariness between the signifier pipe, as a visual claim, is retracted by means of the signified verbal announcement. Saussure’s arbitrariness of the relation between signifier and signified, in other words percept and concept, finds even more pronounced identification in Magritte’s *The Key of Dreams* 1930. The work is sheer iconoclastic in the sense it reverses the order of things/ subverts the logical/natural relation between signifier and signified. Unlike Saussure, however, Pierce finds some natural relation between signifier and signified. It is Pierce’s concept of sign that has been found significant in its relevance to imagery. The tripartite concept of his sign consists of: icon, index, and symbol. The iconic aspect of his sign, which finds some relevance to Magritte’s pipe, is what relates it to something recognizable. From the vantage point of Pierce’s iconic aspect of sign the painted image of the pipe is closer by resemblance to the real pipe than the four letters p-i-p-e.

The painting serves as a model and a starting point to indulge into the history of classical painting and negotiate how Magritte’s painting transgresses, confounds and problematizes the binary oppositions like linguistic signs and plastic elements, resemblance and affirmation, discursive and the non-discursive spaces. In other words, the painting makes a certain spoof on the conventional understanding of painting as a representation, which aligns Magritte’s stance closer to abstraction on the one hand and becomes a critique of Plato’s mimesis on the other. By the well-defined linguistic gesture the pipe becomes a ghost half-there and half-not-there. The words act as an agent simultaneously mystifying and demystifying the existence of the pipe.

One of the earliest iconoclastic inclusions of text in a pictorial surface is Rauschenberg’s drawing called *Erased De Kooning Drawing*. In 1953 Robert Rauschenberg asked De Kooning, one of the forerunners of American abstract expressionism, for a drawing that he could erase and as an act of art call his own. De Kooning provided him with a very thickly penciled crayon piece. It took him almost a month to erase De Kooning’s drawing. He placed the drawing in a gold-leaf frame and hand-lettered the date and title on the drawing: “*Erased De Kooning Drawing*”, which amounted to erasing Abstract Expressionism. The performative act of erasing, the process it went through, the whole information is stored in the very presence of the text as a title of the work, not outside the frame, but inscribed on the drawing.

At a different level, recalling Tagore’s erasure, the two stances of erasures foregrounds an interesting contextual difference. Tagore’s erasures are a metamorphosis of a poetic self into an artists self. Rauschenberg’s erasure is the negation of a subjective self and submission into a rational construct. While Tagore’s erasures are transformative Rauschenberg’s erasure is a subversive act. The under-layers of Tagore’s erasures reveal the traces of an old bard yearning for a new birth. The under-layers of Rauschenberg’s erasure expose the murder of

a friend who he thought is dead. In the fissures of Rauschenberg's erased drawing creeps a scream of an emotional outburst. In the lattice of Tagore's erased manuscript peep all those abortive emotions seeking a certain closure.

The radical use of text as a 'linguistic element' in Conceptual art was informed by the postmodern theories in general and the moment of transgression from structuralism to post-structuralism in particular where artists assumed a philosophical stance to negotiate the self-reflexive position of art as a language. The Conceptual artists treatment of picture/words duality may have been informed by the debate surrounding the event of linguistic turn. As A Dictionary of Critical Theory describes: "The recognition in western philosophy that language poses an insurmountable limit to philosophical thinking because there is no absolute way of reducing all expressions to their propositional form"⁵ Its extreme logical extension is evident in Derrida's post-structuralist position when he says, for instance, "nothing is outside text/context" or as he would often say that meaning is always "deferred." In its historical moment, as popularized by Richard Rorty in 1967, linguistic turn implied a certain overturning of philosophy into language. In a somewhat similar stance, in visual arts the relevance of linguistic turn can be applied to the self-conscious preference of concept over percept, which, in other words, may imply overturning of pictures into words. It anticipates the reversal of order, implicit in the traditional equation between an artwork and the viewer, where a viewer becomes a reader and the artwork ceases to be just a static object waiting to be *seen* and becomes something meant to be *read*. In this sense the conceptual artist, on the one hand, demonstrates dematerialization of art as object and, on the other, foregrounds the double edged response to artwork: a simultaneity of a site as a site of sight and a site of reading.

This transition from seeing to reading an artwork can also be understood in the context of Conceptual artist's challenge to Greenbergian formalism as exemplified by abstract expressionism. For instance, Rauschenberg's erased De-Kooning may possibly be the earliest demonstration of this reversal. At the heart of Greenbergian formalism is a defence of artwork as an "unmediated aesthetic experience" and the "self-referentiality of artwork" as an object that stands for itself. In Conceptual art the formalistic paradigm of modernism's fixity with self-referentiality was replaced by critical self-reflectivity. Instead of making art they were more interested in the logistics of what is art; the relation between art and audience. Their artistic investment was more pedagogic than aesthetic where the most urgent concern was to demonstrate what constitutes art. And as we know the pedagogic position recalls the education and how the application of visual aids is an effective strategy in exchanging knowledge and skills between a learner and an educator. In this sense, the conceptual artist as educator executes the traditional methods of seeking visual aids in order to simplify complex ideas or, the vice versa. And the logical extension is the demonstration of image and text in a single frame.

The Magrittean paradigm is robustly re-visited by Joseph Kosuth, whose didactic position caused a paradigmatic shift from modern to postmodern art. His most celebrated work called *One and Three Chairs* 1965 is a seminal example. The work consists of a real chair accompanied by a full scale photograph of it and its dictionary meaning and thereby encompassing all the essential possibilities of "chairness".⁶ The way post-structuralism deconstructs the very faith in language to communicate anything outside itself with certainty; with Kosuth art transgresses the realm of art into the realm of language, knowledge and science. The Saussurean triad is more eloquently relevant here than in Magritte's pipe. The chairness of chair can be explained by the semiotic equation: Signifier (percept) plus signified (concept) equals (=) the sign "chair". The percept-signifier is the actual chair; the visual precept, the photographed chair; and the dictionary definition, the mental concept of a chair.⁷ Later Kosuth divorced himself completely from images as signs and seeped into the very matrix of language as a metasign, when in the wake of his essay 'Art after philosophy' he took up photostat blow ups of dictionary definitions of art related words. To retain something of plastic arts and assert the essential difference from the text in a book and text in a work of art his paintings become negative projections - white words come shimmering out of the black background.

