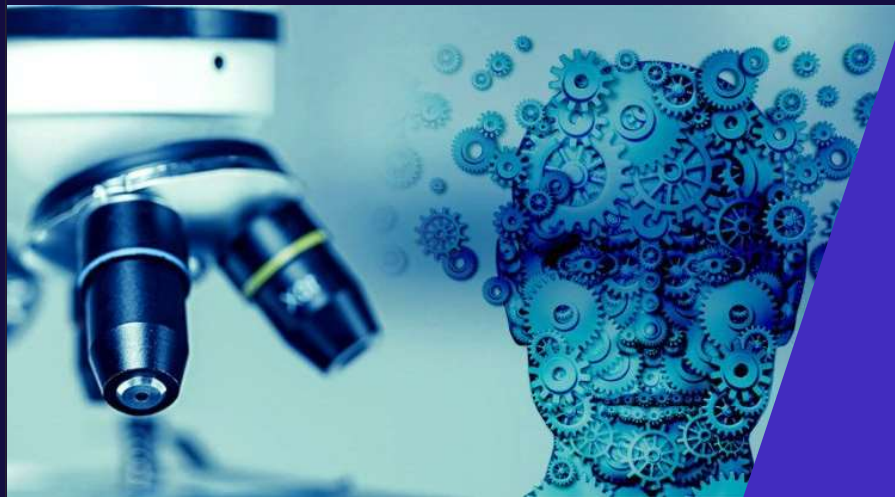


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# INNOVATIONS AND CHALLENGES IN EDUCATION, HUMANITIES, APPLIED AND SOCIAL SCIENCES



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EDUCATION, HUMANITIES, APPLIED AND SOCIAL SCIENCES

Farooqui & Chauhan



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Edited by:  
Dr. Ubaid Akram Farooqui & Dr. Gambhir Singh Chauhan

# INNOVATIONS AND CHALLENGES IN EDUCATION, HUMANITIES, APPLIED AND SOCIAL SCIENCES

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## Teacher Effectiveness: Notion and its Dimensions

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Dr. Dayal Sandhu\*

### Introduction

The aim of education is child's development in all aspects –divine, substantial, rational, touching & communal. The all round progress of he/she helps him/her become a responsible, energetic, creative citizen. The Secondary Education Commission, The National Policy of Education & The Program of Action assured, "the important part of educators in the enrichment of the education system & the progress & development of off springs." **Pt. Jawahar Lal Nehru rightly said**, "Education is the most important part of our plans. Industry and agriculture, which are important for us, will grow adequately only if there is the background of mass education..... I am quite convinced in my mind that the first plan among our plans and development schemes, is Universal Education....wherever you go, at the back of it, at the base of it, must lie education." **Pro. Drever** has rightly said, " Education is a practice in which and by which information, quality and performance of the young are shaped and molded" .Learning is a method which helps the teacher to convey awareness to undergraduates. From Non official & official system of education awareness can be detained, while all type of learning is depend on classroom learning. "The destiny of India is being shaped in her classroom" **Education Commission (1964-66)** has pointed out. It s the teachers are making the future of the students in the classrooms. The **Programme of Action (1992)**, The **Secondary Education Commission (1952-53)** & The '**National Policy of Education (1986)** have truly stated, "the development of the education system and the growth and development of learners the teachers play the major role" **Tagore** has appropriately thought, "A lamp can never light another lamp unless it continues to burn its own flame, a teacher can never truly teach unless he is still learning himself" for this we have a great requirement of efficient and

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learned educators to teach the student for future growth. The teacher as a mentor acts a very vital role in changing the world. The education system is made prominent by the learned instructors. Teachers effectiveness makes the education effective and important in the classroom. it is the only reality which is accepted by all that the crucial role in education system of any society is only played by the teacher .So Teachers Effectiveness attracts the attention of the intellectuals in their relation with Emotional Intelligence and Personality. **Gold Haber D and Anthony E (2007)** also proposed, “teacher matters the most. This planet is changing so fast that this change hit each and every field of life like teaching. World of information is also affected by this amend. Teaching is a main function in producing transform in this world of knowledge as teaching is a leading profession”. On these circumstances teaching becomes so complex trade which urges a lot to become more professional as any other job because the advancement of any country depends on it. Every teacher is unique in nature as every person has his own specialty. There are a number of features which makes one teacher different from others in qualities, manner, brain power and teaching strategies and how is his Emotional Intelligence like. The position of a teacher, the whole structure of school status and student achievement depend on the abilities of teachers. In this perspective the personality and the emotional intelligence of any teacher is seen decisive.

### **Teacher Effectiveness**

Value of education depends on the key element known as teacher and teacher related element. So, this is the main topic of research and survey for centuries. In Education field teacher effectiveness is known as many other terms like training achievement, doing well in coaching, education competence, education presentation, training skill and this is all because of its intricacy. The belongings of students as learner’s grow, learner’s development and changes in learner could know as teacher effectiveness. The teaching is the dynamic need of different learners and the demands of varied instructional goals, matters and procedures which can only be regulated by effective teachers. teacher effectiveness exhibits, “the impact of the classroom factors, such as teaching methods, teacher expectations, Classroom Organization and the use of classroom resources have on students’ performance.”

Teacher Effectiveness (TE), in the words of **Jim Campbell (2004)** “the power to realize socially valued objectives agreed for teachers work, especially, but not exclusively, the work concerned with enabling students to learn”. So the finest point of effectiveness as well as output takes it easy with the teacher. When the mix task of teaching is thought by us, an unsolved concept is Effectiveness. So, Teacher Effectiveness is known as students’ attainments, presentation of controllers, comments from students to their supervisors and other interested collaborators which is described by some researchers in their research work. Thus, in educational

development teacher success, institution's attainment and learning efficiency related each other. The energetic, creative and skilled teachers are largely depended on the effectiveness of the educational system. The whole educational prospectus selected to him in the best and most resourceful manner are not only imparted by an effective teacher but also the finest likely educational presentation and a best possible progress of the qualities among children are ensured. In the current set-up a vicious contest is seen in every field of life, to make powerful the students, facing the emerging challenges of global world can be done only by effectiveness of teachers.

**Anderson (1991)** said, "An effective teacher is the one who is quite consistently achieves goals, which either directly or indirectly focuses on the learning of his/her students." An optimistic or pessimistic behavior of educators, a grand level of efficiency in their learning process and finally the effect they have exhibits a teacher's resolve. In creative sense, in terms of what the teacher and learner do can be cleared by the teacher effectiveness. The impact of individual teachers can certify the evaluation of teacher effectiveness from side to side belongings on students in terms of achieves, development, transforms, all of which occupies quantity of transforms in behavior and some of which. Not as a constant quality of teacher as an individual, teacher effectiveness is a foundation of the dealings between convinced teacher personality and other features that are shown by a discrepancy according to the condition in which the teacher works.

**Elliott et al. (2000)**, "effective teachers need to know their students well and be able to adapt their teaching styles to particular classroom and to individual students." **Gaubatz (2000)**, "there is high correlation between students' rating of the amount learned in the course and their overall ratings of the teacher and course." **Carr (2000)**, "teachers' regardless subject area, have a moral part to take part in education. Effective teachers are supposed to be fully capable of logically and resourcefully to guide the students to win in competitive standardized tests, as well as inspire in them, ethics that would make them reveals behaviour that is normally advantageous and satisfactory." **Goldenberg (2001)** viewed that, "effective teachers build strong relationships with the parents of their students. They communicate regularly with parents, treat them with respect and make them feel welcome, in their classrooms."

### **Characteristics of Teacher**

There are four main categories, which are as follows:

- Effectiveness employs teacher's role as instructor of education and supervisor of work.
- Effectiveness is the level to which a mediator produces result.
- Relationship between teachers and pupils and teacher and other persons.
- Teacher's quality.

### Determinants to Teacher Effectiveness

The determinants which are responsible for effectiveness of teachers in their professional life are:

- **Teacher's Teaching Aptitude**, which is the blend of qualities and abilities and is accountable for potentialities of individuals.
- **Intelligence**, a common intellectual skill of a teacher to start diverse activities.
- **Values**, which is not only help in sustaining the society and its culture but also any significant changes in these aspects.
- **Self concept**, all the awareness,, opinion, attitudes, aspirations and morals concerning oneself.
- **Job Motivation**, it is that strength which motivates a human being to perform, determines his track and his job action.
- **Job satisfaction**, a delightful affecting situation ensuing form the awareness of his/her career rewarding and allowing completion of his /her significant trade ethics.
- **Attitude** i.e. intellectual willingness to react optimistically or pessimistically towards an individual, purpose, occasion or circumstances.
- **School climate** it includes all the material, communal and affecting actions of a school which may manipulate the behaviour of human being with in the grounds of the school.
- **Personality**, factors like engaged vs. sociable, less able vs. more able, self-confident vs. hesitation, affected by feelings versus emotional stability etc.

### Dimensions of Teacher Effectiveness

The major dimensions of teacher effectiveness specified in **Teacher Effectiveness Scale** organized by **Dr. Umme Kulsum** are preparation for teaching and planning, classroom management, knowledge of subject matter etc, teacher characteristics and teacher characteristics amongst organizational and individual values which are described in Table 1.1

Sr.No.	Dimensions of TeacherEffectiveness	Description
1.	<b>Preparation For Teaching And Planning</b>	Capability of an instructor in practising, setting up, managing for education byusing different source objects
2.	<b>Classroom Supervision</b>	Ability of the teacher totalk ,inspire the learners, estimate the teaching learning practice and continue regulation in theclass room

3.	<b>Knowledge Of Subject Matter Etc.</b>	Capacity of the teacher obtaining, maintaining, understanding and making use of the contents of the topic to which a teacher is dealing with.
4.	<b>Teacher Characteristics</b>	Capacity to awaken 'a perceptive mass' and looking for active contribution of student comprise necessary demand quality of an efficient educator.
5.	<b>Interpersonal Relations</b>	Capability of an educator to sustain pleasant relation with equals, learners, guardians and other persons with whom teacher have to cooperate. This is the most important part of his/her occupation.

### Conclusion

Value of learning depends upon one of the principal aspects of learning that is, instructor associated issues. therefore, this has been a main subject under study for a century. In instructive study Teacher Effectiveness is accepted as additional vocabulary such as training achievement, unbeaten training, training effectiveness, training presentation, training skill for the reason of its density. Rabinowitz and Travers, Ryan as well as Rammers said, "the effects on student's grows, student's development and transforms in student could understand as teacher effectiveness." Nothing is everlasting on this earth except amend. Liberalization, privatization, Globalization and Capitalization's slogan "Now Reshape this present world" so the transform is the exact in all (parts) grounds and amend in Education cannot be passed up. So In the practice of transform of Education, the mentors also concerned. This helps to identify the requirement of (present era) growing generation. To become the part of this organism a teacher has to adjust himself According to the varying circumstance and make himself up to date for present knowledge like Emotional Intelligence, Personality etc. and their effect on students' achievement on Education. It is well-known to all that the achievement of any Educational Program depends on trainers. So Teacher effectiveness is one of the most significant feature of school on which a teacher should focus. Through this feature of teachers' effectiveness, he is called the father of the beginner. What type of approach, actions, feeling, and traits does he show towards the beginner, influence him in his practice of learning. Teachers are smart as much as necessary to supervise all the situations. This is because they have highly emotional abilities which make them inventive and successful teachers. Only efficient Teachers are appreciated highly because it is they who play a significant role in shaping the students in their individual and certified work.. They also get ready the students to face all the circumstances in future.

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## School Curriculum 100 Years ago and Now: A Comparative Study

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Dr. Chandrasekharan Praveen\*

### Introduction

*Every great idea is a combination or mutation of an idea that has already been brought to life...good ideas do not come from looking forward or back, rather they come from looking left and right, to what is adjacent to us.*

*-Steven Johnson, Where Good Ideas Come From*

A significant change in the National Education Policy (NEP 2020) is the decision to treat the pre-school (1 to 3 or Aangawadi) and Standard I and II together as one stage. Even the proposal to scrap the two year teacher training course (DEd or the old TTC) and replace it with the 4-year integrated Bachelor of Education (BEd)/ 2-year BEd for training teachers for the first stage of the 5+3+3+4 years of education came as a complete surprise for many educators. And the obvious questions that arose included: What will be the new curriculum? Will new subjects be taught? Will new activities be introduced?. But NEP 2020 is yet to provide a comprehensive answer and educationists are keenly awaiting the outcome of workshops and deliberations underway to chart out a plan of action to implement the changes particularly at the first stage (That is Pre-school and Standard I to II)

Johnson quoted above believes that building blocks of innovations are available from what is adjacent to us. These in fact came into existence from ideas from the past which were refined for the present. In his post in the website of the American Historical Association, Stearns observed that data from the past are vital evidence in our quest to understand change in society today. In fact, a study of the past for finding answers to questions that arise in the present is something that a study of history provides. More importantly history gives us the opportunity to learn from others' past mistakes(1)

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### Objectives

The objectives of the study was:

- To identify the subjects taught and activities given in primary schools one hundred years ago.
- To identify subjects taught and activities given now.
- To compare the data to identify subjects and activities that appear to be good and beneficial.

Since a change is in the offing, for the first phase of the 5+3+3+4 pattern, the investigator consciously tried to identify those subjects and activities that appear to be good but are now not taught in schools anymore.

### Method

Data for the study was collected by the investigator cum teacher educator, from books and magazines on education which are one hundred years old. These comprised old photographs, drawings and the related write-up. Data for subjects taught and activities given in schools now were collected from websites of educational institutions, the (State Council for Educational Research and Training) SCERT's and the National Council for Educational Research and Training (NCERT). Further, in interpreting the images, the popular method of 'Look, See and Think' was employed. (2) The related write-up was also checked to identify the likely intention of the photographer.(3)

### Findings

- A Bulletin of the United States Bureau of Education on Elementary Education in England published in 1914 reported :

*"The children between these ages (3 and 5) are usually placed in the babies' class, in which no formal work is done, but the time is devoted to games, singing, stories, conversation and so on...The curriculum of the older children includes, besides the introduction to the three R's, observation lessons, storytelling, singing, games, drawing, handwork and drill...The observation lessons of most schools are confined to simple nature study...simple observation of plants and flowers...fruits of the country...study of numerous animals and insects..."*(Kandel p 40)

- A magazine devoted to teaching at the Kindergarten level had a photograph with a perceptive caption: "Play and exercise should be a lure to the school, not away from it". [Please see photograph #1 in Appendix]
- A monthly magazine for teachers which provides tips for teachers had a photograph with a chalk board drawing of the head of a cock and duck with their claws. The drawing helps the teacher to focus the attention of

pupils to the webbed claws of the duck which is usually classified as a swimming bird. [Please see photograph #2 in the Appendix]

- A publication of the Society for Promotion of National Education India has several visuals related to the kind of education and activities given in India in 1918. There is one which shows girls attending a Montessori class. [Please see photograph #3 in the Appendix] The book also includes two curious photographs with captions that describe the advantages of the 'Standard National Desk' and the disadvantage of other types of desks commonly used. [Please see photograph #4 and photograph #5 with the related description of the advantage/ disadvantage of each in the Appendix]
- A review of the curriculum currently implemented in primary schools invariably had the following subjects and activities related to them Present: 1.Language (Mother tongue and English) 2.Numbers 3.General awareness 4. Environmental Science. Computer Labs, Activity rooms and playground are common. But one obvious handicap appears to be the wide difference in infrastructure and investment for imparting primary education in well established private schools, government schools receiving limited funding and those in rural and tribal areas which usually have very poor infrastructure facilities.
- Perhaps the most significant finding of the entire study relates to the observation made by the then Director of Public Instruction of the Government of Travancore in 1910. It assumes significance given the rise in corruption and drug abuse related cases in the education sector in India. The entry on the second page of the 'Course of Instruction' meant to be read closely by teachers is as follows:

*"It is...an essential part of the teacher's duty to turn the attention of pupils to the moral quality of their acts and to lead them to a clear understanding and constant practice of every virtue..."*

-A Crichton Mitchell, Director of Public Instruction. 11th February 1910 (p2)

### **Limitations**

The study has the obvious limitation of culling out data from a limited number of books which are one hundred years old. Though a study of the data collected helps one see changes, and grasp elements of earlier systems of education, the benefit of doubt is likely to persist. This is because we are not sure whether the editor or the author had any hidden motive to project what was beneficial to the publisher or the nation which published the book. It should also be recalled that one hundred years ago, books were the major medium of communicating information.