The juxtaposition of image and text finds a different kind of narrative in Vernon Fisher's body of work - a narrative where the image and the text change positions or become one and in the process any comprehensive communication never really takes place. In the works such as *Looking for Judd*, 1976, the equivalent juxtaposition of image and text anticipate a communication, which is virtually beyond the usual forms of seeing and reading. The work projects the flux where images begin to function like words without being illustrative of the text and vice versa. The minimalistic deadpan intrusion of the text dissolves the denotative or suggestive potential of the image to communicate. Similarly the text functions like an image as soon as the alphabet projects itself as an abstract visual form. The viewer is confronted with the contradictory positions the work assumes; the narrative form presenting the account of the artists' journey through the countryside of Texas is counteracted as soon as the work assumes an object-like presence. In this way, Fisher's work foregrounds the

multivalent flux reflecting on our inability to focus on any single means of communication, and thus a subsequent sense of displacement and uncertainty.⁸

In the wake of America's second wave of feminism in 70s the photo-collagist Barbara Kruger and multimedia artist Jenny Holzer found a propagandistic potential in the use of text as art. Kruger deployed techniques she had perfected as a graphic designer and, launched a certain onslaught on the stereotype concerning religion, sex, racial and gender politics, consumerism, corporate greed, and power. Kruger's signature style incorporated the cropped, large-scale, black-and-white photographic images juxtaposed with raucous, pithy, and often ironic aphorisms, printed in deep red text bars against a black, white, or gray background. The inclusion of personal pronouns in works like *Your Gaze Hits the Side of My Face* 1981, allude to the male gaze and the vulnerability of the female as an object.

The feminist stance and the provocative use of text are also powerfully evident in the works of Iranian/American artist Shirin Neshat. Neshat's photographs, either portraits of women or their different parts of body such as a face, arm or hands, are loaded with text drawn largely from the Persian poetry and religious text which address the political, sociological, psychological and spiritual experiences in contemporary Islamic societies. Particularly in the series called *Women of Allah* she imposes or juxtaposes the free-flowing Farsi calligraphy with the startling and the powerful images of women and weapons. The veil, the gun, the text, and the gaze are the major visual metaphors recurrent in the series.⁹ On the one hand seeped in the exotic Sufi mystical aura of bygone days and on the other the confrontational stance to negotiate the existential condition of a woman, these images share the dilemmas and the paradoxes of the contemporary times. The element of simultaneity while engaging the religious orthodoxy and the secular; sacred and the profane; universal and the personal; the west and the notion of oriental are the seminal characteristics of Neshat's body of work.

In India there too are various occasions when Indian modern artists recognized the abstract values of the Alphabet by incorporating different scripts to supplement the formal/compositional order of a pictorial space. As discussed earlier, Rabindranath's so-called 'erasures' are possibly the earliest example where the poet's script seeks a certain transformation in the course of assuming a visual form. These unconscious doodlings anticipated new possibilities in the juxtaposition of calligraphic articulation with painterly formalism. Among the other artists who at various occasions have sought a certain visual recourse in the written script are: M F Husain's use of Arabic calligraphy for both abstract and representational means; G R Santosh's calligraphic geometrical permutations by referring to the visual and metaphysical attributes of sacred text. In the similar vein artists like K S Panikar, Sultan Ali, Shanti Dev also explored the visual possibilities a written word or a script can offer.¹⁰

In the present transitory times where communication and information technology has shrunk the world into a global village many young contemporary artists India have started to incorporate text as a radical new medium. The three artists that I would site as an example are Subodh Gupta, Shilpa Gupta and Jatish Kallat.

Subodh Gupta, in his 1990 mixed media work and titled as *Bihari*, is a coarsely painted self-portrait made on handmade paper and soiled in cow dung, with a word Bihari made of neon lights flashing in the lower half of the work. In the framework of a self-portrait as an autobiographical statement the word Bihari refers to the artist's hometown and simultaneously subverts its fate implicit in its vernacular use as a pejorative often encountered in day-to-day speech and also in the form of vulgar graffiti at the odd ends of public spaces. To address the political incorrectness Gupta chooses an ironical proposition by juxtaposing the glamorous, the vulgar and the grim. The specific use of cow dung and handmade paper allude to the 'grim condition of the majority of Indians living in bleak poverty across urban centers and just barely surviving on crude skills'.¹¹ In its iconic-frontality the work beholds the viewer with a questioning gaze.

Shilpa Gupta, as an interdisciplinary artist, is known for her self-reflexive and inquiring look at the social stereotypes and the way we perceive or constructed reality. The major characteristic of Gupta's works lies in its interactive mechanism to engage the viewer in a meaningful dialogue. Her major concerns are social injustice, terrorism, power structure, consumerism, desire and violence. Gupta has made an extensive use of text foregrounding various urgent contexts. Her work called *Blame*, 2002-04, which was first started in 2002 as part of Aar-Paar [Here and There] project, text becomes index. *Aar-Paar* was an initiative co-founded by Gupta and designed to further the cultural exchange between India and Pakistan, which aimed to obliterate the national barriers that separate the two countries. The posters bearing a bold-lettered 'blame' were printed for pasting on the streets of India and Pakistan. The text was printed both in Urdu and English, which made the *Blame* poster look like an advertisement meant to sell a new product in a red bottle. Alluding to the utopian ambition of transcending the differences based on religious or nationalistic identities the text further heightens the intended

message as one reads the inscriptions labeled on the bottles, which read as: "Blaming you makes me feel so good, so I blame you for what you cannot control: Your Religion, Your Nationality. I want to blame you. It makes me feel good."¹²

In Gupta's site-specific installation *There Is No Border Here*, 2005-06, the text, written in a poetically moving narration, is devised in the shape of a flag. Invoking the irony that the flag, which was meant to be a potent symbol of human glory or the celebration of freedom, has assumed an egotistic stance manifesting narrow ambitions of jingoistic pride and regressive notions of identity based on caste, creed, color and race. Like a caution tape at a crime scene the wall-based text piece is made of the yellow band inscribed with bold type that reads "There Is No Border Here". As Matt Morris writes: "Considering the persistent preoccupation with borderlines in Gupta's exhibition, the adroit irony to her take on these problems is that they are ultimately illusory, that our differences and conflicts are our own fearful inventions."¹³

The image of terror or the phenomena of fear politics finds an interesting and powerful articulation in her interactive art project called *There Is No Explosive Here*, 2007. The strategic mischief or the shock tactics and to fit well into the context that the project anticipates may not have been possible without the aid of linguistic intervention. In this way Gupta successfully elucidated the explosive potential a text can anticipate if transformed, treated or mistreated as an image. Set in the London Underground blasts of 2005, in the interactive session the visitors were invited by the artist to carry the bags and travel across public places in London. By registering different responses the project aimed at initiating a dialogue with the phenomena of suspicion and fear politics. Gupta's characteristic strategy to demonstrate the text/context or image/word duality is explicit in the act of fading the No word in the sentence "There is No Explosive Here", which amounts to double coding on the one hand and the phenomena of zooming in/zooming out on the other. In this sense, the meaning of the sentence is dependent on the distance of the viewer.

Itish Kallat is known for his sculptural and photographic installations where the text plays a seminal role in some of his important works. The recent series of works under the title of *Public Notice* are apparently monumental in its linguistic articulation and iconic reference. Kallat's work called *Public Notice*, 2003, draws from the historical speech of Jawaharlal Nehru at the midnight of Indian Independence. Kallat appropriates the text from the Nehru's speech by incorporating a symbolically significant process and materials. The process involves making each letter of the text by using rubber adhesive cement, which are later burned. And after placing the burned text against the acrylic mirrors Kallat achieves the desired image of distortion evoking a sense of time lapse inviting the viewer in the acts of reading, remembrance and reflection.¹⁴ The *Public Notice-2*, 2007 quotes from Gandhi's historic speech delivered on the eve of the epic Salt March to Dandi, in early 1930 as a protest against the salt tax instituted by the British. Here the text is constructed in the form of 4600 bone-letters and placed on shelves. The skeleton-look of the words arranged in an archival manner creates a haunting experience where the past confronts the present. As Kallat explains: "Each alphabet in this speech, like a misplaced relic will hold up the image of violence in clinical clarity even as their collective chorus makes a plea for peace."¹⁵

CONCLUSION

The seminal position that the text enjoys in the works discussed here may also share a different kind of hypothesis, which underlines an evolutionary role of text or a written word in comparison to an image or a picture. Early on we were taught that pictures play a subservient role to the words. But today we live in an age where the bombardment of images has virtually pushed the words to the backseat. Images predominate almost every conceivable public or private space, be it a simple landscape or a highway lined with extra-large signboards or our digitally efficient classroom or multi-media packed mobile phones, newspapers, computer monitors or television screens, the influx of images has never been so intense and ubiquitous. But then this shift from the reading culture to seeing culture saw a logical extension in their juxtaposition, sometimes complimenting each other and sometimes subverting their conventional roles, or better coming together to open up new possibilities to engage the perennial artistic concerns while addressing the aesthetic, epistemological, personal or political. At the same time, this needs to be asserted here, as pointed out by the linguist Roman Jakobson in 1974, while invoking Peirce's triad of signification that "Art has long escaped semiotic analysis"¹⁶, that we need to take Jakobson's call for interdisciplinary semiologies in general and in the context of Indian art in particular.

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HUMAN DEVELOPMENT: FROM ECONOMIC CAPITAL TO HUMAN CAPITAL

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The concept of human development, in the modern period developed broadly in three stages that are economic capital, social capital, and human capital. At the initial stage, in the 18th and 19th century, it was considered as the economic capital in the form of G.D.P growth, private property, profit etc. In the late 19th and early 20th century, it developed in the socialize form as the social capital and in mid and late (from 1950-60 to 1990) and even in current perspective it is defined as the human capital making it more humane.

This paper will defined the transformation three stages of human development. Apart from this it will also explained these three stages that is (1) 18th and 19th century, (2) late 19th and early 20th century, and (3) mid and late 20th and 21st century.

MEANING OF DEVELOPMENT

Development is a multifaceted phenomenon. It has been defined differently in different disciplines and by different thinkers. Development, in the theoretical perspective, emerged as economic development. Initially the development of economy of a country considered as the development of human' life and living standard. In the letter period it was adopted as the concept of social development, political development and most broadly as human development. Development is a multi-dimensional and inter-disciplinary concept as any incremental change in any complex system can occurs in different parts or different ways, with different speed and driven by different forces or agents. Similarly development of one part of a system may be determinant to the development of other part. For almost every thinker, a different meaning of development exists. Every theory have given almost same argument. In a widely accepted sense, development can be defined as "Incremental and positive change in a system". Richard Peet and Hartwick in their book 'Theories of Development' defined development as "making a better life for everyone".¹ They, in their book, argued that "a better life for most of people still means, essentially meet basic needs- sufficient food to maintain good health; a safe healthy place in which to live; affordable services available to everyone; being treated with dignity and respect. After meeting them, the course taken by development is subjected to material and cultural vision of different society".² They argued that 'better life' and 'basic need' don't have a similar meaning for all, it change in space and time accordingly. The ideal of development 'a better life for everyone' can also be used for different political purpose.