### Summing up

Raw data available in books which are a century old, are lifeless. The investigator has tried to identify the data (information) related to Education which may be utilized in the present thereby transforming it into a valuable fund of knowledge. It is hoped that those now assiduously engaged in redesigning the new curriculum in the first stage of the 5+3+3+4 pattern of education in the country as per the NEP 2020 will benefit to an extent from the findings of the study.

### Notes and References

- A blog post trying to answer the question 'Why is history important and how can it benefit your future?' suggested that research in history will provide the opportunity to look at primary sources written at the time and secondary sources written about a time period after the fact. This helps provide practice in deciphering of reliable and unreliable sources.
- Kit Meesham-Muir, a senior lecturer of Art History and Theory of the University of New Castle, explained 'Look, See and Think': "Looking is about literally describing what is in front of you, while seeing is about applying meaning to it. When we see we understand what is seen as symbols, and we interpret what's there in front of us....The final step involves thinking about what you've observed, drawing together what you've gleaned from the first two steps and thinking about possible meanings. Importantly, this is a process of interpretation..."
- The academic website, 'Historical Skills' has a post on interpreting photographs. It states that photographers are not necessarily unbiased and usually take photos of what the audience wanted to see. So to arrive at a proper interpretation, the purpose, motive, relevance and accuracy has to be looked into.

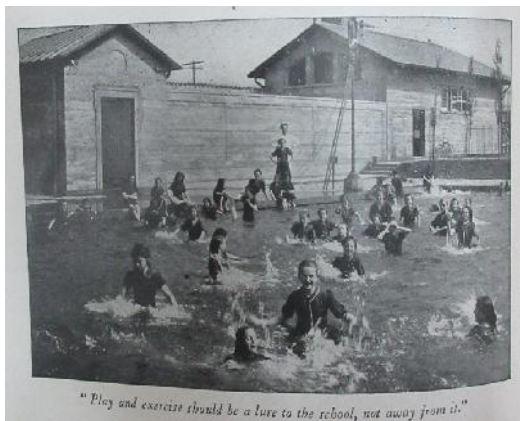
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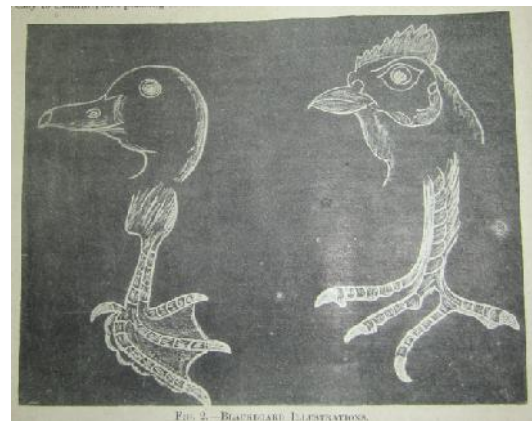
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## Appendix

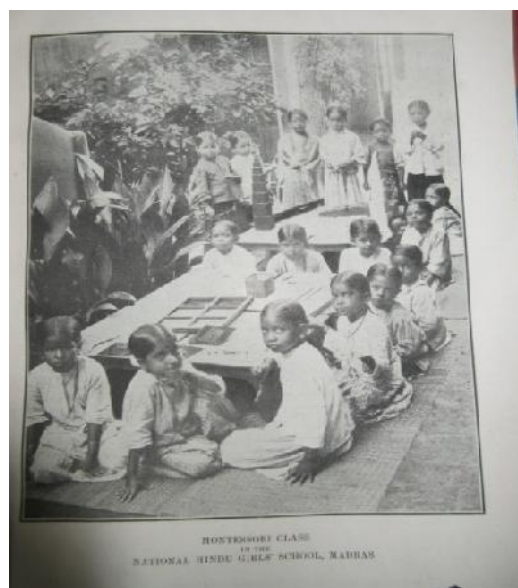
Photograph # 1



Photograph # 2



Photograph # 3



**Photograph # 4**

*“This illustration (National High School, Teynampet, Madras) shows how simplicity is advantageous in every way: individual blackboards, ample opportunity for movement, room for books, proper writing position (the top also drops horizontal), and economy are obvious...”*

**Photograph # 5**

*“Unsuitable western benches and desks –more costly and less useful and wholly unscientific”*



## Treatment of Polluted Water Containing Heavy Metal Ions in Basic Medium

---

Dr. Deepika Bansal\*  
Dr. Prity Sharma\*\*

### Introduction

Water is essential component for survival but now a days about 200 million people in India do not have access to safe drinking water due to water pollution. In Rajasthan, one of the main causes of industrial pollution is the discharge of effluents containing heavy metal ions in places like Amani Shah ka Nala of Jaipur. The polluted water of the Nala is used by farmers for growing vegetables. The metal ions pass on to the vegetables and act as poison on consumption by people. Heavy metal ions have atomic density greater than  $68/\text{cm}^3$  (Awan et al.2003). These metal ions include  $\text{Al}^{+3}$ ,  $\text{Cr}^{+3}$ ,  $\text{Fe}^{+3}$ ,  $\text{Mn}^{+2}$ ,  $\text{Zn}^{+2}$ ,  $\text{Ni}^{+2}$  and  $\text{Co}^{+2}$ .

They are highly toxic for biological organisms Hence they present a threat to human health and the environment. Therefore, these heavy metal are to be removed from water sources before using for agriculture. According to World Health Organisation (WHO), the metal ions of most immediate concern are Zn, Fe, Mn, Al, Ni and Co (WHO, 1984).

A number of conventional technologies have been employed for the treatment of wastewater contaminated with heavy metal ions. Alkil *et al* (2004) used calcined phosphate as adsorbent for removal of heavy metal ions from water. Sand was used as an adsorbent by Awan *et al.* (2003) for the removal of heavy metal ions. Removal of heavy metal ions by using alumina or chitosan as adsorbent was studied by Luisa *et al.* (2003). Activated carbon was used as an adsorbent by Reed (2002). Some of the conventional techniques for the removal of metal ions from industrial waste water include chemical precipitation, adsorption, solvent extraction, membrane separation, ion exchange, electrolytic techniques, coagulation, sedimentation, filtration, membrane process, biological process and chemical reaction (Blanco *et al.*, 1999;

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Blanchard *et al.*, 1984; Gloaguen and Morvan, 1997; Jeon and Park (2001). Removal of heavy metal ions from industrial waste water using  $H_2O_2$  was studied by Badmus and Anyata (2006). Saifuddin and Palanisamy (2005) used chitosan coated oil palm shell charcoal for the removal of heavy metal ions from water. There appears to be no report in literature for the removal of heavy metal ions by ammonium hydroxide and by sodium sulphide in basic medium. In view of this it was considered worthwhile to undertake the present study.

### Materials and Methods

- **Determination of Aluminium ions:** A solution of  $AlCl_3$  was prepared by dissolving 1.0 gm of it in 100 ml distilled water. Two grams of ammonium chloride was added in ammonium hydroxide solution (5N) and  $Al^{+3}$  solution was added to it. The reaction mixture was allowed to stand for one hour. A white gelatinous precipitate of  $Al(OH)_3$  appeared. This precipitate was filtered, washed, dried and weighed. The pH of the reaction mixture was 7.6.
- **Determination of Chromium ions:** A solution of  $CrCl_3$  was prepared by dissolving 1.0 gm of it in 100 ml distilled water. Two gram of ammonium chloride was added in ammonium hydroxide solution (5N) and  $Cr^{+3}$  solution was added to it. The reaction mixture was allowed to stand for one hour. A green precipitate of  $Cr(OH)_3$  appeared. This precipitate was filtered, washed, dried and weighed. The pH of the reaction mixture was 8.8.
- **Determination of Iron ions:** A solution of  $FeCl_3$  was prepared by dissolving 1.0 gm of it in 100 ml distilled water. Two gram of ammonium chloride was added in ammonium hydroxide (5N) and  $Fe^{+3}$  solution was added to it. The reaction mixture was allowed to stand for one hour. A brown precipitate of  $Fe(OH)_3$  appeared. This precipitate was filtered, washed, dried and weighed. The pH of the reaction mixture was 7.4.
- **Determination of Manganese ions:** A solution of  $MnCl_2 \cdot 4H_2O$  was prepared by dissolving 1.0 gm of it in 100 ml distilled water. 40 ml ammonium hydroxide solution (5N) was added in the above solution. After that sodium sulphide solution (100ppm) was added in excess to the above solution. The reaction mixture was allowed to stand for one hour. A light pink precipitate of  $MnS$  appeared. This precipitate was filtered, washed, dried and weighed. The pH of the reaction mixture was 7.9.
- **Determination of Zinc ions:** A solution of  $ZnSO_4$  was prepared by dissolving 0.1 gm of it in 100 ml distilled water. 40 ml ammonium hydroxide (5N) was added in the above solution. Sodium sulphide solution (100ppm) was then added in excess to the above solution. The reaction mixture was allowed to stand for one hour. A white precipitate of  $ZnS$  appeared. This precipitate was filtered, washed, dried and weighed. The pH of the reaction mixture was 8.5.

- **Determination of Nickel ions:** A solution of  $\text{NiCl}_2$  was prepared by dissolving 0.1 gm of it in 100 ml distilled water. 40 ml ammonium hydroxide (5N) was added in the above solution.
- After that sodium sulphide solution (100ppm) was then added in excess to the above solution. The reaction mixture was allowed to stand for one hour. A black precipitate of NiS appeared. This precipitate was filtered, washed, dried and weighed. The pH of the reaction mixture was 9.4.
- **Determination of Cobalt ions:** A solution of  $\text{CoCl}_2$  was prepared by dissolving 0.1 gm of it in 100 ml distilled water. 40 ml ammonium hydroxide (5N) was added in the above solution.

After that sodium sulphide solution (100ppm) was then added in excess to the above solution. The reaction mixture was allowed to stand for one hour. A black precipitate of CoS appeared. This precipitate was filtered, washed, dried and weighed. The pH of the reaction mixture was 9.7.

### Results and Discussion

The results of these estimations are given in the Tables 1 and 2.

**Table 1: Treatment of heavy metals ions in basic medium**

Name of the metal ion	Volume of the metal ions solution taken	Amount of $\text{NH}_4\text{Cl}$ 5N added	Volume of $\text{NH}_4\text{OH}$ 5N added	pH	Weight precipitate found in gm	Theoretical weight of precipitate in gm.
Al+3	100 ml.	2 gm.	10 ml.	7.6	0.63 gm.	0.58 gm.
Cr+3	100 ml.	2 gm.	10 ml.	8.8	0.42 gm.	0.38 gm.
Fe+3	100 ml.	2 gm.	10 ml.	7.4	0.70 gm.	0.65 gm.

**Table 2: Observed data of metal ions in basic medium**

Name of the metal ion	Volume of the metal ions solution taken	Amount of $\text{NH}_2\text{S}$ 5N (100 pm)	Volume of $\text{NH}_4\text{OH}$ 5N added	pH	Weight precipitate found in gm	Theoretical weight of precipitate in gm.
Mn+2	100 ml.	50 ml.	40 ml.	7.9	0.046	0.043
Zn+2	100 ml.	50 ml.	40 ml.	8.5	0.056	0.060
Ni+2	100 ml.	50 ml.	40 ml.	9.4	0.041	0.038
Co+2	100 ml.	50 ml.	40 ml.	9.7	0.042	0.038

It was observed during the present investigations that the metal ions precipitate almost quantitatively in the form of Hydroxides or in the form of sulphides



in basic medium. Hence, this method can be employed for the removal of heavy metal ions discharged by industries into water bodies like "Amani Shah Ka Nala". The toxicity level in vegetables grown by the polluted water has been found to be very high for human consumption. The great hazard of human health can be protected if the water is freed from heavy metal ions before using for irrigation.

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## SDG India Index and Gender Equality

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Dr. Preeti Agrawat\*

### Introduction

'Vasudhaiva Kutumbakam', has been our old belief and Indian philosophy which means "the world is one family", which showcase the spirit of India's approach to all aspects of life including social and economic development.

There are 17 SDG's also known as Global Goals , which were unanimously adopted by member countries of the United Nations in 2015 , namely, No Poverty, Zero Hunger, Good Health and Well Being, Quality Education, Gender Equality, Clean Water and Sanitization, Affordable and Clear Energy, Decent Work and Economic Growth, Industry , Innovation and Infrastructure, Sustainable Cities and Communities, Responsible Consumption and Production, Climate Action, Life Below Water, Life on Land, Peace, Justice and Strong Institutions, to make the people and planet prosperous without compromising the need of the future generation. All these goals bring to fruition the human rights of all and to secure gender equality and therefore empowerment of all women and girls. They are integrated, indivisible and balance the three dimensions of sustainable development: the economic, social and environmental aspects, which are critical for the human existence and significantly contribute to humanity and the planet.

NITI Aayog endeavours to constantly develop a shared vision of national priorities, sectors, and strategies with the active involvement of States treating them as equal partners in the national development process. NITI Aayog has also taken initiative to establish models and programmes for development of infrastructure and promote Public- Private Partnership, such as the Centre-State partnership model, namely, Development Support Services to States (DSSS) and the Sustainable Action for Transforming Human Capital (SATH) programme, which are designed to help States improve their social sector indicators by providing them technical support. Further, with the aim of balancing regional developmental, NITI Aayog has also taken

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special steps for regions needing special attention and support, like the Aspirational Districts, North Eastern States, Hilly Himalayan States, and islands by constituting special forums to identify their specific constraints and formulating special policies to ensure sustainable development.

### **Sustainable Development Goals in India**

India has been playing a major role in adopting and implementing SDGs as its national development goals, since the SDGs are mirrored in the development agenda of India. In response to these and realizing the SDG's, NITI Aayog released its 'Three-year action plan' covering years from 2017-18 to 2019-20 which proposes the set of action plan for various policies and institutional reforms in various sectors. Also the work is in advanced stages in progress on a 15 year vision, which will also include a seven year strategy. Owing the fact that India is federally structure, active participation of all states has been ensured by NITI Aayog. The 3 Year Action Agenda, a road map for future progress, focuses on transforming the society into more inclusive and making women empowered. India has witnessed a long history of gender discrimination, girl drop out ratio, gender gap ration, etc, therefore, the focus was on gender responsive budgeting, promoting women's economic participation including financial literacy, safety and security and ensuring their well being. For this, many schemes were introduced by Central Government.

- **SDG National Indicator**

As per UN, "Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world."

Accordingly, providing women with equal access to education, health care, decent employment and representation in political and economic decision-making processes at national, sub-national or at local level, will accelerate sustainable economies and benefit societies and humanity at large.

India has taken significant step by developing a National Indicator framework (NIF) for SDG monitoring, which is one of the most elaborated in the world with about 300 indicators and a coordinated system for generating and managing data through a process of multi-layered consultations involving union ministries, sub-national governments, research institutions, the UN system, and other international agencies as well as the civil society

The UN has defined 9 *Targets* and 14 *Indicators* for mapping development and improvements made by a nation in context to the SDG-5. Targets specify the goals and Indicators represent the metrics by which the world aims to track whether these Targets are achieved. Similarly, India has prepared its exhaustive list of indicators which includes, rate of crime against women, sex ratio at birth, ratio of female to male average wages, female facing physical violence, percentage of elected women over total seats in legislative assembly, proportion of women in

managerial positions, etc. This process of developing the NIF was led by Ministry of Statistics and Programme Implementation with support from NITI Aayog and other ministries.

- **Monitoring through the SDG India Index & Dashboard**

The SDG India Index & Dashboard has become a key monitoring and reporting tool, which is updated timely by NITI Aayog to figure out the actual development of each goal of sustainability and leads to analyzing the lacunae and improvement required. The SDG Index was first developed by NITI Aayog in 2018 in order to track progress of the country as well as the States and UTs compositely on all SDGs as well as on each individual SDG. Performance was computed and shown as the distance traversed towards SDG targets on various SDG parameters integrating economic, social, and environmental dimensions.

- **Voluntary National Review-**

Voluntary National Review (VNR) is a country-led process, an initiative to review progress of individual nation on achieving SDGs in alignment to international review of progress of the world at the United Nations High-Level Political Forum (HLPF). The VNR is a unique way of sharing transparent and shared perspective on status of SDGs in the country. India has also presented its VNR twice, first was in 2017 and the second in 2020 in collaboration with NITI Aayog, Union ministries, think tanks, UN agencies, as well as States/UTs represented in the SDG Task Force and the VNR SDG-oriented development agenda.