HUMAN DEVELOPMENT IN THE FORM OF ECONOMIC CAPITAL

Economic capital was origin as the first form of human development. Initially it was associated with the concept of economic growth and defined as increase in per capita income, increase in growth rate or GDP of a country. The first phase of development of economic capital thought ranging from roughly the late eighteenth century to the middle decades of the nineteenth century was the era of classical political economy. This period was associated with such classic names as Adam Smith, Thomas Malthus, David Ricardo, John Stuart Mill and Karl Marx. Most of them were related with the concept of economic growth and development, the relation between socio-economic change and the distribution of income and power among society, to make a competitive, private enterprise economy, allocating of resources, free economy and maximum profit generation. They were philosophers as well as social scientists, and most perceived the discipline in sufficiently broad terms as to connect economic behaviour to its social and political context. Adam Smith in his book the 'wealth of nation' (original work published in 1776) argued that under competition, private investors while pursuing their own interests guided by the "invisible hand" would maximize national output and thus promote public interests.³ The "invisible hand" doctrine has become the foundation for the working of the market economy or capitalism. In the system, government interference is seen as inefficient in looking after economic activities. Meanwhile, free trade, private property and competition are seen as the foundations that would spur economic development, reduce poverty and bring on social and moral improvements of humankind. However, freewheeling capitalism is often criticized for bringing wealth only to the rich, whereas the poor get poorer.⁴ On the other hand, Karl Marx in "Capital" (Marx 1933) (original work published in 1867) argued that the feasible system should be based on social or public ownership of property. He both extended and critically evaluated classical economic thought. Karl Marx emphasized that the wealth of the capitalists originate from the exploitation of the surplus value, which is created by the workers. He criticized classical economic thoughts with the argument that private property and free market let to exploitation of labours and these were also seen as causes of their poverty. In his book "Economic and Philosophic Manuscripts of 1844" first released in 1932 he defined the Theory of

Alienation. He state that workers become estranged from their humanity as a consequence of living in a capitalist society. He argued that alienation is rooted in the capitalist mode of production itself. Work becomes an enforced activity, something done for the paycheck alone; a situation in which the individual must deny the self, separating physical activity from mental life—not living as a full human being. So, private property should be abolished. The economy should be planned and managed by the state but to serve the social interests or interests of the masses.

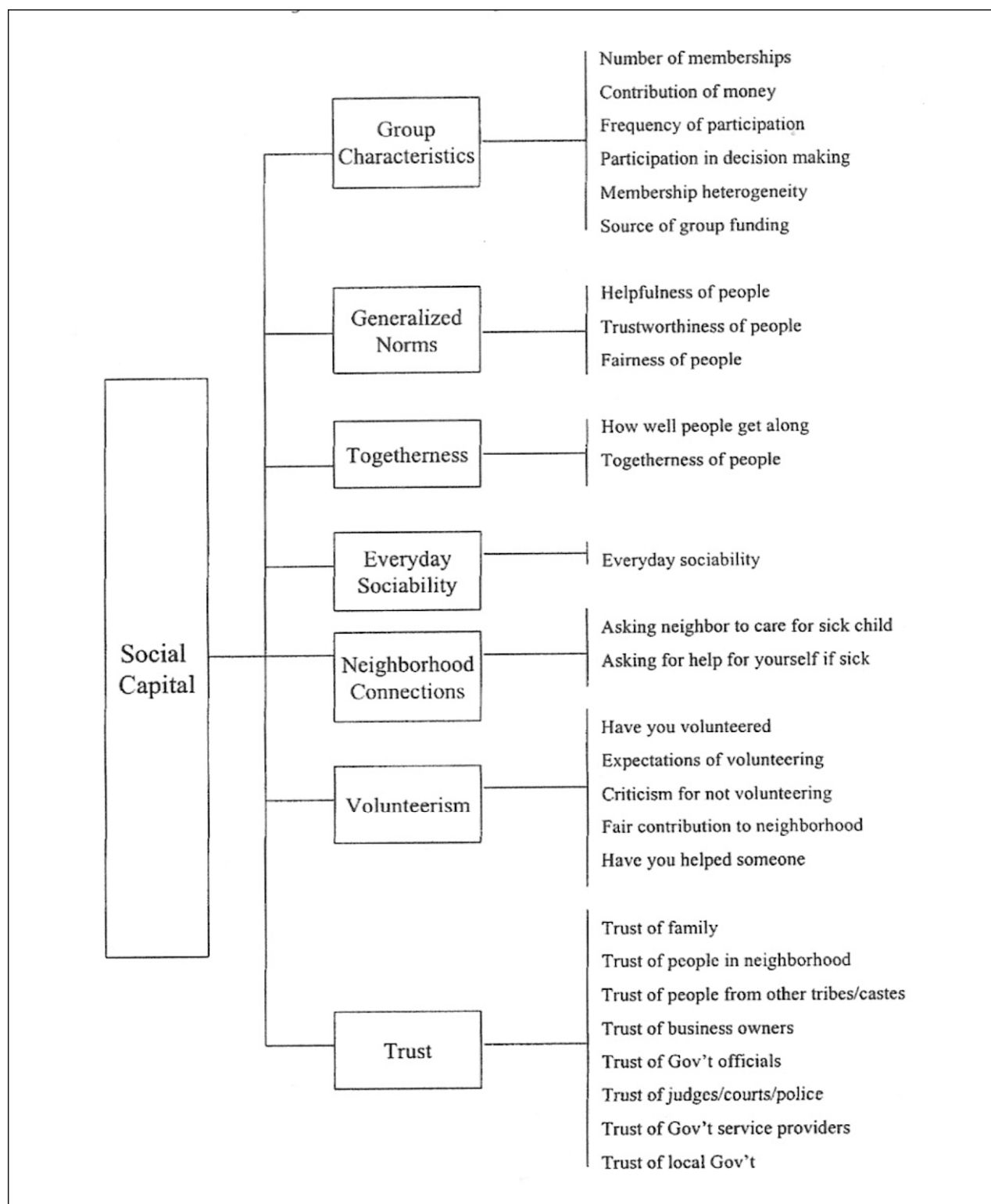
In the next phase classical political economy was advanced in the writings of the “neoclassical” economist Alfred Marshall. He also independently incorporated a strategic role for utility and demand considerations in his analysis of exchange value, notably in relatively shorter periods of time. He also gave the idea of “equilibrium”. Equilibrium would involve not only the most satisfactory position for each individual in the economic system, but the elimination of any above-normal profits, that is, any profits above those necessary to reward the owner of an enterprise for the contributions of his own productive resources.⁵ In early 20th century Keynesian growth theory -process of capital of formation is determined by domestic savings and investment in manufacturing leading to high productivity. He argued in the favour to give the greater role to the state in economy. It will increase in income/savings which allows growth and investment. In the second half of 20th century Neoliberal Development Theory- grew and designed to counteract impact of Keynesianism, Emphasis on supply related factors in development- private initiatives and market led growth Move away from demand stimulation (interest rate manipulation), state intervention and centralized planning Gradual industrialization with ‘trickle down’ of benefits to all social classes.

Meanwhile, in the modern period the narrow meaning and scope of economic development as growth merely of GDP, changed and it took the picture of socio-economic development and human wellbeing. After many conceptual changes in this theory of economic development many criticism can be seen. In last decades, material wealth and prosperity across the world grow with the unprecedented rate. On an average, now the world has more opportunities for people than they had 20, 50 or 100 years ago.⁶ The HDI scores of nations have also been rising except in the Sub Saharan Africa.⁷ However all progress reports are of “glasses half empty and half full”.⁸ World faces huge backlogs of deprivations and inequalities. Many decades of lost opportunities have passed by.⁹ Global snapshots obscure intra-national and inter-regional variations in human development. One person in eight in the richest countries is affected by some form of human poverty. For the first time since 1970, more than one billion people are hungry and undernourished worldwide.¹⁰ The theory of alienation (given by Karl Marx) is true in many aspects.

HUMAN DEVELOPMENT IN THE FORM OF SOCIAL CAPITAL

In light of these problems the concept of social capital originates. Social capital, in a wider sense refer to a conceptual umbrella covering the factor of effectively functioning society such as trust, network, interpersonal relationship, shared value and nomes, shared sense of identity. They enable the members of society to act together effectively to pursue shared objects. In this concept the meaning of human development defined in the socialised form. As a social person he (human) has some expectations, duties and capabilities. Family, society, and the state (the three level of development a child to a human) should develop a social person as human.

OECD defines Social capital as the “networks together with share nomes, value and understanding that facilitate cooperation within or among groups.”¹¹ The concept of social capital has first appeared in the work of Lyda Judson Hanifan during 1916-1920. In his work ‘The Rural School Community Centre’ he discussed how neighbours could work together to oversee schools.¹² He was mainly focused on the cultivation of good will, fellowship, sympathy and social intercourse among those who ‘be a part and parcel of social unit’. This notion spread with the contributions from Jane Jacobs (1960s) who state in relation to urban life and neighbourliness. In 1980s Pierre Bourdieu and James S. Coleman discussed to move the idea into academic debates. However, social theory gained its base from the work of Robert D. Putnam (1993-2000) that make social capital as a focused idea for research and policy discussion. Our shared norms, values and understandings are less incarnate and solid than our social networks. Values are changing in nature. Still some values like people's safety and security - are a essential combiner in every society. These networks and understanding in a combination and by putting together people to work together. Deepa Narayan and Michael F. Cassidy in their work A Dimensional Approach to Measuring Social Capital: Development and Validation of a Social Capital Inventory (2001) identify a range of dimensions illustrated in figure given below.



A Dimensional Approach to Measuring Social Capital: Development and Validation of a Social Capital Inventory (2001).¹³

HUMAN DEVELOPMENT IN THE FORM OF HUMAN CAPITAL

In the mid and late human development took the form of human capital. The concept of human capital as overall development of a person for being a human originates in practice, 1990 with human development report. According to Claudia Goldin Human capital is the stock of habits, knowledge, social and personality attributes (including creativity) embodied in the ability to perform labour so as to produce economic value.¹⁴ Human development as human capital broadly discussed in the work of the thinkers such as Amartya Sen, Martha Nussbaum in their capability approach.

Capability Approach of Amartya Sen's is used as a conceptual framework in The Human Development Reports (HDRs) to analyses the development challenges. In latter period HDRs have developed some development paradigm like People's Participation(1993), gender(1995) poverty reduction(1997), inequalities(1996) and globalization(1997) etc. The basic principles of a development approach are formed by capability approach. Capability approach is based on "paradigm". It is work on the concept of well-being which can help define public policy, though it does not include a set of prescriptions. Sen's work on capabilities and functionings provided the strong conceptual foundation for the new paradigm. His approach defined human development as the process of enlarging a person's "functionings and capabilities to function, the range of things that a person could do and be in her life," expressed in the HDRs as expanding "choices".¹⁵ It's important to note that for broadening the basic concepts and measurement tools to tackle the new policy challenges Sen's work continue to influence the evolution of the human development approach in the form of sustainable development (HDR 1994), gender equality (HDR 1995), poverty (HDR 1997), consumption and sustainable development (HDR 1998), human rights (HDR 2000), and democracy (HDR 2002), cultural liberty(HDR 2004). On the other hand, the HDRs have paralleled Sen's own work on freedom, participation, and agency, incorporating more explicit references to human rights and freedoms. Beside this, Sen also played a critical role in developing the measurement tools of human development, such as Human Development Index (HDI), Gender- Related Development Index (GDI), the Gender Empowerment Measure (GEM) and Human Poverty Index (HPI). GDI, and GEM were developed in 1995 and HPI published in the 1997.