- **Localisation of SDGs**

Multi-stakeholder partnerships is the necessity of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals which could be realized by Localization of SDGs 'Localizing' is said to be the process of recognizing sub-national contexts in the achievement of the 2030 Agenda, from the setting of goals and targets, to determining the means of implementation and using indicators to measure and monitor progress. Localization relates both to how local and the state governments can support the achievement of the SDGs through bottom up action as well as how the SDGs can provide a framework for local development policy. Partnership with Civil Society Organisations (CSOs) is fundamental to localising the SDGs that requires contextualizing, implementation, and monitoring strategies at the local level for achieving SDGs.

Process in SDG Localisation at the Sub-national level:

- Step 1- Sensitization where SDG related awareness has to be made available to all the stakeholders.
- Step 2- State and District Indicator Frameworks, where national departments coordinate drafting of SIF and DIF , duly in consultation with NITI Aayog.

- Step 3- Improve Data Ecosystem , where every state and UTs should improve and make data collection system more robust to widen the quantum of indicators captured.
- Step 4- Building Partnership, where the States and UTs enter into partnership a knowledge partner or an agency
- Step 5- SSG coordination centre , where a centre will be set up in the SDG nodal department to coordinate all SDGs related initiatives.
- Step 6- Operationalize Dashboard, to review and monitor the information on dashboard about SDGs
- Step 7- Review Mechanism, to evaluate the indicators separately in depth so as to facilitate the review system of SDGs.

### **SDG India Index**

The first ever edition of the SDG India Index 1.0 was first introduced in December 2018, using 62 indicators from 39 targets across 13 SDGs; Goals 12, 13, 14, and 17 had to be left out owing to the lack of indicators for which State-wise data was available.

The second edition of SDG India Index 2.0, covering all the 17 Goals and 54 targets was revealed in December 2019, which was in comparison to the previous edition, more broad in coverage with 100 indicators, where 68 were completely aligned with the National Indicator Framework (NIF),. The third and latest edition of SDG Index 3.0, marks an improvement over the 2019-20 edition with a wider coverage of targets and also the Index offers insights into social, economic, and environmental status of the country and the States/UTs in their progression towards achieving the SDGs Index 3.0 is based on the framework of 17 SDGs with 169 targets. The Index estimation is based on data on indicators for the first 16 goals while a qualitative assessment has been made for Goal 17. While most of the indicators are directly taken from the NIF, some NIF indicators have been modified owing to data availability across all States/UTs for which respective ministries/departments, and States/UTs have been consulted extensively on the usage of the indicators and data availability

The composite score for each State/UT was computed by aggregating their performance across the goals, by taking the arithmetic mean of individual goal scores. The SDG India Index computes goal-wise scores on the 16 SDGs for each State and Union Territory. These scores range between 0–100, and if a State/UT achieves a score of 100, it signifies it has achieved the 2030 targets score of 0 implies that the particular State/UT is at the bottom of the list. The higher the score of a State/UT, the greater the distance to target achieved.

The SDG India Index 3.0 score for the States ranges between 52 and 75; for the UTs it scores from 62 to 79. This represents a notable improvement from 2019-20, where the scores varied between 50 and 70 for the States and 59 and 70 for the UTs.

India's overall SDG score improved by 6 points—from 60 in 2019-20 to **66 in 2020–21**.

For 2020-21, Kerala retained its rank as the top State with a score of 75 followed by Himachal Pradesh and Tamil Nadu with a score of 74 each. Among the bottom scorers was Bihar with the score of 52 followed by Jharkhand with the score of 56. Chandigarh too maintained its top spot among the UTs with a score of 79 and Dadar and Nagar Haveli along with Daman and Diu both at the score of 62.

Mizoram, Haryana, and Uttarakhand are the top gainers in 2020–21 in terms of improvement in score from 2019, with an increase of 12, 10 and 8 points, respectively. Where the score of SDG 5 in 2019-20 and 2020-21 were both below the score of 49 points, i.e. came into Aspirant category. Tamil Nadu and Himachal Pradesh took the alternate spot while Goa, Uttarakhand, Karnataka and Andhra Pradesh shared the fourth spot on the table.

Two goals - 2 (zero hunger) and 5 (gender equality) demand special attention, as the overall country score is below 50. Still, 9 States in Goal 2 and 12 States in Goal 5 moved out of the Aspirant category this year as compared to 2019-20.

While in 2019, ten States/UTs belonged to the category of Front-Runners (score in the range 65–99, including both) twelve more States/UTs find themselves in this category in 2020–21. Uttarakhand, Gujarat, Maharashtra, Mizoram, Punjab, Haryana, Tripura, Delhi, Lakshadweep, Andaman and Nicobar Islands, Jammu and Kashmir and Ladakh graduated to the category of Front-Runners (scores between 65 and 99, including both).

### **Goal 5 Index Score**

To measure India's performance towards the Goal of Gender Equality, nine national level indicators have been identified, which capture five out of the nine SDG targets for 2030 outlined under this Goal. These indicators have been selected based on the availability of data at the sub-national level and to ensure comparability across States and UTs.

SDG Index Score for Goal 5 ranges between 25 and 64 for States and between 33 and 68 for UTs. Chhattisgarh and Andaman and Nicobar Islands are the top performers among the States and the UTs, respectively. No state bagged a position in the category of Front Runners (score range between 65 and 99, including both). Two UTs (Andaman and Nicobar Islands and Puducherry) entered the category of Front Runners. Fourteen States and three UTs fell behind in the Aspirants category (with Index scores less than 50).

Table 1: Performance of States on Indicators of SDG-5

SNO	States/UTs	E.1	E.1	E.2	E.2	E.5	E.5	E.5	E.6	E.6	SDG 5 Index Score
		Sex ratio at birth	Ratio of female to male average wage/salary earnings received among regular wage/salaried employees	Rate of crimes against women per 1,00,000 female population	Per lakh women who have experienced cruelty/physical violence by husband or his relatives during the year	Percentage of elected women over total seats in the state legislative assembly	Rate of female to male Labour Force Participation Rate (LFPR) (15-59 years)	Proportion of women in managerial positions including women in board of directors, in listed companies (per 1,000 persons)	Percentage of currently married women aged 15-49 years who have their demand for family planning satisfied by modern methods	Operational land holding gender wise (percentage of female operational holdings)	
1	Andhra Pradesh	920	0.71	67.9	30.42	8.00	0.55	208	93.6	30.09	58
2	Andhra Pradesh	Null	0.56	43.3	7.40	5.00	0.26	Null	50	12.07	37
3	Assam	925	0.53	177.8	70.73	6.35	0.17	221	55.6	1.67	26
4	Bihar	895	0.75	32.3	4.58	11.52	0.06	214	51.4	14.00	48
5	Chhattisgarh	958	0.64	53.5	5.99	14.44	0.64	250	79.3	13.79	64
6	Goa	Null	0.78	43.1	1.18	5.00	0.44	197	56.5	25.69	66
7	Gujarat	866	0.81	27.1	11.17	7.56	0.28	190	67.4	16.49	40
8	Haryana	843	0.85	108.5	36.05	10.00	0.21	236	81.3	14.76	43
9	Himachal Pradesh	930	0.80	45.4	6.40	7.35	0.8	222	71.7	7.43	62
10	Jharkhand	923	0.58	47.8	8.18	12.35	0.28	229	63.8	11.27	61
11	Karnataka	924	0.75	42.5	7.70	3.14	0.34	209	82.5	20.07	67
12	Kerala	957	0.84	62.7	17.88	5.71	0.45	241	75.3	22.98	63
13	Madhya Pradesh	925	0.74	60.0	14.25	9.13	0.36	227	78	11.88	65
14	Maharashtra	880	0.75	63.1	14.57	8.33	0.44	196	84	15.46	60
15	Manipur	Null	0.76	17.2	0.97	3.33	0.36	Null	23.6	6.80	41
16	Meghalaya	Null	0.73	34.6	1.43	5.08	0.69	111	48.1	34.32	61
17	Mizoram	Null	0.91	28.7	1.02	0	0.42	Null	63.8	11.78	64
18	Nagaland	Null	0.86	4.1	0	0	0.31	167	43.5	9.85	48
19	Odisha	933	0.65	103.5	12.79	8.90	0.32	206	64.1	4.06	46
20	Punjab	890	0.67	41.5	11.40	5.13	0.26	190	80.9	1.55	46
21	Rajasthan	871	0.79	110.4	49.03	12.00	0.43	181	74.3	10.12	39
22	Sikkim	Null	0.88	39.8	0.32	9.38	0.68	Null	67.1	6.29	58
23	Tamil Nadu	908	0.73	15.6	2.06	8.51	0.49	185	83	19.65	68
24	Telangana	901	0.68	99.3	46.10	5.04	0.52	128	88.2	23.00	41
25	Tripura	Null	0.72	54.5	22.94	5.00	0.23	Null	57.2	12.30	39
26	Uttar Pradesh	880	0.94	55.4	17.22	10.61	0.19	243	49.9	7.65	56
27	Uttarakhand	840	0.71	46.5	11.79	8.45	0.29	234	71.8	11.93	46
28	West Bengal	941	0.53	64.0	36.13	13.61	0.28	166	72.7	3.17	41
29	Andaman and Nicobar Islands	Null	0.95	72.2	0.53	Null	0.39	Null	73	29.80	68
30	Chandigarh	Null	0.96	95.2	32.78	Null	0.35	274	72.5	10.83	62
31	Dadra and Nagar Haveli	Null	0.64	21.6	1.30	Null	0.5	184	66	20.75	51
32	Daman and Diu	Null	0.56	25.2	3.08	Null	0.22	156	60.8	18.92	51
33	Delhi	844	0.75	144.0	40.76	11.43	0.25	188	69.5	13.65	33
34	Jammu and Kashmir	927	0.78	47.8	5.42	2.30	0.45	100	66.3	7.60	48
35	Ladakh	927	0.78	47.8	5.42	2.30	0.45	100	66.3	7.60	48
36	Lakshadweep	Null	0.98	115.2	0	Null	0.25	Null	33.6	41.03	58
37	Puducherry	Null	0.75	12.1	1.01	13.33	0.41	615	87.1	22.80	66
	India	899	0.74	62.4	19.54	8.46	0.33	190	72	13.96	48
	Target	950	1	0	0	50	1	245	100	50	100

4 ● Aspirant (0-49) ● Performer (50-64) ● Front Runner (65-99) ● Achiever (100)

Source: SDG India Index 3.0 (NITI Aayog)

### SDG India Index Scores under various indicators for SDG-5 (2020-21)

- 8.46% seats in the State Legislative Assemblies held by women as per SDG Index 202-21 which is slightly elevated as compared to SDG Index report of

2019-20. With an aim to promote women leadership by providing 50% seats in Legislatures, No State/UT has achieved this target yet. Amongst all the Legislative Assemblies in the country, Chhattisgarh has reported highest women representation at 14.44%, followed by West Bengal Legislature at 13.61%.

- 0.33% ratio of female to male labour force participation rate as against 1. The ratio of female to male Labour Force Participation Rate is the highest in Himachal Pradesh at 0.8, while it is the lowest in Bihar at 0.06.
- Considering sex ratio at birth (females per 1,000 males) in 2020-21 the target was 950 females per 1000 males but Chhattisgarh and Kerala have surpassed this target with a sex ratio at birth of 958 and 957, respectively
- 72% of married women have their demand for family planning met by modern methods, Andhra Pradesh among the States and Puducherry among the UTs reported to be the best performers at 93.6 and 87.1 percent, respectively. Only 23.6 percent of demand for modern family planning methods was met in Manipur.
- 62 of crime against women are registered for every 1,00,000 female population as per SDG Index 2020-21, which was 58 in 2019-20. As reported, highest rate of crime against women was witnessed in Assam at about 178, followed by the UT of Delhi at 144 crimes per 1,00,000 female population. The lowest rate of crimes against women was reported in Nagaland at about 4 crimes per 1,00,000 female population followed by the UT of Puducherry at 12 crimes per 1,00,000 female population
- 20 Women experienced cruelty or physical violence by spouse or his relatives for every 1,00,000 female population in 2019. Assam at 71, recorded the highest number of victims per 1,00,000 females while among the UTs, Delhi at 41, recorded the highest number of female victims
- 190 among every 1,000 persons in managerial positions are women, with the target to have at least 245 women in managerial positions for every 1,000 persons, Puducherry recorded the highest score at 615 women in managerial positions for every 1,000 persons. Where as Meghalaya (111) and Jammu and Kashmir and Ladakh recorded the lowest scores in the country.
- 13.96% operational landholders are females, the percentage is stable since 2019. The share of female operational landholders was the highest in Meghalaya at 34.32 percent and lowest in Punjab at 1.55 percent.
- 33% higher wages for men than women in rural and urban India. With an aim to achieve equal pay for men and women, among the States, Uttar Pradesh has the highest number female to male wage ratio of 0.94 while West Bengal has the lowest at 0.53. Among the UTs, Lakshadweep is the best performer.



## Conclusion

SDG-5 aims to strengthen the status of women and girls and eliminate all sorts of discrimination against women. It safeguards and promotes equal rights for women in all realms of life and undertake reforms accordingly. Gender Equality is not only a fundamental right but also is a prerequisite for attaining the Sustainability and making the world a better place to live, not survive. Considering the Sustainability Index Ranking, 2021, India stood at 120<sup>th</sup> position out of 165 countries with an SDG Index score of 60.1. Though Government of India has started various scheme to achieve targets of SDG-5 with constant endeavour to promote women health, making them more skilled and economically independent, empowering them socially and economically.

Schemes like One Stop Centre; Pradhan Mantri Ujjwala Yojana; Beti Bachao, Beti Padhao; Poshan (National Nutrition Mission), Maternity Benefit Programme- Pradhan Mantri Matru Vandana Yojana. For promoting social and economic empowerment *Deen Dayal Antyodaya Yojana*-National Livelihoods Mission has been started to mobilize and organize poor women by building their skills. NITI Aayog has initiated women entrepreneurship programme by providing them ecosystem to grow and accelerate their entrepreneurship skill and contribute to country's economy.

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## **National Education Policy 2020 and Higher Education in India**

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Dr. Sanjay Parihar\*

### **Introduction**

NCERT will carry out the formulation of a new and mandatory national curricular framework for school education, NCFSE 2020-21, based on the ethics of this National Education Policy 2020, the need for first-line courses and after discussions with all parties' stakeholders, including state governments and ministries, trusted departments of the central government and other professional bodies and will be represented in all regional languages. The NCFSE document is planned to be reviewed and updated every 5-10 years, taking into account the front-line curriculum. In relation to all of this, NCERT, in consultation with key stakeholders such as SCERTs, Assessment Boards, the proposed new National Assessment Center, etc., and faculties, will lay the foundation for a transformation of the evaluation system. It is proposed that a National Assessment Center, PARAKH (Performance Assessment, Review and Analysis of Knowledge for Comprehensive Development) be established as the basis for standard setting within the MHRD, which would support the basic objectives of establishing norms, standards and principles. For student assessment and evaluation for all recognized school authorities in India, approval of State Achievement Survey (SAS) and conducting National Achievement Survey (NAS), monitoring of curricula of learning outcomes in the country and to encourage and encourage school authorities to change their assessment patterns to reflect the skills needs of the 21st century in line with the stated goal of complying with this guide.

Teachers who do excellent work should be prioritized and promoted, and salary increases should be awarded to motivate all teachers to do their best work. Therefore, a highly performance-based tenure, promotion, and salary structure will be developed with many levels within each teacher level that will incentivize and recognize A-level teachers. State / UT governments better develop a multi-parameter system for an adequate evaluation of performance based or based on peer reviews, attendance, achievements, participation, training hours and other forms of service to the school and society in the NPST.

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By 2021, in meetings with NCERT, the NCTE will develop a new and comprehensive National Framework Curriculum for Teacher Education, NCFTE 2021, based on the principles of this 2020 National Education Policy. The building will be developed after discussions with all stakeholders, including confirmed governments, relevant central government ministries / departments and various technical bodies, and will be available in all regional languages. NCFTE 2021 will also promulgate requirements for vocational education curricula. Thereafter, the NCFTE will be revised every 5-10 years to reflect changes in the revised NCFs, as well as emerging needs in teacher training.

The objective of the restricted school education system must be to continually improve educational outcomes; it should not overly restrict schools, prevent innovation, or demoralize teachers, principals, and academics. In general, regulation should seek to trust schools and teachers to strive for brilliance and excellence, while ensuring the integrity of the system by enforcing complete simplicity and full disclosure of all finances and procedures, and insightful results.