In Spite of above mention critical role some thinkers also criticise Sen on some aspects such as- Das Gasper criticised that Sen's approach lacked to provide a complete face of "human" person. Gasper argued that, "central to Sen's view is the choosing, reasoning individual, but with little farther specified content of being human, the dominant impression is of people as choosers, their formation only lightly treated, rather than as actors more broadly".¹⁶

MARTHA NUSSBAUM: CONCEPT OF HUMAN PERSON

Martha Nussbaum also critique Sen's capability approach. According to Nussbaum, Sen uses the concept of capability "to make comparisons regarding the quality of life, which intends to advance the idea that it is in asking what people are able to do or to be, and not in their level of satisfaction nor the amount of resources they are able to command that the quality of human life is best understood".¹⁷ Nussbaum intends to make her version of the Capability Approach "real and complete rather than abstract".¹⁸ For Nussbaum, one reason that makes the Capability Approach urgent is the difficult and appalling condition of women, especially in many poor countries. Citing the 1997 Human Development Report, Nussbaum says that "no country treats its women as well as its men according to a complex measure that includes life expectancy, wealth and education" 19. In order to address this issue, Nussbaum attempts to formulate a more realistic framework of the Capability Approach by introducing the idea of a threshold of capabilities or the idea of a social minimum of capabilities, something that is absent in the elucidation of Sen's "equality of what?". In this context, Nussbaum gave the concept of human person and threshold of capability approach. For Nussbaum, the idea of a threshold of capabilities is important because this makes the Capability Approach applicable as an institutional framework. With the idea of a social minimum of capabilities with which governments can work on, a clear target can be set by policy makers.

Distinguishing itself from the conceptual "full capability equality" that Sen promotes, Nussbaum tells us that "Sen nowhere uses the idea of a threshold".¹⁹ Nussbaum develops her version of well-being and human person in a philosophical by introducing the idea of human dignity and human flourishing, based on her reading of Marx and Aristotle. Nussbaum notes that "Sen has not attempted to ground the Capabilities Approach in the Marxian and Aristotelian idea of a truly human functioning".²⁰ Nussbaum based her vision of human person on the equal capability and opportunity for both men and women. Her book women and human development (2000) start with the sentence "women in much of the world lack support for fundamental functions of a human life. They are less well-nourished than men, less healthy, more vulnerable to physical violence and sexual abuse. They are much less likely than men to be literate and still less likely to have a professional and technical education".²¹ Women, according to Nussbaum, are usually burdened by what she calls a "double day", due to the fact that a woman actually has to do two jobs, one outside her home as an employee and another when she returns home to take care of the needs of her children, and more often than not, her husband too.²² The Capability Approach, in this sense, should be able to provide people in general, and women, in this particular example, the real opportunities for a life worthy of their humanity. In addressing this concern, Nussbaum presents a two- fold intuitive idea as the foundation for a Capability Approach that considers each individual life in a fully human way.

CONCLUSION

The concept of human development initially associated with the concept of economic development in the form of economic capital but in the latter period it was adopted as the concept of social development in the form of social capital, and most broadly as socio-economic development in the form of human capital. Economic capital is related with a very narrow approach of economic growth of a country and social capital with level of trust, sharedness of value, interaction and interpersonal relationship. The concept of human capital is related with the broader aspects. It is associated with the overall development of a person be it a economic person, social person, political person, also as a human. Current concept of human development is also not complete in itself. The demand of changing paradigm of human development by making these capitals much broader also rose in recent time.

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**CUSTOMER PERCEPTION TOWARDS E-FOOD ORDERING: A STUDY WITH REFERENCE TO
UDUPI CITY**

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ABSTRACT

The recent development of the internet has increased the e-commerce industries in a country like India. Service seamless for people want to get food delivered at their doorstep. The mobile application era has thrown open a new pathway for today's marketing. Although consumer continue to go out for the meals, consumer feels very convenient to order food online since it frees the customer from personally visiting the restaurant. In this study our main focus was to analyze the perception of customers towards e-food ordering service. Hence, researcher make an attempt to know placing the order for food, to highlight customer perception towards e-food ordering and to identify the factors which influence the customer to order food online.. Survey successfully helped to understand the behavior and perception of people for e-food ordering. It shows how easily people search for a favorite restaurant, choose from available items and place their orders in just few minutes. After collecting the data from the respondents it was analysed using simple chi-square tests. Likert's five-point scale was used for developing questionnaire for determining customer satisfaction. The total sample collected were 100 covering area and in an around Udupi city.

Keywords: Customer perception, customer preference, current customer feedback, expectation of consumer, mobile application.

INTRODUCTION

Technology has played a key role in revolutionizing the food delivery service, it has contributed to the changes in consumer preference to the changes in consumer preference as their dependency of technology has motivated them to do everything online comprising getting cooked meals delivered to their doorstep. Convenience is the prime factor to the consumers, as to place an order is as simple as few clicks on any mobile device .technology dependency ,convenience and less time taken for the food to be delivered aid as a good reason for the consumers to choose the services offered by the online food ordering .This popularity of e –food ordering is steadily growing ,expectations of the users are also increasing .this paper will help the service providers to understand the consumer perceptions, needs and views on the basis of the result of a survey.

OBJECTIVE

- To know placing the order for food.
- To highlight customer perception towards e-food ordering.
- To identify the factors which influence the customer to order food online

RESEARCH METHODOLOGY**Sampling**

For the purpose of the study the researchers used stratified random sampling technique. The researcher personally contacted 100 respondents in and around Udupi Taluk.