### **Observations**

The main principles and recommendations of this guideline suggest the state school education system, the day-to-day activities of the self-employed within that system and the focus of its regulation:

- The Ministry of School Education, which is the institution state in the school sector, it is for the general supervision and the formulation of policies responsible for the continuous improvement of the public education system; will not participate in the provision and operation of schools or the regulation of schools to ensure an appropriate focus on the improvement of public schools and the elimination of conflicts of interest.
- School operations and services of the statewide public school system are administered by the Directorate of School Education; will work independently to implement guidelines for operations and educational provision.
- There is an effective quality accreditation or self-regulation system in place for all levels of education, including private, public and philanthropic preschool education, to ensure compliance with essential quality standards. To ensure that all schools adhere to certain minimum professional and quality standards, the states / UT will establish an independent state body called the State School Standards Authority (SSSA). The SSSA will establish a minimum set of standards that all schools must follow based on fundamental parameters (namely, safety, security, basic infrastructure, number of teachers in all subjects and grade levels, financial honesty, and strong administrative processes). The framework for these parameters is created by SCERT in consultation with various stakeholders, especially teachers and schools.

Transparent public self-disclosure of all basic regulatory information established by the SSSA is widely used for public accountability and oversight. The dimensions to which the information itself must be disclosed and the format of the disclosure is determined by the SSSA in accordance with global best practices for standard setting for schools. This information must be available, current, and accurate for all schools on the SSSA public website mentioned above and on the schools' websites. Any complaints or grievances from interested parties or others arising from publicly available information will be decided by the SSSA. Randomly selected scientific feedback is collected online to ensure valuable input on a regular basis. Technology is used appropriately to ensure efficiency and transparency in all SSSA work. This significantly reduces the high burden of regulatory mandates currently carried out by schools.

- Educational affairs, including academic standards and curricula, are directed in the state by SCERT (in close consultation and collaboration with NCERT), which is being revitalized as an institution. SCERT will develop a Framework for School Quality Assessment and Accreditation (SQAAF) through extensive consultation with all stakeholders. SCERT will also lead a "change management process" to reactivate the CRC, BRC and DIET, which must change the capacities and work culture of these institutions in 3 years and turn them into dynamic institutions of excellence. Meanwhile, certification of the competencies of scholarship holders in the graduation phase is carried out by the evaluation / examination boards in the individual states.

## **Discussion**

Higher education plays an extremely important role in promoting human and social well-being and in the development of India, as established by its Constitution, a democratic, just, socially conscious, cultured and humane nation that promotes freedom, equality, brotherhood and justice. Higher education makes a significant contribution to the sustainable livelihoods and economic development of the country. As India becomes a knowledge-based economy and society, more and more young Indians are likely to seek higher education. At the social level, higher education must allow the development of an enlightened, socially conscious, informed and empowered nation that can find and put into practice solid solutions to its own problems. Higher education must provide the basis for knowledge creation and innovation, thus contributing to a growing economy. The purpose of a high-quality higher education is, therefore, more than creating greater individual employment opportunities. It represents the key to more active, more socially engaged communities, cooperatives and a happier, cohesive, cultured, more productive, innovative, progressive and prosperous nation. Mathematics, Statistics, Pure and

Applied Sciences, Sociology, Economics, Sports, Translation and Interpreting and Similar subjects are being established and strengthened in all universities which are necessary for a stimulating and multidisciplinary education and environment in India. Credit points are awarded in all undergraduate curricula for these subjects if offered in those colleges or in ODL mode if not offered in the university classroom. The various initiatives mentioned above will also help increase the number of international scholars studying in India and provide greater mobility to scholars in India who may be visiting, studying, transferring loans or conducting research at institutions abroad, and vice versa. . Courses and schedules in subjects such as Indology, Indian languages, AYUSH medical systems, yoga, art, music, history, culture and modern India, internationally relevant curricula in natural and social sciences and beyond, significant opportunities for social engagement, high quality. Residential facilities and campus support, etc. To achieve this goal of global quality standards, attract more international scientists, and achieve the goal of "internationalization at home". Scholars will receive financial support through various measures. Efforts are being made to promote the merits of scientists from SC, ST, OBC and other SEDGs. The National Scholarship Portal will be expanded to support and encourage scholarship recipients and track progress. Private universities are encouraged to offer their fellows a greater number of free vessels and grants

The operation of all independent verticals for regulation (NHERC), accreditation (NAC), funding (HEGC) and establishment of academic standards (GEC) and the general autonomous umbrella the organization itself (HECI) will be based on transparent public disclosure and will make extensive use of technology to reduce human interfaces in order to ensure a certain efficiency and transparency in its work. The underlying principle will be that of faceless and transparent regulatory intervention using technology. Strict compliance measures are ensured with strict measures, including penalties for incorrect disclosure of regulatory information, to ensure that universities adhere to basic minimum norms and standards. HECI itself will resolve disputes between the four verticals. Each industry at HECI will be an independent body comprised of individuals who have a high level of expertise in the relevant areas, as well as integrity, commitment, and a proven track record in public service. HECI itself will be a small, independent body of highly visible respected experts in higher education that will oversee and oversee the integrity and effective operation of HECI. There are appropriate mechanisms within the HECI to carry out its functions, including jurisprudence. Legal education must be globally competitive, adopt best practices, and utilize new technologies for broader access and timely delivery of justice. At the same time, it must be informed and enlightened with the constitutional values of social, economic and political justice and oriented towards national reconstruction through the implementation of democracy, the rule of law and human rights. The study plans of the law degree must reflect the sociocultural

contexts, as well as the history of legal thought, legal principles, legal practice and other related content in an appropriate and appropriate way with an empirical basis. Government institutions that provide legal training should consider offering prospective lawyers and judges' bilingual training in English and the language of the country in which the institution is located.

### **Conclusion**

The creation of such higher education curricula and degrees in arts, languages, and humanities will also lead to expanded, high-quality employment opportunities that can effectively utilize these qualifications. There are already hundreds of academies, museums, art galleries and heritage sites in dire need of qualified personnel to function effectively. When positions are filled with suitably qualified candidates and additional artifacts are acquired and maintained, additional museums, including virtual museums / em-museums, galleries and cultural heritage sites, can contribute to the preservation of our heritage as well as the Indian tourism industry. Special attention must be paid to disruptive new technologies that will inevitably transform the education system. When the National Education Policy was formulated in 1986/1992, it was difficult to predict what disruptive effects the Internet would have had. The inability of our current educational system to cope with these rapid and disruptive changes places us individually and nationally at a dangerous disadvantage in an increasingly competitive world. For example, while computers have far surpassed humans in the use of factual and procedural knowledge, our training at all levels overloads academics with that knowledge at the expense of developing their higher-level competencies. There are numerous challenges to conducting large-scale online exams, including limitations on the types of questions that can be asked in an online environment, dealing with power and grid outages, and preventing unethical practices. Certain courses / subjects, such as performing arts and academic practices, have limitations in the online / digital educational space, which in some cases can be overcome with innovative measures. Furthermore, when online education is not combined with experiential and activity-based learning, it tends to become screen-based education with a limited focus on the social, affective, and psychomotor dimensions of learning. Technology in education is a journey, not a destination, and the ability to orchestrate the various actors in the ecosystem is needed to achieve policy goals. A separate department will be established in the ministry to orchestrate the development of digital infrastructure, digital content, and capacity building to address the educational needs of schools and universities. With technology rapidly advancing and the need for high-quality e-learning specialists, it is necessary to nurture a dynamic ecosystem to create solutions that not only solve India's size, diversity and equity challenges, but also align with the rapid changes in the industry that are unfolding. Technology whose average life decreases from year to year. Therefore, this center will employ experts from the fields of administration,

education, educational technology, digital assessment and pedagogy, e-governance, etc. Central and state levels to develop detailed implementation plans for each aspect of this directive in accordance with the above principles in order to achieve the directive's objectives clearly and gradually. The designated teams formed by the MHRD and the States conduct annual joint reviews of the progress in the implementation of policies in accordance with the objectives established for each action, and the reviews are shared with the CABE. In the 2030s40 the entire policy will be operational, after which another comprehensive review will take place.

Steps to be taken by governments (a) Provide appropriate government funding for the training of SEDGs (b) Set clear goals for a higher TBE for SEDGs (c) Improve gender balance in college admission (d) ) Improve access for older people Quality higher education institutions in emerging districts and special education areas with increased numbers of SEDGs (e) Develop and support higher quality higher education institutions that teach in local / Indian or bilingual languages (f) Provide more financial support and scholarships for SEDG in public and private higher education institutions (g) Carry out public relations plans on higher education opportunities and grants for the SDGs (h) Develop and support technological tools for better participation and better learning outcomes.

- Reduce opportunity costs and fees for higher education;
- Provide more financial aid and scholarships to socio-economically disadvantaged scientists;
- Conduct information campaigns on higher education opportunities and scholarships;
- Incorporate admission processes;
- More inclusion of the curriculum;
- Increase the employability potential of university plans;
- Develop more courses in indigenous and bilingual languages;
- Ensure that all buildings and facilities are wheelchair accessible;
- Develop a Bridging Course for students and scholars with disadvantaged educational backgrounds;
- Provide socio-emotional and academic support and guidance to all these scholars through appropriate guidance and mentoring plans;
- Ensure awareness Educate teachers, counselors and academics on gender identity issues and incorporate them in all aspects of the university, including curriculum;
- Strictly enforce all bias and anti-harassment rules;
- Develop institutional development plans that develop specific action plans to Increase participation of the included SDGs.

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## Factors Promoting Medical Tourism in Madhya Pradesh: An Exploratory Factor Analysis

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### Introduction

As the number of daily corona cases have been on continuous downhill since the outbreak of second wave of pandemic; now the medical tourism sector looks poised and promising to cater its medical services for all range of ailments and wellness solutions. This new inning of this sector could be strategized to target the high value treatment of patients from developed nations. This could be done not only on the basis of economical aspect of treatments but also by focusing on to the hygiene and vaccinated status of its citizens. The number of foreign tourist patients visiting India incorporates higher number of people coming from Asian, African and neighboring countries; whereas the patients from developed nations like USA, UK, Canada, France and Australia were significantly in miniscule proportion. Most medical tourists are from Asian and African countries. A small number of people also come from the USA, UK, and Australia. According to government data published in February 2021, 697,453 international patients went to India for medical treatment in 2019. The majority of international patients to India are from countries in the immediate neighborhood, and most are not well off. India stands on 5<sup>th</sup> rank as a promising player in global medical tourism market owing to availability of world-class health practitioners and a wide range of treatments at affordable cost. India saw an influx of approximately 7 lakh foreign patients visiting country on their medical visa in 2019. FICCI's MVT Report suggested India's Medical value travel to touch \$9 bn by 2020 which couldn't happen because of the sudden outbreak of pandemic in early 2020 in

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India. India's massive vaccination drive and its indigenous ways to contain the spread of this pandemic has revived the possibilities to surpass the projected figures and tapping high-value foreign customers by offering them various reasons to visit country blended with medical benefits right at the core of value proposition. Sea, sun, sand and surgery which is published in Tourism management, talks about clinical with travel industry, where patients travel abroad for activities, has developed quickly in the previous decade, particularly for restorative medical procedure. Significant expenses and long holding up records at home, new innovation and abilities in goal nations close by diminished vehicle expenses and Internet promoting have all assumed a job. A few Asian nations are predominant, yet most nations have tried to enter the market. Traditional the travel industry has been a result of this development, in spite of its traveller bundling, and by and large advantages to the movement business have been extensive. The ascent of clinical the travel industry underlines the privatization of medicinal services, the developing reliance on innovation, lopsided access to wellbeing assets and the quickened globalization of both social insurance and the travel industry. The goal of this audit is to play out a writing survey of wellbeing and clinical the travel industry, to characterize wellbeing and clinical the travel industry dependent on the clinical writing and to evaluate the size of exchange human services. The Medline database was utilized for our writing audit. In our underlying quest for 'wellbeing the travel industry' and 'clinical the travel industry' we found a scarcity of formal writing just as theoretical vagueness in the writing. In this way, we audited the writing on 'the travel industry' all in all and with regards to human services. Based on 149 research literature, we at that point looked to conceptualize wellbeing of the travel industry and clinical of the travel industry. In view of our definitions, we in like manner looked to assess advertise limit globally. We characterized wellbeing the travel industry as "the composed travel outside one's nearby condition for the upkeep, upgrade or rebuilding of a person's prosperity at the top of the priority list and body". A subset of this is clinical the travel industry, which is "the sorted-out movement outside one's characteristic social insurance locale for the upgrade or reclamation of the person's wellbeing through clinical mediation".

Tourism is a constantly changing and dynamic industry that may help a country's economy grow by raising money and creating jobs. India has long had enormous potential to become a prominent tourism destination, thanks to its rich past, culture, and physical regions. According to the Economic Survey of India 2021, India scored 34th in the Travel and Tourism Competitiveness Index, up from 65th in 2013. Medical tourism, rural/natural tourism, religious tourism, historical & educational tourism are currently the most popular categories of tourism in India. In the fiscal year 2018-19, this industry accounted for about 5% of India's total GDP and 13% of total employment. In terms of international visitor arrivals, India was rated 23rd in the world in 2019. Uttar Pradesh had the biggest percentage share of domestic tourist visits in

2019, followed by Tamil Nadu, which had a 21 percent share. Telangana, Gujarat, and Rajasthan were among the top ten states visited by domestic visitors, accounting for 3.6, 2.5, and 2.2 percent of total visits, respectively. Madhya Pradesh stood at the seventh position with 3.8% of shares. However, Madhya Pradesh did not grab any position in top 10 states in terms of foreign visits.

Ministry of Tourism (2019) data shows that 57.1% tourist travel for leisure holiday and recreation, 14.7% visit for business and professional purposes. However, only 6.4% of tourist visit for medical purpose. With the help of this study author is exploring the factors which are needed to promote medical tourism in Madhya Pradesh. Author did not find any study in the context of Madhya Pradesh in context of medical tourism. Authors are putting their efforts to examine the factors which can promote the medical tourism in M.P.

### **Literature Review**

Guy, Henson, and Dotson (2015) has distinguished the citizens of USA who are willing to use the facilities of medical tourism or not. After a survey on national level, results found that participation in medical tourism depends on the nature of conditions like life threatening, only serious but not life threatening or life enhancing. The findings suggested that the marketers of medical tourism should serve better services of medical tourism to those who are already inclined to travel abroad. Medical travel can be better from categorization with as a sub category of medical tourism where patient tourist may move through their own volition. Increasing global medical industry, many medical tourism is a short distance, despite being a part of large tourism industry (Conell, 2013). Some opportunities have been defused by secondary value of internet and word of mouth. Definition some times commingle medical travel, medical tourism and health tourism. Hall, (2011) identified a few interrelationships among different areas of health and medical tourism, which can be included wellness and well-being tourism, stem-cell tourism, dental tourism, transplant tourism and xeno-tourism. The overall development of international medical tourism has been demonstrated to have potential implications for global health. Some public and individual public health risks are also covered for the analysis. Reed (2008) found the uses of medical tourism for two purposes, one for medical tourism for delivering health care and for the purpose of seeking health care. This research is based on travel for seeking the health care services. Both purposes are affected by speed and ease of international travel and communication related to cultural language and differences in legal procedures. Some motivational factors had also been described like contributing elements, elucidating challenges as well as for clinicians who can provide pre travel advises and instructions. In this population, the postoperative care have not only burdens the provincial health system with some intervention costs required for serious patients, but may also affect the resources allotted to the patients

in the clinic (Sheppard et al., 2014). After conducting a survey to calculate the frequency of medical tourism to our interventions and associated costs. A cost estimated around \$ 1.8 million CAD has been calculated and complete interventions in 62 tourists. Hopkins, Labonté, Runnels, and Packer (2010) found that one of the most popular indicators of globalization is medical tourism. Claimed benefits and risks have been estimated which is driven by high health-care costs, lack of access and long waiting period and new developed theories in developed countries the medical tourism such as USA, Canada, and Europe and also seeking medical care in Asia and Latin America. Some destination countries facilitate the benefits to the poorer citizens and offering the medical tourism remains the equity issue. An increasing number of patients in USA and some different developed countries, who are travelling in other countries for obtaining the health care benefits including elective surgery and long run medical care. This trend can lead the developing countries to emphasize technology-based health care for foreign citizens at the expense of basic health care for the citizens. This may cause the brain drain from government to private sector (De Arellano, 2017). The example of India and Thailand suggests the distortion effects of this trend and raise the questions. Alleman et al., (2011) found that the Americans who are travelling abroad for medical tourism with the assistance of medical tourism companies is relatively small. An attention to security in medical records and patient's outcome is a variable and cost saving which are dependent on prices of US. This research is a proof that overseas medical care may be reasonable alternative. Fetscherin, and Stephano (2016) found that the medical tourism index comes as a new type of country-based performance measure to evaluate the attractiveness of the developed or developing country. An Index constructed with four dimensions and 34 underlying factors. The Medical Tourism Index is a useful measurement which allows to measure the differences between the countries. MTI is also very useful tool for measuring the stakeholders for evaluating their medical tourism brands. The knowledge is not sufficient to know about the key drivers and how the developing countries are managing their medical tourism. The Korean medical tourism companies are trying to clarify the reasons which are cultural related, reasons for choice of travel destination in Korea. In Korea, the medical facilities are visited by Chinese tourists and the Japanese tourist. Mostly Asians visit Korea for cosmetic surgery. The study determined the factor analysis for Korean health professionals ( Choi, Kim, and Lee, 2018).

The above studies presented the national and international studies of medical tourism. Country specific studies have been identified the critical factors to promote the medical tourism in that particular country. Few studies are available in the context of India, but authors did not find any study in the context of Madhya Pradesh. With the help of this study author is exploring the factors which are needed to promote medical tourism in Madhya Pradesh.

### Objectives of the Study

The objective of this study is to explore the factors for promoting medical tourism in Madhya Pradesh.

### Research Methodology

This study is a primary database study and conducted in Madhya Pradesh (M.P.) to explore the factors, which are needed to promote medical tourism in the state. The study has considered a sample of 200 respondents of different demographic factors to get a variety of view. Primary and secondary data has been considered for the study. A structured questionnaire is prepared for this study and survey method is used for the data collection. The questionnaire is prepared on 5 points Likert scale. The reliability of questionnaire is tested by Chronbach alpha and for validity it is tested by two experts. When the instrument is found reliable and valid then it is used for study purposes. Simple random sampling is used for sample selection and study is restricted to Bhopal city only. Exploratory Factor Analysis (EFA) is used for extracting the factor.

### Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) has been used to explore the factors affecting medical tourism in Madhya Pradesh. To run EFA the data must follow the assumptions of the test. KMO test checks whether the number of observations in the dataset is enough for applying factor analysis or not.

### Results and Discussion

Table 1 present the results of KMO and Bartlett test of sphericity. KMO value of more than 0.6 is considered to be satisfactory and shows that data is sufficient for factor analysis. Here the KMO value is .940 and it fulfils the data sufficiency condition.

Bartlett's test of sphericity checks the correlation among the variables. The null hypothesis states that no correlation among the variables while alternative says correlation exists among variables. If no correlation exists then it is useless to apply factor analysis. Here p-value is less than 5%, and study fails to accept the null hypothesis, it states that sufficient correlation exists among the variables that are required to run the factor analysis.

**Table 1: KMO and Bartlett's Test for Factor Analysis**

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>		<b>.940</b>
Bartlett's Test of Sphericity	Approx. Chi-Square	7091.043
	df	367
	Sig.	.000

Source: SPSS 20

**Table 2: Eigen values of Principal Components**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14.886	35.444	35.444	14.886	35.444	35.444	7.316	17.418	17.418
2	3.930	9.356	44.800	3.930	9.356	44.800	6.596	15.705	33.124
3	1.930	4.596	49.396	1.930	4.596	49.396	4.060	9.667	42.791
4	1.333	3.173	52.569	1.333	3.173	52.569	2.648	6.304	49.095
5	1.257	2.992	55.561	1.257	2.992	55.561	2.237	5.326	54.421
6	1.057	2.517	58.078	1.057	2.517	58.078	1.536	5.657	60.078

Source: SPSS 20 Extraction Method: Principal Component Analysis.

Table 2 presents the eigenvalues of principal components. The number of components is equal to the number of variables. 20 variables have been identified from the literature review. In the result part, authors have presented only those variables which have eigen value more than 1. In principal component analysis eigenvalues of the first variable is always high. Factor selection is depending on the eigenvalue. Eigenvalue more than one is considered for the selection of factors. 6 factors are found suitable which are having eigenvalue more than 1 and explaining 60.07% variance of variables.

#### **Extracted Factors to promote medical tourism in the State**

- Infrastructure development and Marketing strategies
- Availability of Doctors, Nurses, & Other health care staff
- Co-ordination between health care and tourism sector
- Government concern and Involvement
- Exclusive facilities for medical tourist
- Professionalism in the management of hospitals

#### **Infrastructure development and Marketing strategies**

Infrastructure is critical for the growth of healthcare practices in Madhya Pradesh. This is one of the important factor for promoting the medical tourism. It provides the resources and support that healthcare professionals and management employees require to deliver high-quality treatment and services. Improved infrastructure can aid in the enhancement of healthcare delivery quality. To achieve the goals of high-quality care, improved patient happiness, and efficient resource usage, improvements in healthcare infrastructure are essential (Aiwerioghene, Singh, and Ajmera, 2021).

In the healthcare industry, marketing plays a critical role in promoting the institution. In the Madhya Pradesh healthcare sector, a better marketing approach is required. To market healthcare around the world, healthcare institutions should collaborate with tourism organizations. Proper planning and implementation of an integrated marketing strategy are required for M.P. healthcare sector to improve in terms of medical tourism (Zarei and Maleki, 2019).

**Availability of Doctors, Nurses, & Other health care staff**

Another important factor is availability of qualified doctors, nurses, and other health care staff. Doctors must be educated and kept up to date on new medical treatments and technology. In this approach, patients' trust in M.P. health sector would grow. In M.P., there are insufficient medical facilities and hospitals to train doctors. The brain drain of the state health professionals to other countries is a long-term issue that has impacted the state health sector (Sultana et al., 2014).

**Co-ordination between health care and tourism sector**

To boost medical tourism in the state, the development of the country's health system would rely heavily on better collaboration between the healthcare and tourist industries. Tourism is a major magnet for individuals who want to travel across the border to see the country's historical and scenic features. More knowledge of the state health system and increased health tourism will result from the integration of health and tourism (Jain and Ajmera, 2018).

**Government concern and Involvement**

The role of governments in any country is to ensure that their citizens have access to high-quality healthcare. In M.P., a hot problem in the domain of healthcare delivery is the necessity for the government to get actively involved. All specialized medical procedures should be easily available in hospitals, according to the government. They should also participate in the promotion of the state as a medical tourism destination. The government is putting efforts to improve the health infrastructure in the state. M.P. people believe that active involvement of the government can develop the MP as a medical tourist destination (Ajmera, 2017; Jain et al., 2018).

**Special facilities for medical tourist**

Creating exclusive medical tourism facilities in M.P. will help to improve healthcare and promote the country as a tourist destination. Medical tourism has exploded in popularity in recent years. The state should improve its medical tourism by focusing on new technology, talents, and Internet marketing. The rise of medical tourism will lead to the commercialization of health care, which will focus on the construction of luxury medical tourism facilities, putting a premium on technology and quick access to health resources (Ormund, Mun and Khoon, 2014).

**Professionalism in the management of hospitals**

Management of a healthcare facility is critical to ensuring high-quality service delivery and clinical competence. All healthcare workers must maintain a high level of professionalism. There will be a lack of productivity and performance where management is ineffective. Staffing is a critical component of healthcare delivery. As a result, suitable measures must be made to assure both clinical and managerial

personnel professionalism. Staff training on a regular basis will produce the expected level of professionalism in healthcare management. The output of the hospital staff's professionalism is also a factor in patient satisfaction (Numerato, Salvatore, and Fattore, 2012; Correia, 2013).

### **Conclusion**

The objective of this study is to explore the factors which can promote the medical tourism in the state. A sample of 200 respondents of M.P. have been considered for the study and their responses has been collected on a detailed structured questionnaire. By exploiting EFA, the authors have identified six important factors which can be important to promote the medical tourism in the state. The important factors are: infrastructure development and Marketing strategies, availability of Doctors, Nurses, & Other health care staff, Co-ordination between health care and tourism sector, Government concern and Involvement, Exclusive facilities for medical tourist, Professionalism in the management of hospitals. The study is useful for the government, stakeholders, and tourism department of the state to developed the state as medical tourism destination.

### **Limitations of the Study**

The major limitation of this study is the small size of sample and the study has considered only the four districts of M.P.: Bhopal, Indore, Gwalior and Jabalpur. The findings of the study cannot be generalized at national level. The state similar to M.P. can take the inputs from this study to promote medical tourism.

Future studies can be conducted with large number of sample and other districts of the state can be considered for the study.

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## **The Role of Educators in Teaching-Learning with Technology: Significance of ICT Integration during COVID-19 Pandemic in an Inclusive Classroom Settings**

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Fr. Baiju Thomas\*

### **Introduction**

A pandemic has gripped the whole world. Every one of us is putting out an effort to find a way out of this plight. The effects of COVID-19 may be felt across many industries. Since its discovery, the COVID-19 virus has had a significant change in the educational sector. Because of this, instructors all around the globe are having difficulty keeping the educational process going ahead. Universities are frantically trying to devise solutions to this perplexing situation. Educators had no option but to convert their traditional classrooms into web-based learning settings after the COVID-19 pandemic closed most schools in March 2020. A significant global occurrence had just happened. In educator identification and development studies, participants were asked: (Tripp, 1993; Butterfield et al., 2005; Monereo, 2010). Thus, educational institutions must work properly now on creating contingency plans in light of this judgement (Rieley, 2020). Whenever an unexpected event conflicts with the specified procedure, it is among the most frequent critical events in learning. This random occurrence may potentially cross an emotional threshold, endangering the teacher's reputation. They may thus serve as valuable teaching resources and accelerators for rethinking current instructional strategies and learning (Monereo et al., 2015). There's been a non-recoverable instructional issue in India's school system during the pandemic. Everybody's learning program has been impacted as a result of the countrywide school closings. The outbreak for the sector has mandated a digital and hybrid education strategy. Education is another sector that is affected. The use of ICT, on the other hand, benefits both instructors and pupils. Owing to these new tools, it's

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much easier to both teach and learn. Society is undergoing radical change as a result of its widespread use it. In every aspect of life, they have a bearing. Similarly, advancements in ICT are changing schooling without a doubt. The use of technology improves the effectiveness and enjoyment of both teaching and learning. We must first comprehend ICT and education as a whole before we can grasp the impact of ICT on education. According to many experts, technology in the classroom allows teachers to better tailor teaching for each student. Some think this may help students interact better, participate more actively, and utilise multimedia technology even while providing students with more excellent self-directed learning (Jaffee, 1997; Collins and Halverson, 2009). Despite the numerous challenges of e-learning in the country, attempts were created to make instructional technology old and newly available to everyone. As a consequence of the outbreak-induced global slowdown, most instructors were forced to convert to online education, which necessitated the employment of digital technology to assist their students. The consequences of COVID-19-related school closures go well beyond the classroom. Educational inequalities have risen over the last decade, as per a recent study (Dorn et al., 2020), while students' behavioural-emotional imbalances have also increased (Colao et al., 2020). Using ICT in teaching-learning is critical in today's digital age because it provides students with the opportunity to acquire and implement the necessary twenty-first-century skills. When all is controlled by the Web and fresh new technical advancements, it's hard to ignore their role in language learning in the digital world. Consequently, ICT seems to be a "overcome" that helps learners bond the learning gap and "stay alive" in the process. Instructors who are separated from their pupils may utilise video conferencing technology to teach or track the progress of their students' learning in an inclusive classroom setting.

### **The Importance of Technology in COVID-19 Pandemic**

Global output has been impacted by the COVID-19 pandemic, which has been found all over a wide range of technical and technological institutions. Despite this, the pandemic's effect has compelled democratic states to make various recent study financial assistance schemes. (Accionessobre, 2020, Gobiernoianza, 2020). Since its discovery, the COVID-19 pandemic has had a significant impact on the education sector. While attempting to keep the learning experience going ahead, it's produced a host of difficulties for educators around the globe. An educational problem has occurred in India's academic system in terms of the outbreak. Various human activities (such as business, education, and employment) have migrated from traditional to digital to fulfil this requirement while preserving the established order. Everybody's learning program has been impacted as a result of the countrywide school closings. Since the epidemic, a multi-task learning strategy has been forced on the sector, integrating online and conventional learning components. Technologies are a valuable and essential tool for regional governments from the front line as a part of the COVID-

19 incident. For centuries, human-to-human technology linkages have been well-documented. Despite this, little effort has been produced in understanding the present worldwide epidemic. The argument about using technical advancements has intensified considerably during the current COVID-19 outbreak. There are substantial restrictions on freedom of movement, the functioning of structures and rules for obvious obstacles due to the coronavirus's continuing worldwide spread. Consequently, technological advances have spread more quickly throughout the general public, but the gap among inhabitants who have and don't have accessibility to these technical advances has widened significantly. Our scientific community now has a new window of perspective for studying innovation behaviour in emergency moments because human action and the spreading of new technologies are evolving at a fantastic rate. Understanding how the COVID-19 pandemic used digital technology is critical because of how much has been published and still needs to be understood. Technology advancements in economic crisis must safeguard people's rights while also assisting to narrow the social gap and encourage the type of change required to accomplish global objectives. Various local authorities should guarantee that no area is left alone to prevent the technological age from widening the divide among wealthy and developing countries. As we reflect on the technical advances that helped to minimise the full impact of the eruption, we offer a peek into our thought. However, numerous studies on the effect of advanced technology on COVID-19, technology's applications and services to the conflict remain restricted. Many people believe that as modern technology advances, proven study plans integrating ICT will be crucial in helping people combat this disease. Technology, according to Tezci (2011), must do more than supplement current teaching methods. Here, technology has significantly affected people's day-to-day lives, such as their access to health care and information and their interactions with political authorities. The sector has been able to adapt and flourish in the face of rapidly changing virtual learning techniques because of its usage. Experts think that educators' use of ICT will bring better results (Collins and Halverson, 2009). Yet, investigators from across the globe have examined the most common ICT solutions. Still, these results throw a better efficacy of ICT facilities are provided to students in an inclusive classroom setting.

### **Information Communication Technology (ICT)**

Wholly over the twenty-first century, the word "technology" has become a significant issue, particularly in teaching-learning. Across most societies, technologies will take the role of conventional learning enablers. Advancements and changes brought about by integrating technology in today's climate have profoundly changed our civilisation (Grabe, 2007). Technological advances provide students with fresh viewpoints on the material they're studying (Chai, Koh and Tsai 2010). By requiring interactive instructional methods, ICT aids learners in focusing on the more essential

ideas instead of meaningless chores. (Levin and Wadmany 2006). ICT integration should be considered in teaching methods in classrooms in various schools that aim to prepare young persons in "a knowledge-based society" (Ghavifekr, Afshari&AmlaSalleh, 2012). Today's modern education field makes extensive use of ICT, which comprises a computer, the Web, and other digital delivery methods including radio, TVs, and projector, among others. In school, children are partaking in a wide variety of computer activities, whereas at home, they partake in a smaller range of computer activities regularly, according to Kent and Facer (2004). It is becoming more common for ICT to be used effectively in teaching-learning and assessing in an inclusive classroom setting. As a vital instrument for educational reform and transformation, ICT is primarily regarded. According to previous research, efficient use of ICT may increase academic performance and increase students' feelings about what students learn in the classroom and real-world problems they confront (Lowther et al., 2008; Weert and Tatnall 2005). Students must alter their preconceptions by pursuing information and deviating from conventional methods, according to Weert and Tatnall (2005). They'll need to be ready for and open to new ideas and knowledge as time passes. Shortly, these children will have to learn how to make use of it. Because of advancements in ICTs, more people can access higher education. Due to technological tools, learning may happen at any point or any location. With an online program, you get total access to the course content at any time. Students and instructors may interact around the exact moment when videography is used in the classrooms. Learning-teaching isn't any more solely reliant on hand-outs for advancements in ICT. Videos and photos, audio clips, and graphical displays are a few of the resources accessible on the Web. According to a recent study, ICT may assist in the transformation of a class into one that is learner-centred. Educators offer their pupils the power to make decisions, set objectives, etc., since students are actively engaged in the ICT classroom (Lu, Hou and Huang 2010). ICT is enhancing teaching-learning in very many methods, but research has also identified specific barriers. Students, teachers, administrators, and ICT facilities are all mentioned as sources of difficulty in the subsequent sentences. There are also many methods for accepting challenges revealed in an inclusive classroom setting.