Tools used for the study

Present study is based on primary and secondary data. Secondary data was collected from books, journals, magazines and internet. Primary data was collected by the researchers through a structured questionnaire method. Likert's 5-point was scale used for few questions. Simple statistical tools were used for interpreting data & were presented by using tables and diagrams.

HYPOTHESIS

H₀: E-food ordering is not easy and convenient.

H₁: E-food ordering is easy and convenient

SIGNIFICANCE OF THE STUDY

The study is basically conducted to know how consumers perceive the online food delivery service. The perception of consumers may vary under different circumstances. From this study, we have a better understanding of the 'Online Food Delivery Service Market'. We will know about the consumer perception regarding the service they provide in Udupi city and will get to know the variables affecting their perception.

Therefore, these findings may help the service providers to work upon these variables to fill up the gaps in the mindset of consumers.

LITERATURE REVIEW

According to H.S. Sethu & BhavyaSaini (2016), their aim was to investigate the student's perception, behavior and satisfaction of online food ordering and delivery service. Their study reveals that online food purchasing services help the students in managing their time better. It is also found that ease of availability of their desired food at any time and at the same time access to internet are the prime reasons for using the services.

According to Sheryl E. Kimes (2011), his study found that perceived control and perceived convenience associated with the online food ordering services were important for both users and non-users. Non-users need more personal interaction and also had higher technology anxiety to use the services.

According to Leong Wai Hong (2016), the technological advancement in many industries has changed the business model to grow. Efficient systems can help improve the productivity and profit ability of a restaurant. The use of online food delivery system is believed that it can lead the restaurant's business grow from time to time and will help the restaurants to facilitate major business online.

FINDINGS OF THE STUDY

The factors that encourage consumers the most is doorstep delivery followed by Ease and Convenience. Consumers are mostly influenced when they receive any rewards & cash backs followed by location. Most preferred online food delivery service provider is Zomato followed by Swiggy. The factors that prevent consumers to use the online food delivery service are bad past experience followed by influence from friends/family.

Table 1: Details of sample size

Gender /Age distribution of respondent	20-30	30-40	40&above	Percentage
Male	37	13	9	59%
Female	27	11	3	41%
Total	64	24	12	100%

Source: primary data

Inference: Nearly 59% of the respondents were male and 42% were female. Most of the respondents who ordered food electronically were between the ages of 20-30 years followed by 64%.

Table2: Respondents awareness of e-food ordering

Aware	No. of respondents
Fully aware	29
Slightly aware	34
Sufficiently aware	27
No aware	10
Total	100

Source: Primary data

Inference: Most of the people are aware of e- food ordering.

Table3: Opinion on convenience of e-food

Convenient	No. of respondents Percentage
Agree	62%
Neutral	13%
Disagree	25%
Total	100%

Source: primary data

Inference: The above table indicates that nearly 62% of the respondents found convenient to some extent followed by 25% and the least is 13% that is quite an extent.

Table4: Perception of e-food ordering easiness

Easy	No. of respondents
Yes	73
No	27
Total	100

Source: Primary data

Inference: The above table shows that 73% of customers are say that e-food ordering is easy.

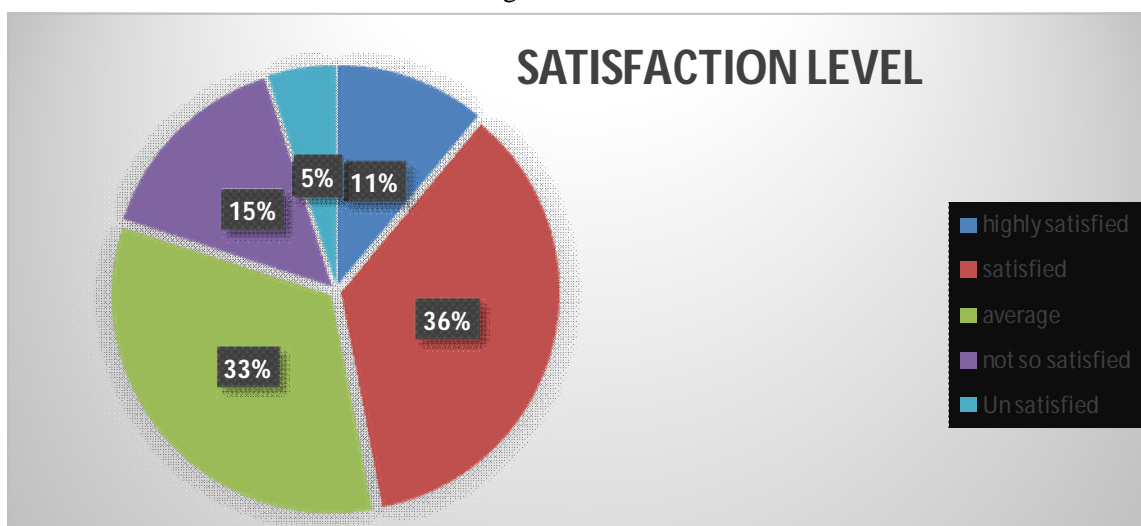
Table5: Factors for online food ordering

Factor	No. of respondents in percentage
Cheap	14%
Fast	51%
Convenient	29%
Other	6%
Total	100%

Source: Primary data

Inference: Most the people prefer e- food order because they provided a fast service to customers.