### **ICT in Teaching-Learning Processes**

Learners need to attain and use twenty-first-century skills in this information realm by using ICT in teaching and learning processes. Learning-teaching may be made easier for educators if they are educated about ICT usage problems and challenges. The effects of fast ICT development on education has been discussed for over two centuries by instructors. It was because of ICT's ability to provide a well-structured and all-encompassing educational environment. To keep up with the digital world, educators must include technology devices in their lessons. The study's primary focus is on how effectively ICT integration works in inclusive classroom

settings throughout teaching-learning processes. ICT will assist students in preparing for the challenges of 21st-century living. ICTs understanding will prepare children for academic challenges (Grimus, 2000). Integrated ICT is a scientific and technology professional and organisational technique used in information systems, its application and relationship with social, economic, and cultural problems (UNESCO, 2002). Utilising ICT may allow kids to learn the skills they need in today's highly competitive world (Grimus, 2000). The use of ICTs may help students improve their skills, deepen their dedication, and expand their range of thought and knowledge (Grabe&Grabe, 2007; Hussain et al., 2011). As part of the effort to assist educators in developing their professions in ICT use, institutions should contemplate offering workshops or refresher training to their faculty to help them develop their ICT skills and be more equipped for any challenges they may encounter (Staples, Pugach and Himes, 2005). The tremendous potential of ICTs in enhancing learning results with the most up-to-date material without impediment is apparent even if students' reasoning capacity is corrected (Education Blueprint, 2013). Instructional ICT includes any information systems that concentrate on the collection, preservation, modification, administration, transportation or receipt of data required for academic purposes. (Yuen et al., 2005). According to a study, using ICT in the classroom will increase student involvement in interactive activities by providing more comprehensive knowledge and expertise. Teachers' opinions and attitudes will affect how they utilise ICT in the classrooms (Hatlevik&Arnseth, 2012; Rampersad, 2011). If the Ministry of Education fully promotes ICT in teaching, instructors will have better access to resources and upgrades. Students and instructors may exchange teaching-learning materials across boundaries when ICT is integrated into the inclusive classroom settings.

### **ICT Integration in Education**

Every nation's values, infrastructure, and social position differ, making ICT integration a difficult job for people worldwide to do successfully. As a consequence, it would be impossible to adopt ICT-integrated teaching-learning strategies in all institutions. Educators, students, and school officials must all lead to the effective integration of technology. According to this critical evaluation, ICT integration in learning-teaching is now good, but there are still several roadblocks to overcome. Throughout the study, the holes in the existing body of information are emphasised to guide future studies on ICT use. ICTs have only existed for a brief time in modern industrial civilisation. Many countries place a higher emphasis on having basic ICT skills and concepts than they used to (Daniels, 2002; Rampersad, 2011). Astonishing growth has been seen in educators' use of it. The development of ICTs is generally acknowledged as a global problem of critical significance to humanity as a whole (Olaofe, 2005). As a consequence, Serhan (2009) realised that ICT increases educator freedom by allowing them to create their curriculum. Learners who would be more at ease with their instructional experience will be best able to integrate and transfer their

information while using new technology. Kitschner and Davis (2003) found that professors utilising ICT in teaching-learning for academic purposes must have the following skills. With proficiency in using ICTs for learning needs, expertise mastery of various educational frameworks incorporating ICT, adequate expertise in using ICTs as mental skills, knowledge in using ICTs for guidance, and expertise to comprehend the policy aspects of ICT use in lessons all fall under this umbrella of proficiency. ICTs claim to ensure quality and efficiency in both teaching and learning and eliminate all administrative work. And per the paper, ICT integration in teaching-learning has continued tentative and has not yet received a widespread promotion. It was also noted that there was a widespread social problem of inadequate planning and evaluation for major national projects, preventing an in-depth analysis of the results and practical application of newly acquired information from inclusive classroom settings.

### **The Role of Educators in Implementing ICT in an Inclusive Classroom Settings**

Confident people see inclusion as a pedagogical concept that may lead to social and emotional segregation, while others see it as something else entirely. Because mainstream education classes did not always satisfy all students' demands, they relied heavily on ICT in specific subjects. Educators need expertise, technology, and effort to make ICT usage more widely accessible. The results of this paper, which have consequences for educators, need specialised educators to be regarded managers of school employees and more knowledgeable about ICT for All. If additional comparable research or investigations into its potential are carried out, one-to-one teaching may be suggested for children with specific learning difficulties in future studies. Because performance ethics and norms must be met in the ICT space, expertise is more essential than learning disabilities. All pupils must be included and integrated to get high-quality instruction. There has been an increase in the demand for IE, which has led to significant advancements in learning. Because students with disabilities attend school alongside their peers in the local region, educational standards must adapt to accommodate a diverse student population with varying requirements. Some twenty-first-century features include ICT's rapid expansion and the globally connected service's increased ubiquity due to better-delivering services quality and speed. This technology has affected even formative evaluation, and this is where the latest science information is collected and evaluated (Shariatmadari, 2012). Using ICTs, a new area of study has started opening that is critical in today's climate. Educators' perspectives on ICTs are critical in this situation. This study's goal was to find out how educators in inclusive classrooms utilise and integrate ICT, and the results are summarised in this paper. This technique will also help to determine the elements that contribute to effective ICT-assisted education. As an instance, we offered instances that may be applied in a wide range of various situations. Many technologies, including ICT, can assist in bringing IE to fruition and expanding it. All students should have fair opportunities to a regular education sector,

not a unique setting, according to the concept of IE. All educators in the education system may profit from ICT, including teachers, students, and their families. ICTs can encourage students of all capacities, even those with additional needs, to pursue lifelong learning. The use of ICTs increases the freedom, social inclusion, and academic possibilities available to people with impairments. An open institutional or classroom are required for a much more inclusive classroom setting.

### **Conclusion**

The Education System has been severely affected by the worldwide COVID-19 viral outbreak. The challenging education in this country, like the COVID-19 occurrence, has done, is an indispensable revolution. In this study, we examine how the COVID-19 epidemic has generated a digital renovation in younger people's primary education, the many technological divisions that have emerged and been perpetuated, and the potential roadblocks encountered along the process. Because of this, instructors around the globe are having a difficult time working to keep the teaching-learning process going ahead. Societies are undergoing an enormous transformation as a result of the advancement of ICTs. These individuals have a significant influence on every facet of our daily life. Similarly, it's difficult to deny that advances in ICT are changing education. As a result, the teaching-learning process becomes more helpful and engaging for the students. It's challenging to look at how ICT impacts education without also looking at learning. This covers everything from stereos and TVs to cellular phones and other digital equipment. By using cutting-edge technologies, teachers may better assist their students with their learning. It involves interactive reality, which is a subject within the larger area of ICT. More effective utilisation of technology in education was made feasible by instructors using educational ICT. Academic and non-academic activities may be proposed by educators using the data they've acquired on their pupils' development. The use of ICT by educators makes it easier for them to build personal relationships with their pupils and provide them with an evaluation tailored to meet their particular requirements in an inclusive classroom setting.

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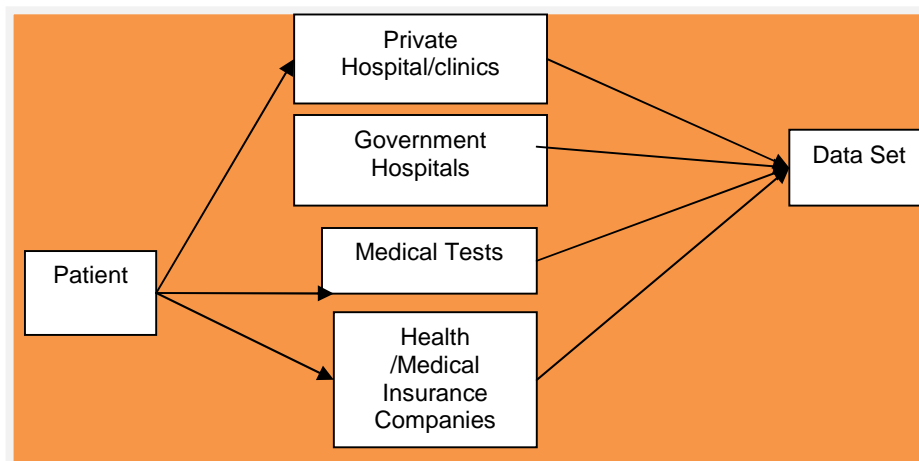
## Block Chain Technology and Health Care: Importance and Issues in India

Dr. Meenu\*

### Introduction

In India, both public and private health organizations are enabling themselves to adopt blockchain-based solutions for enabling their electronic health records system to record health information like health check-up records, medical tests, surgeries, insurance claims, medical bills payments, medicinal prescriptions records to the respective unique ID stored on the blockchain platform. Blockchain-enabled national e-health related information of an individual can be stored and accessed at any time by the national digital health authority. The health-related information of an individual can be recorded from his/her birth like birth registration, immunization record, in case of any illness, visit the clinic, personal health data, planned surgery, personal and employment-related health check-ups, and any medical treatment.

**Figure 1: Network of Health Care System and Block Chain**



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(Kumar, 2020) The demand and encouragement to use digital platforms in various technologies like big data and Machine Learning has proved to be efficient in various application areas and industries. Blockchain technology has been started by Santoshi Nakamoto in the year 2008; this was developed with the sole purpose to serve cryptocurrency bitcoin. The Blockchain cannot be compared to any existing system or platform. Blockchain can be used in a place where both end-users, which create trust between them. Blockchain has gained popularity in the area of decentralized approaches to create management value. Many Governmental sectors and the non-governmental sector has introduced the concept of Blockchain because of its advantages provided by the technology, it provides some of the important services like security, scalability, and improvement inefficiency. The Blockchain has slowly induced into various sectors, thus providing ease of work in day-to-day life. This technology is very useful in a country like India because people here urge for new techniques. There is a possibility that many industries adopt this technique to reach their heights in their domains.

#### **Key features of Blockchain Technology**

- Distributed ledger
- Near real-time updates
- Chronological and time-stamped
- Cryptographically sealed
- Programmable and enforceable contracts

#### **Benefits of the blockchain-enabled system**

It helps in online updates of admission in hospitals, electronic clinical details, patients past medical history, integration of diagnosis system, monitoring of medicine dosages, faster discharge process by coordination with other departments in the hospital, automation of billing process, information related to a medical insurance policy, insurance claims and updating of the insurance policy. It helps the patients in getting accurate, timely easy access to health care services. It saves money, time, and energy for patients. The blockchain system is patient's health care-centric. It makes it easy to provide health-related welfare assistance to the patients. This system brings transparency, efficiency, and accountability to the health care system. it helps in maintaining records of the pharmaceutical supply chain, health insurance claims, clinical trials management. Accurate information about the disease helps in better cures and proper treatment by the doctors. It helps in timely health care and saves money for patients

(Mackey, 2020) the insurance claim money is being misused and lead to many frauds which are very difficult to handle by the insurance companies as well as by the government. Blockchain technology enables secure data management with transparency, which could mitigate this risk of health care fraud and abuse.

(Sharma, 2021) The technology adoption practices are expected to supply applications like distributed, secured medical and clinical data and patient-centric systems which will enhance the efficiency of the healthcare industry.

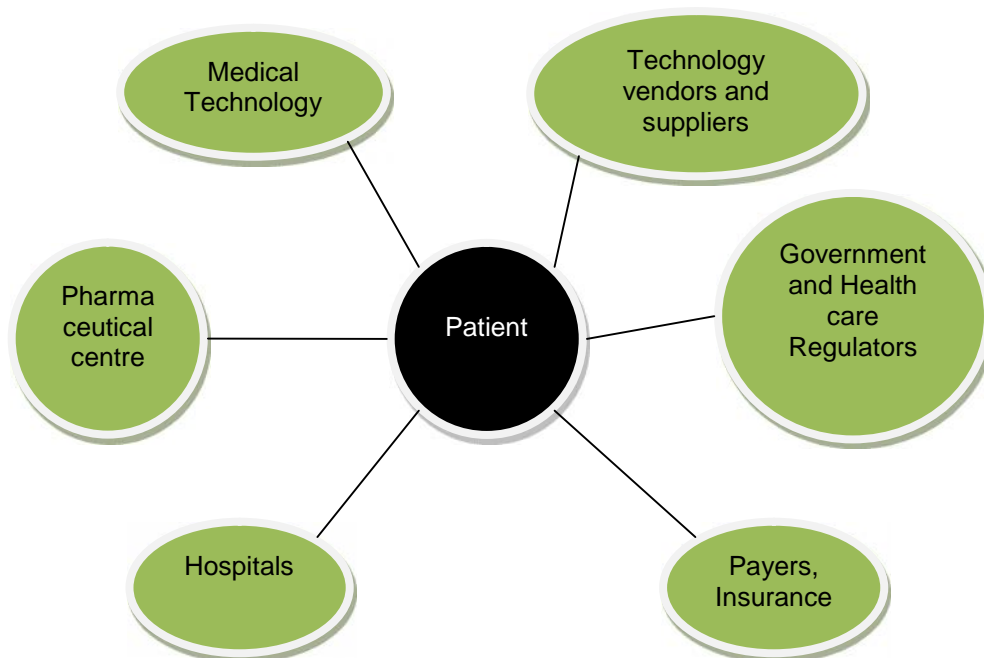
(Khurshid, 2020) In the homeless population, barriers to housing and supportive services include a lack of control or access to data. Blockchain technology provides decentralized data sharing, validation, immutability, traceability, and integration.

(Durneva, 2020) Blockchain offers a promising new distributed technology to deal with the challenges of knowledge standardization, system interoperability, security, privacy, and accessibility of medical records. These blockchain-based health care applications may improve patient engagement and empowerment, improve health care provider access to information, and enhance the utilization of health care information for medical research. Blockchain health information technology provides benefits like ensuring data privacy and security of health data, facilitating interoperability of heterogeneous health information technology systems, and improving the standard of health care outcomes

#### **Different stakeholders of Blockchain in the health care system**

The different stakeholders of block chain in the health care system are: Medical technology, Medical technology vendors and suppliers, pharmaceutical centre, hospitals, payers, insurance, and government and health care regulators.

Figure 2: Different stakeholders of Blockchain in the health care system



### **Utilization of Blockchain Technology in Health Care/Application**

(Esmaeilzadeh, 2019) Blockchain technology is probably going to disrupt the present information exchange models utilized within the health care industry. There are significant differences in patients' perceptions of various exchange mechanisms with regard to patient privacy concerns, trust incompetency and integrity, opt-in intention, and willingness to share information. Interestingly, participants hold a positive attitude toward the implementation of blockchain-based exchange mechanisms for privacy protection, coordination, and knowledge exchange purposes. (Peters, 2017) For the health care industry, blockchain technology stands to revolutionize the interoperability, security, and accountability of electronic health records and health information technology, medical supply chains, payment methodologies, research capabilities, and data ownership. As blockchain technology continues to develop, it's important that surgeons and other stakeholders understand both its capabilities and its limitations. (Gaynor, 2020) blockchain can solve current health care issues in three main areas: data exchange, contracts, and provide chain management. (Zhang, 2019) The potential of blockchain technology to realize strategic goals, like value-based care, is increasingly being recognized, but there's a requirement to develop a framework for holistically assessing the performance of blockchain initiatives in providing value-based care by extending the prevailing balanced scorecard evaluation framework.

(Ivanteev, 2020) modern medicine has been using many Blockchain technology applications. This can be data management, accounts, and finance, as well as others. It is important for each category of the task to choose their own solution and bring the maximum effect for the participants of the system, which will interact on new terms. The key beneficiaries of the participants are going to be health care users, health care providers, and insurance companies.

#### **Areas of health care that will be benefitted from the utilization of this technology**

- Diagnosis of disease
- Immunization
- Insurance claims
- Medical testing
- Beneficiaries of welfare schemes of health
- Pharmaceutical
- Medical technology

### **Blockchain and COVID-19**

(Tan, 2020) Blockchain technology is one among the various disruptive technologies of the Fourth technological revolution which will irrevocably change the way we live and work. These technologies are well embedded in the areas of global finance, health care, and defense, to name a few. Blockchain technology are going to be the unifying platform for sharing patient data currently inaccessible thanks to the siloed architecture of legacy software systems, and as a result, potentially be the basis for precision or individualized patient treatment. In the current COVID-19 environment, clinicians will rely more on telehealth to scale back person-to-person contact. This service is often delivered by the clinical team confidently within the veracity of the patient data made accessible through the blockchain platform. The pharmaceutical supply chain industry is adopting blockchain technology to make sure supply chain provenance. (Khurshid A., 2020) The widespread death and disruption caused by the COVID-19 pandemic have revealed deficiencies of existing institutions regarding the protection of human health and well-being. Both a scarcity of accurate and timely data and pervasive misinformation are causing increasing harm and growing tension between data privacy and public health concerns. Blockchain is being applied and relevant to the present COVID-19 crisis. A nationally coordinated effort to explore blockchain to deal with the deficiencies of existing systems and a partnership of academia, researchers, business, and industry are suggested to expedite the adoption of blockchain in health care.

### **Limitations/Barriers to the Blockchain system**

There has been an increasing interest in blockchain technology from the health care sector in the last couple of years. Blockchain technology allows patients to possess a lively role in developing and updating their own patient data. (El-Gazzar, 2020) It has been opined that blockchain technology will not solve the issues encountered by the health care sector; in fact, it may raise more issues than it will solve. (Durneva, 2020) However, barriers to using blockchain technology to build health information technology include security and privacy vulnerabilities, user resistance, high computing power requirements, and implementation costs, inefficient consensus. (Oderkirk, 2002) it is difficult to implement block chain technology in real practice in health sector as the data related to privacy may be leaked and misused by the hackers. (Esmaeilzadeh, 2019) Blockchain technology is probably going to disrupt the present information exchange models utilized within the health care industry. There are significant differences in patients' perceptions of various exchange mechanisms concerning patient privacy concerns, trust incompetency and integrity, opt-in intention, and willingness to share information. Interestingly, participants hold a positive attitude toward the implementation of blockchain-based exchange mechanisms for privacy protection, coordination, and knowledge exchange purposes.



(Vervoort, 2021) this technology is more prone to error in data handling in health sector than in any other sector. Blockchain technology may be a novel, distributed peer-to-peer ledger technology that uses unique, immutable, and time-stamped blocks of records or sets of knowledge that are linked as chains. We should understand the blockchain's unique opportunities to enhance healthcare services and access to worry during future pandemics or natural disasters.

(Zhuang, 2020) There are multiple barriers to patient-centric Health Information Exchange within the current system, like security and privacy concerns, data inconsistency, and timely access to the proper records across multiple healthcare facilities. (Queiroz, 2020) Blockchain is still in its infancy. Scholars and practitioners are not fully aware of the potential of blockchain technology to disrupt traditional business models. Additionally, the disintermediation provided by blockchain applications has the potential to disrupt traditional industries (e.g. health care, transportation, and retail).

(Paranjape, 2019) The use of blockchain technology in health care is at a promising stage in development but blockchain-based applications are yet to be demonstrated as a viable platform for exchanging and reviewing information. Healthcare systems should be cautiously optimistic regarding the potential of blockchain and do a thorough business and technical diligence that is driven by targeted use cases to be successful.

#### **Policies of the Government of India regarding the utilization of blockchain technology in health care.**

- The Centre of Excellence in Blockchain Technology provides research-led thought leadership and drives strategic blockchain developments to deal with complex business problems in governance, to enhance government service delivery.
- Country-wide information exchange of electronic health records has been set up in our country. Arogya setu app and covid vaccination ( Cowin site) are being used to keep records of all individuals in our country.
- Ayushman Bharat Yojana has been implemented by the Government of India for universal health coverage by 2022.

National Health Policy 2017 has the goals of health information management, district-level health system information database, federal integrated health information architecture, national health information network by 2025. In this regard, the Digital Information Security in Healthcare Act was drafted in 2017, to protect the patient's privacy and security of health data. In the future, it is expected to streamline the electronic health records of individuals with ease of access, by standardizing and controlling the overall data retrieving process and protecting users' rights. A federated Blockchain network integrated with the health

information exchange model could address the gap between the formation of law and regulations and implementing the law in practice. Under the National Health Mission, several schemes like:

Reproductive, Maternal, Newborn, Child and Adolescent Health program essentially looks to address the major causes of mortality among women and children as well as the delays in accessing and utilizing health care and services. It also introduces new initiatives like the use of Score Card to track health performance. Janani Shishu Suraksha Karyakaram is launched to motivate those that still prefer to deliver at their homes to choose institutional deliveries. Since the rate of deaths in the country because of communicable and non-communicable diseases is increasing at an alarming rate, the government has introduced various programs to aid people against these diseases. Mission Indradhanush is launched with the aim of improving coverage of immunization within the country. In order to address the huge burden of mental disorders and the shortage of qualified professionals in the field of mental health, the Government of India has implemented National Mental Health Program to make sure the supply and accessibility of minimum mental healthcare for beat the foreseeable future.

The Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) was announced with objectives of correcting regional imbalances within the availability of affordable/reliable tertiary healthcare services and also augmenting facilities for quality medical education in the country by setting up various institutions like AIIMS and upgrading government medical college institutions. Since there are huge income disparities, therefore, the government has launched several programs in order to support the financially backward class of the country. The most important program launched by the government is Rashtriya Arogya Nidhi which provides financial assistance to patients that are below the poverty line and are suffering from life-threatening diseases, to receive medical treatment at any government-run super specialty hospital/ institution.

Integrated Child Development Service was launched to improve the nutrition and health status of children in the age group of 0-6 years, for proper psychological, physical and social development, effective coordination and implementation of policy among the varied departments. Rashtriya Swasthya Bima Yojana is a government-run health insurance program to supply insurance coverage to the unrecognized sector workers belonging to the below poverty level and their relations shall be beneficiaries under this scheme.

It allows Government Departments to leverage Blockchain services to build, host, and use their own blockchain apps, smart contracts, and functions on the blockchain. It manages all the required tasks and activities to stay the infrastructure agile and operational.

### **Blockchain technology and Global Scenario**

According to the World Economic Forum anticipation, 10% of the global GDP will be stored on the Blockchain by 2025. When integrated with Electronic Health Records across all hospital networks, Blockchain will be able to provide instant access to the stakeholders anywhere, thereby reducing the time required to access patient's medical history and unnecessary costs involved in repeating medical procedures. Hospitals and related stakeholders will not be required to take a position in miscellaneous software and databases, thus leading to lower costs for all concerned stakeholders.

Security concerns are another benefit, which may even be resolved with the utilization of Blockchain. The record of transactions is distributed among different participating systems that act as nodes, across the whole network. The transactions are grouped into data blocks and are preserved via encryption which ends up during a unique signature referred to as a hash. The blocks are immutable. Any tampering of the records are going to be notified to all or any participating users. The Blockchain is in sync with the Personal Data Protection Act, a data protection act established in 2008, which protects Estonian's rights and trust with personal data.

Other nations that have already implemented their versions of privacy and data protection laws include the EU, which has the General Data Protection Regulation. Japan, which has the Act on the Protection of Personal Information, California which has the California Consumer Privacy Act, etc. The USA hasn't drafted singular nation-wide data protection regulations as robust as that of European Union's General Data Protection Regulation. High computing and processing power is required in block chain system to keep the exchanged information secured, which requires multiple servers across different geographies. Government and private players can work in a public-private partnership mode to overcome this deficiency which can help to accelerate Blockchain implementation across healthcare and other sectors as well. (Gupta, 2020)

### **Conclusion**

Blockchain is a centralization of data, sharing of data which cannot be modified or altered by anyone, storing of records and all type of information related to health can be added time to time. It helps in achieving transparency and efficiency in the health care system. The information can be stored at different levels. The transactions or information are packed in the form of blocks that undergo encryption. These blocks are stored in a sequential manner and thus form a chain of blocks.

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## Problems and Challenges of Mid-Day Meal Scheme in Primary Schools of Rajasthan

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Dr. Bhawna Hinger\*

### Introduction

Education enables younger-ones to discover their capabilities and skills which will guide them for a good life, and to live a good life in our society with respect. In absence of education it decreases the growth possibilities which can create a cruel phase that can led to insolvency and malnutrition. The Government of India made schooling compulsory for all kids from the age of 6-14, but underprivileged people fails to make complete use of their learning experience because of poverty. Starvation blocks the education which results that the kid has to quit the school and is forced to do domestic work. The Mid-Day Meal (MDM) is a scheme programmed to deal with two of India's most serious dilemmas: Hunger and Education. This "Mid-Day Meal (MDM) scheme" is the only full meal that many of our kids have access to for all day long. This has produced vivid results in terms of is the registration, attendance, and lack of awareness.

The Rajasthan government began supplying prepared meals to school kids under the Mid-Day Meal (MDM) Plan in July 2002. Originally, MDM was offered by the Rajasthan govt from its own government budget. The state government began billing a "cooking conversion fee" of Rs.00.50 for each student a day in July 2002. (for each meal). Ghooghri, Dalia, as well as other cuisine are served to students as prepared meals. "Mid-Day Meal Scheme (MDMS)" is applied & handled in Rajasthan by the Government as well as by Department Of education.

The "Mid-Day Meal Scheme (MDMS)" mission is in charge of ensuring the smooth operation & surveillance of MDMS in Rajasthan. All students from Class I to VIII in 66341 Public schools, Special Training Centres (STC), government of India (Gol) funded schools, & minority learning foundations (Madarsas & Maqtabs) are

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entitled to a mid-day meal (MDM). The current study is an attempt to review literature and relevance of published data revealing development as well as challenges of Rajasthan's Mid-Day Meal Scheme.

### **Review of Literature**

MDM is the ordinary minimal plan which was unofficially executed a century ago throughout the nation. The future of country relies on children with good health and who are bright. These kids face high danger of getting sick and early death and are very less likely to succeed in school. The Government of India has installed required MDM for all kids to get rid of illiteracy rates from the country. The starving and underprivileged kids had never gone to any educational institutions and are not capable to focus on their schooling. The central idea of MDM is to contribute in health together with learning which gives understanding of unfairness of beliefs, background and rank favoritism.

A large amount of studies has been performed to recognize the insights and issues confronted by using school teachers in enforcing this MDM schemes as under.

**Gangadharan, VA (2006)** found that the material services of "Mid-Day Meal (MDM) scheme" are only accessible in 50% of schools and about 94% of schools utilize cordwood for food preparation, and have another place for the cookhouse outwards the homeroom. It was unusual and declared that 50% of schools did not have adequate area.

**Gupta (2006), Samvad (2007), and Kumar (2008)** spent a good part of their instructors' classroom instruction trying to organise financial records & acquiring groceries after the execution of a warm cooked Mid-Day Meal (MDM) framework, that also exacerbated problems for students since their classes were obstructed.

**Chugh, S. (2007)** stated that the school's "Mid-Day Meal (MDM) scheme" accelerated financial strain on school mentors, and as a result, they won't receive their salary on time.

**Singh (2008)** got to know that the root causes associated with this plan were poor framework; diverse menus were required, bad food quality, and late payments.

**Parida (2010)** argued that the timing for studying in school is influenced because teachers were straightly caught up in procedure and management of "Mid-Day Meal(MDM) scheme".

**Bhargava & Bhargava (2011)** accounted that quality of food served to students was poor and also realized delay in edibles' supply.

- According to Hamid and Hamid (2012), the school experienced administrative & managerial difficulties since no staff members were viewable to facilitate the implementation of "Mid-Day Meal (MDM) scheme," & financial statements, receivables, & expenditures under the initiative were managed to maintain by teachers nearly every day.

**Uma (2013)** investigated that schools doesn't have a suitable kitchen to cook lunch and there was requirement of basic tools.

**According to Meena (2014)**, there is insufficient financial assistance to carry out this plan, as the food quality is poor as well as the disruption in classrooms has significantly affected both teachers' & students' curriculum and instruction.

**Saha (2015)** found that food served in schooled is not served in a clean place as homerooms are the only place remained to eat, as most schools cook their lunch with cordwood as fuel, in their balconies, and outdoors.

**Ramteke (2015) and Singh (2016)** discovered that the "Mid-Day Meal (MDM) scheme" accelerated teacher volume of work by obstructing teaching and learning practices that also significantly affected students.

### **Objectives of Study**

- Examine the execution and completion of Mid-day Meal scheme (MDM) as plan in primary-schools of Rajasthan.
- Recognize the concerns and dares to execute the "Mid-Day Meal (MDM) scheme" in primary schools of Rajasthan.

### **Research Methodology**

Literature examination has been carried out to bring together the secondary facts for the classification of dissimilar variables, possible modern concerns, and simplicity of concepts. The study is based on appraisal of diverse review reports on the development of Mid-Day Meal scheme in Primary schools of Rajasthan State. All the primary schools of government in Rajasthan state targeted the inhabitants for this study. The character of this study plan is exploratory. Up-to-date Data pages are offered by the concerned government divisions who have been exercising this model frame.

### **Facts and Analysis**

All primary schools under government and which is sponsored by government offers MDM every day in schools. The questions were asked from all children's parents or guardians whether their child get MDM every day. 90% of all questioned parents agreed that their children get MDM every day.

According to data updated on the government website, under the MDM scheme in Rajasthan, students in grades 1-5 are served a meal with 300 calories & 8-12 gm of protein every day in school. All children enrolled in government / government-sponsored primary schools are covered by the Education Guarantee System (EGS), which funds substitute and innovative teaching. A lunch which is prepared should have at least 100 grams of edible grains. In addition, the areas which have been confirmed barren areas by the state government will carry on continuing it throughout the summer break. The flavor and quality of prepared Mid-Day Meal (MDM) plays a vital job in student's utilization.

Aggregate volumes of schools & centers covered under “Mid-Day Meal Scheme (MDMS)” in Rajasthan are as under:

Govt. Including Local Body	Govt. Aided	STC Center	Madarsas	Total
64347	0	379	1615	66341

Students beneficiaries under Mid-day meal scheme In Rajasthan (As on 30<sup>th</sup> Sept. 2019)

#### Schools and Enrollments: (As on 30 September, 2019)

S.no.	Type of School	Class 1-5	Class 1-8	Class 6-8	Total	Enrollment
1	Government Schools	30381	33252	714	64347	6124841
2	Madarsa	1355	246	14	1615	116244
3	Specific Training Centers (STC)	32079	33534	728	379	26015
<b>Total</b>		32079	33534	728	66341	6267136

#### Status of Cook cum helpers as on 2021 in Rajasthan

Description of Cooks cum Helpers ( Yearly Work Plan 2020-21)						
Gender	SC	ST	OBC	Minority	Others	Total
Female	12083	19510	58606	3906	15817	109922
Male	1123	3604	4891	306	1611	11535
<b>Total</b>	12083	19510	58606	3906	15817	109922

Akshaya Patra is a charitable NGO which offers every day Mid-Day Meal to broods of no. 2,00,000 approximately who are seeking education from government and government-sponsored schools in Rajasthan. Since 2004, the NGO has been in service in state and at present they serve to 2,31,187kidswho are studying at 4,428 schools. These kids are served Mid-Day Meal which is prepared in 10 kitchens of Jaipur, Jodhpur, Nasdwara, Ajmer, Baran, Bhilwara, Jhalawar, Bikaner, Udaipur and Chittorgarh.

Rajasthan has 11 centralized kitchens controlled by NGOs. Hard work is in progress to engage more associations to function centralized kitchens situated in state that mainly cover city schools.

Centralized Kitchens Functioning in Rajasthan			
District	Organization	School Covered	Children Covered
Ajmer	Akshaya Patra foundation	108	17625
Alwar	QRG Foundation	402	55702
Jaipur	Akshaya Patra Foundation	1183	132644
	Annamrat Foundation	829	49929
Jodhpur	Akshaya Patra Foundation	131	13883
	Adamya Chetna Trust	261	33720
Rajsamand	Akshaya Patra Foundation	587	48678
Bhilwara	Akshaya Patra Foundation	82	12223
Jhalawar	Akshaya Patra Foundation	147	15410
Udaipur	Akshaya Patra Foundation	199	22112
Bikaner	Akshaya Patra Foundation	179	18800
Chittorgarh	Akshaya Patra Foundation	95	9300
<b>Total (11)</b>		<b>4203</b>	<b>430026</b>

Source: State Government Report on Mid-day Meal 2021



MDM schemes were put into practices in primary schools to raise the children's admissions and presence rates, maintenance of schools, and better-quality of education. As evidence by the report of "Cuts Jaipur", it is revealed that about 72% of questioned parents observed a raise in average every day presence of children and 72% agreed that the quality of education to get better. They agreed that it is all because of MDM scheme. Subsequently, by getting information over the past 3 years from school mentors and their individual views, it is obvious that 64% of schools have proved improved registration and maintenance of kids, while 11% of schools don't have any data or figures to show their development, meanwhile, 25% of schools didn't observe any major progress towards the development.