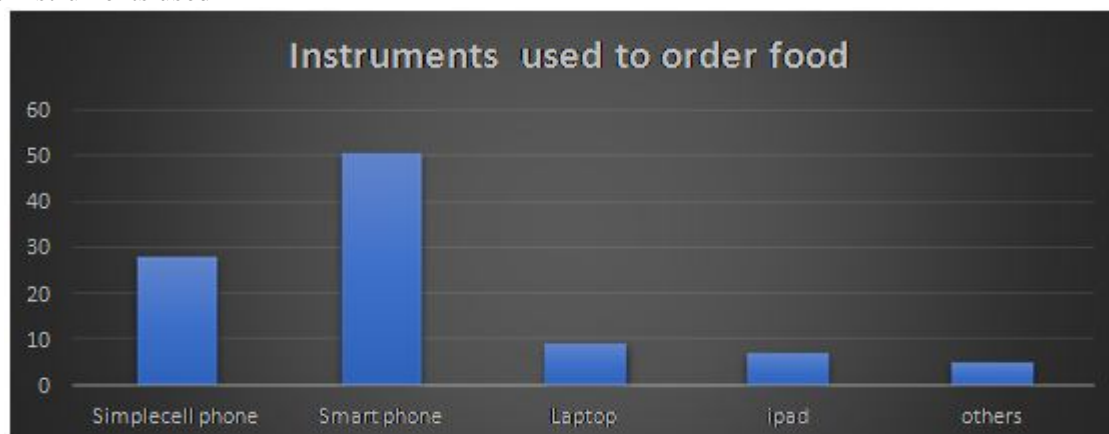
Figure1: Overall satisfaction about e food ordering



Source: Primary data

Inference: The majority of customers are highly satisfied by ordering e-food in 11% and 5% of respondents are unsatisfied by ordering e-food in online.

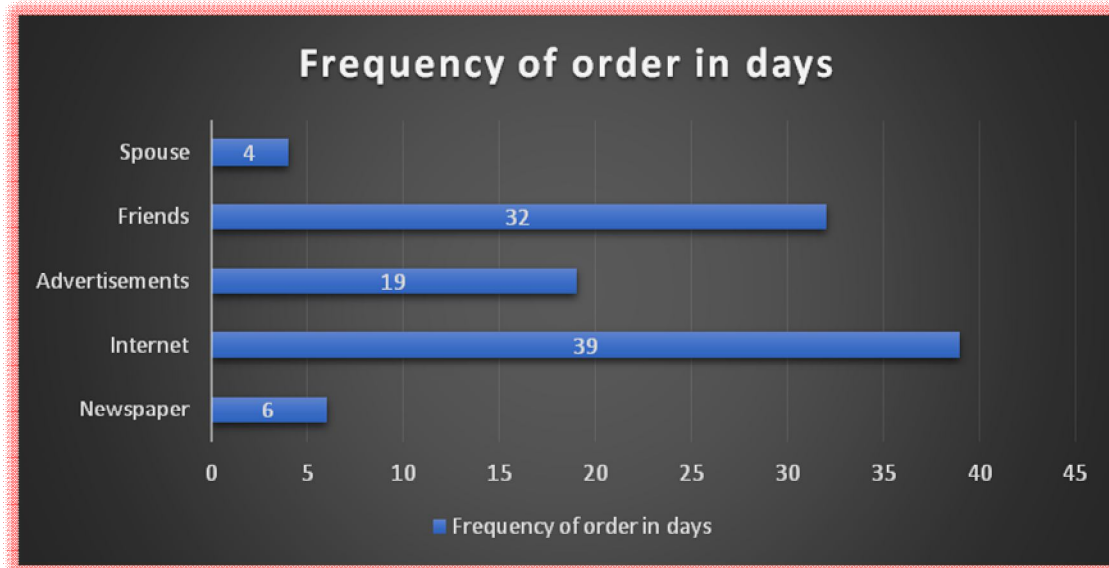
Figure2: Instruments used



Source: Primary data

Inference: more than 50% of respondents are using e-food order in online. Now a day the smart phone is the most commonly used instruments and people are finding it very easy to access the location/information etc.

Figure3: Respondents awareness on e-food ordering process



Source: Primary data

Inference: Interpretation from the above graph shows that nearly 39% users came to know about the project through internet followed by through friends and 19% through advertisements. It is clear from the above details that the customer satisfaction and customer relationship helps in growth of business.

TESTING OF HYPOTHESIS

H_0 : E- food ordering is not easy and convenient.

H_1 : E-food ordering is easy and convenient.

Table 6: chi square analysis

Chi-square value	Table value	Significance
6.15	5.99	Significant

Source: Primary data

Since the calculated value is more than the table value, the null hypothesis "E-food ordering is not easy and convenient" is rejected and the alternative hypothesis is accepted.

Table7: Preference of days for e-food order

Days	No. of respondents
Weekdays	13
Weekends	35
Anytime	27
Never	9
Sometimes	16
Total	100

Source: Primary data

Inference: Nearly 35% of the respondent's order food weekends followed by 27% of user order on anytime. The major segment of order received without having any time frames. 24/7 support is made available to customers.

Table8: Mode of payment

Payment	No. of respondents in percentage
Internet transaction	22%
Cash delivery	72%
Credit	6%
Total	100%

Source: Primary data

Inference: The most of the customers prefer cash in delivery.

Table 9: Respondents prefer best food offers app

Application	No. of respondents
Zomato	48
Swiggy	37
Uber eats	4
Other	11
Total	100

Source: Primary data

Inference: The most of the customer prefer Zomato application. Zomato is best in terms of providing better discounts and good in terms of providing better choice of restaurants.

CONCLUSION

According to the research conducted, it can have concluded that Zomato has gained positive opinion of majority of the consumers in comparison to other service providers. It is mainly because of their better on time delivery and better discounts. Zomato has been in the first position in online food delivery service provider and if it includes the minor improvements, it will sustain the upper hand forth coming future.

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Bessley, M., & Wilson, P. (1984). Public policy and small firms in Britain. In Levicki, C. (Ed.), *Small Business Theory and Policy* (pp. 111–126). London: Croom Helm.

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Young, M. E., & Wasserman, E. A. (2005). Theories of learning. In K. Lamberts, & R. L. Goldstone (Eds.), *Handbook of cognition* (pp. 161-182). Thousand Oaks, CA: Sage.

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Holloway, M. (2005, August 6). When extinct isn't. *Scientific American*, 293, 22-23.

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