According to the Govt. of Rajasthan's Annual Work Plan & Budget 2021-22, chief goals of "Mid-Day Meal (MDM) scheme" was to boost admissions of girls who are chiefly belongs from underprivileged sectors. Till now, girls are the largely abandoned group of society who belongs from backward regions of state. Due to this reason, teachers were requested to offer facts and figures to enhance the admissions of girls. Investigation of data showed that generally, admissions got improved by 64% in schools, whereas female admission got improved in only 58% of schools. This was a motivational situation, but additional awareness is required to this significant feature.

Within guidelines of MDM scheme, it is declared that the learning and development process should not be affected by MDM and that students must not be caught up in any activities of MDM. An NGO study came to know that 31% of kids helped majorly in their practices of preparing, organizing and carrying the firewood, collecting water, cleaning up the grains, flour mixing, and cleaning food cutlery. Such actions put a negative effect on student's learning

A lot of researches are carried out to know the insights and troubles which school mentors encountered while executing this "Mid-Day Meal (MDM) scheme"s. According to Hamid & Hamid (2012), the school is enduring managerial & channeling issues since other laborers really aren't accessible to monitor and control the successful implementation of the Mid-Day Meal (MDM) framework and indeed the teachers are simply keeping the routine financial records, invoices, & related expenses to the scheme. Ramteke (2015) & Singh (2016) revealed that the Mid-Day Meal (MDM) plan put a massive strain on school teachers, complicating their classes & learning procedures.

**Uma (2013)** examined that schools do not have a suitable kitchen to prepare food and requirement of basic tools. Meena (2014) accounted that the financial support is insufficient to execute this plan which effected students in many ways such as bad-quality food and disturbance in lessons and learning. Saha (2015) utilization of cordwood as fuel in nearly all schools for preparing food, and the food is served to students in school balconies, fields and classrooms, resulting that the food is being served in a unhygienic environment.

Numerous researchers emphasized that there are difficulties in organizing “Mid-Day Meal (MDM) schemes” across India, such as food wasted by students, late payments due to insufficient funding, increasing the burden on teachers, acquiring dried food from market shops, need of storage space, preparing food, and condition of food, need of security actions, unsanitary surroundings, and so on.

### **Findings and Conclusion**

- Nearly all the findings till the present time, explains that overall execution of MDM scheme in Chittorgarh district is excellent and has had several effects on primary schools' students' admission, maintenance and attendance was increased. In some amount the value of learning, nourishment and health also got better. Though, the school still needs architecture such as kitchens, storerooms, toilets and sufficient homerooms. Proper drinking and normal water supply services are also not available in a lot of schools which is also required.
- Numerous private foundations / NGOs / associations such as Annapurna Samities, Nandi Foundation, Akshya Patra, Sanwalia Trust, etc., now came forward and are all prepared to offer MDM to school kids in a number of districts of state, but their contribution is somewhat restricted. They are restricted to the area and they covered very few schools.
- GoI and GoR have taken the lead in increasing the basic amenities and providing more financial support under MDM scheme. However, it is required to execute this scheme with responsibility and correctly.
- School professors ought not to be involved in almost any facet of the "Mid-Day Meal (MDM) scheme," from acquiring to flavors; however, a separate employee should be delegated to Mid-Day Meal (MDM) at the cluster juncture for record-keeping & purchasing mechanism.
- Providing Mid-Day Meal (MDM) should be significantly controlled by NGOs / SHGs. This will free the teachers who are engaged in extra works. This will allow teachers to concentrate on the lessons and learning procedure of students of school.
- There is an urgent need to make timely money transfer to school & edible grains for “Mid-Day Meal (MDM) scheme” in more efficient way to flourish further.

In a number of studies, it's been mentioned by school tutors that they have gone through a lots of troubles, counting increased work burdens, disturbance in teaching procedure, need of financial support, receiving their salary late, and requirement of infrastructure and other workers. School teachers also conveyed concern about the quality of food hence the need for a clean and hygienic surrounding

wherein the food is served to the kids. The potential ramifications & outcomes of the research demonstrated that a good framework will facilitate state-level strategy producers & managers in taking the initiative to begin intervening in order to conquer the difficulties and successfully putting this into practice of "Mid-Day Meal (MDM) schemes" so that it can be done, to actually accomplish its core purpose for which it was decided to start.

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## The Importance of Emotional Intelligence in 21<sup>st</sup> Century Teacher Training

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### Introduction

The future of a nation lies in the proper education of its youth, in preparing children to be better human being in society. Proper education is not only the education which is imparted in the four walls of classroom through various school subjects and it cannot take place in isolation from emotions of the child. Emotional Intelligence is the need of the hour. Our 21<sup>st</sup> Century teacher educators requires to be emotionally intelligent as to fulfill child's need to perceive, understand, facilitate, manage and regulate their emotions effectively to be a better self. Teachers play the fundamental role in character development among his or her students by inculcating self discipline and empathy. The teachers can impart such basic skills among children when they are actually practicing these skills themselves. For putting this to practice, teachers are required to have proper training to become emotionally intelligent. Teacher Educators should be aware about the importance of emotional intelligence. Teacher Training is required to make our future educators capable and effective while dealing with students. The emotional intelligence helps building a sense of self awareness among teachers so that they can understand their own emotions and of others too. It facilitates teaching professionals to be able to identify their emotions appropriately, to know their strengths and weaknesses and to facilitate self confidence. The 21<sup>st</sup> Century teacher educators requires to act as the adaptor, an effective communicator, learner centered, flexible in their approach, a good role model, collaborator, visionary, risk taker, innovative, empathetic and a good leader

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and emotional intelligence plays a great role in facilitating and developing these skills among teachers. A proper understanding of emotional intelligence during the training phase of teacher can lead to effective emotionally intelligent teacher educators.

### **Meaning of Emotional Intelligence**

The term “Emotional Intelligence” was coined by two researchers, Peter Salovey and John Mayer in their article “Emotional Intelligence” in the journal *“Imagination, Cognition and personality”* in 1990. The term later got popularized by Daniel Goleman in his book “Emotional Intelligence” in 1995.

The term Emotional Intelligence was not formally defined until two articles were published in 1990. The first article defined Emotional Intelligence as “the ability to monitor one’s own and other feelings and emotions, to discriminate among them and to use the information to guide one’s thinking and action.” (Salovey & Mayer, 1990,p-189). The second article presented an empirical demonstration of how Emotional Intelligence could be tested as a mental ability (Mayer, DiPaolo, & Salovey, 1990). Emotion plays a major in our decision making and self-management. As we all know from experience, when it comes to shaping our decisions and our actions, feelings counts every bits as much-and often more-than thought. Intelligence can come to nothing when the emotions hold sway. Emotional Intelligence is defined as the ability to recognize, understand and manage our own emotions as well as understanding and influencing the emotions of others. It refers to the capability of a person to manage and control his or her emotions and possess the ability to control the emotions of others as well.

The five major components of Emotional Intelligence are self-awareness, Empathy, Motivation, self-regulation and social skills. All these components are interrelated to each other making an individual emotionally intelligent. During teacher training all the key components play a major role in preparing the future teachers by providing them training regarding being self-aware about their own emotions and students, empathetic towards students and being self-motivated so as to provide effective teaching, regulations one’s own emotions and others as well and developing social skills so as to have better social interaction.

### **Definition of Emotional Intelligence**

According to Peter Salovey and John D.Mayer, “Emotional Intelligence is the subset of social intelligence that involves the ability to monitor one’s own and others’ feeling and emotions, to discriminate among them and to use this information to guide one’s thinking and actions.” (1990)

According to Daniel Goleman, “Emotional Intelligence is the capacity for recognizing our own feelings and those of others, for motivating ourselves, for managing emotions well in ourselves and in our relationships.” (Goleman, 1995)

### **Meaning of Teacher Training**

The term 'Training' is specifically defined in the *Glossary of training terms* published in 1971 in London by the Department of Employment. In this *Glossary training* has been defined as "Systematic development of attitude, knowledge, skill, behaviour patterns required by an individual in order to perform adequately a given job or task.". Training is specific in nature. Training is essential for every teacher as to become efficient in their teaching profession. To have mastery in content teaching and to communicate it well to students are two different things. Many skills are needed to communicate the information effectively e.g., skill of presentation, skill of questioning, skill of illustrating, demonstration and explaining etc. are required for effective teaching learning process. Teaching is not just confined to deliver the subject matter well in class but to develop overall personality of the students that can only happen when teachers are themselves trained regarding such skills. Mere knowledge of these things are not needed rather a person needs a positive attitude towards students and his job. Attitudes are learnt through experiences. In training programmes many such experiences are provided to student teachers by which they can develop favourable attitude towards himself, his job and his students. The skills requires a lot of practice. Many specific skills have been identified which are to developed in teacher trainees which can be developed by systematic programme of teacher training. The 21<sup>st</sup> Century teacher training programme requires to develop emotional intelligence so that the future educators can have skill of empathy, leadership, effective relationship management, social skills etc.

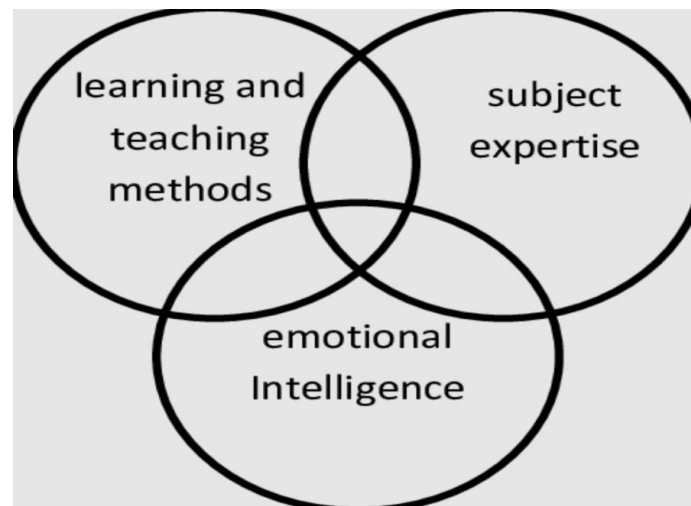
### **Definition of Teacher Training**

According to National Council for Teacher Education, "A programme of education, research and training of persons to teach from pre-primary to higher education level."

### **Role of Emotional Intelligence in Teacher Training**

Emotional Intelligence plays a pivotal role in educational field and in teaching. It helps teachers to understand their students in an effective way. During teacher training, student teachers learn to make pedagogical strategies which can be helpful while teaching learning process. While planning such pedagogical strategies, emotional intelligence plays an important role. In emotional intelligence, Empathy is the main idea or concept for teaching and it significantly help teachers to communicate with students to understand the socio-cultural background of the students. During teaching-learning of different subjects, social skills and motivation are much needed by teachers which are important components of emotional intelligence to have better interpersonal relationship with students during teaching learning process. Emotional Intelligence can help students and teachers to enhance their individual achievements to bring improvement in personal life skills and social

skills. The educational institutions which give training and conduct seminars for developing emotional intelligence in teachers produce happier more experienced and matured students for professional life (Brockbank & McGill,2007).



**Figure showing relationship between Emotional Intelligence of teachers, learning and teaching methods and subject expertise (Mortiboys,2011:2)**

For achievement of students, teachers need to use their emotional intelligence in classroom for which effective teacher training is required. One of the most important component the teachers bring in the classroom is emotional intelligence. To realize the knowledge, learning, subject matter and teaching pedagogy, teachers must use emotional intelligence in their teaching. Otherwise value of things will be reduced (Mortiboys, 2005)

### **Teacher Emotional Training**

The basic purpose of education is holistic development of the students. Emotional Intelligence develops self-awareness to identify, perceive, understand and ability to control and ability to check emotions. Emotional intelligence can increase its power with passage of time, while others claim that it is an innate quality (Skinner & Belmont,1993). In order to produce effective and emotionally intelligent teachers, an effective and proper teacher training is required. During teacher training programme, the teachers need to be exposed to emotional development program. Teachers must be emotionally mature to handle emotional needs of the students. The teaching training programs will help teachers to become emotionally intelligent with the components of self-awareness, self-control, motivation, empathy and social skills (Singh, 2015).

Emotional Intelligence is one of the basic skills which needs to be inculcated among student teachers to as to have better teacher –student relationship and effective teaching learning process.



### **Conclusion**

The teacher training institutes needs to offers courses, sessions and workshops related to emotional intelligence. Student teachers must be engaged in activities through which they can develop skills related to emotional intelligence. Emotional Intelligence is the need of the hour and needs to be addressed as it is needed for 21<sup>st</sup> century teacher education.

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## **Extension of Infrastructural Facilities by the ULB of Nabadwip in Nadia, WB, towards its Slum-Population: A Geo-Environmental Appraisal through RS-GIS Techniques**

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Dr. Ayan Das Gupta\*

### **Introduction**

Nabadwip Municipality is situated at Nadia district in West Bengal on the western bank of the Bhagirathi River. The Bhagirathi River originally used to flow at the western part of Nabadwip, forming a boundary between the districts of Bardhaman and Nadia. It has now shifted its course, cutting the city off from the rest of the Nadia district. Nabadwip Municipality extends from 23° 25' N to 23° 42' N latitude and 88° E to 88° 22' E longitude. Nabadwip is the sub-district headquarter of the city. District head quarter of the city is Krishnanagar which is 22 km away. Kolkata is the state head quarter of the city and is 120 km far from here. The Nabadwip Metropolitan Area covers the following residential units namely

- Bablari Dewanganj
- Char Brahmanagar
- Char Majdia
- Gadigachha
- Majdia
- Nabadwip and
- Tiorkhali

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### **Idea of Slums**

The most important identifying feature of the urban areas of the world is the presence of slums. A slum is an arena of poor housing, often characterized by multi-occupancies and over-crowding. Schools are poor, items sold in local shops are relatively of inferior quality, and sanitation stands also as inadequate in relation to the total demand by the urbanites. Slum population often exhibits high concentration of drug abusers, alcoholic population, criminals and vandals. Urban slums or squatters are a universal phenomenon. They are the products of urban explosion which has accompanied industrialization. The growth of slums, especially in the developing countries has caused physical and social stress to the urban environment.

### **Definition of Slums**

According to the UNESCO report (1952), a slum is considered as an area characterized by overcrowding, deterioration in sanitary conditions or absence of facilities or amenities which may ultimately endanger the health, safety or morals of its inhabitants. There is no general agreement on the definitions of slum yet. Some writers regard slum as a special type of disorganized area. Burgle (1955) and Anderson (1959) described slums as areas of the city where housing is substandard, deteriorated and degenerated. The second set of definitions consider the slum dwellers to have a marginalized lifestyle having a sub-culture of their own which prevents their integration with the rest of urban society.

Amongst 4673 towns in India slums are present in about 607 towns. Among them the highest percentage of slum population (according to 2021, provisional population total, census of India) is in greater Mumbai (48.88%). Kolkata is having one third of its total population i.e. 32.55% living in slums and ranks second in national scaling. Other major million plus cities of India having slum population are Delhi (18.89%), Chennai (17.74%) and Hyderabad (17.43%). In India, slums are created when squatters illegally occupy land, either on the edge of built up area or in the interstices of existing panorama, as alongside rail way lines, roads, and public land.

The main characteristics of the Indian slums are as follows:

- They generally develop over the government land and usually they are registered residential units.
- The houses in slums are built with mud or bricks with thatched roofs or roofs covered by tins, bamboo mats etc.
- There is poor sanitation and public latrines. Many people, especially children, defecate anywhere in the slum area.
- There is low sex ratio for females in the slum areas and generally abortion-rates are high in the slums.
- The slum dwellers belong to the lower income group as a result of which they mainly belong to the group of Urban Paupers.

- The slums lack in basic infrastructure such as electricity, running water and sewage and systematic garbage removal system.

### **Problems of the Study-area**

Nabadwip Municipality is one of those Municipalities in West Bengal as well as India which faces the problems of urban as well as holistic regional development. The major problems of the study area are the occurrence of slum-infested micro urban units with lots of urban pathological syndromes. Focus has been thrown on the ward number 4, 5 and 6 within Nabadwip (M) and their overall problems are as follows:-

- The slum area of Nabadwip Municipality suffers from uncertainty of monsoon rainfall which hinders the agro-based industrial as well as economic development.
- The area faces the problem of pure drinking water and there 90% households depend on public water sources.
- There is no proper sanitation- system available to the urban paupers of the spatial units over there.
- Educational status is not up to the mark and this is responsible for enhancing the share of unemployment rate and occurrence of marginal labourers.
- Sewage condition is not well-developed in the study area.
- A major portion of people do not get proper medical facility at th time of medical emergency, as a result the Municipality suffers from manifold health, hygiene and nutrition related dearth throughout th year.

### **Justification of Selection of the Study-Area**

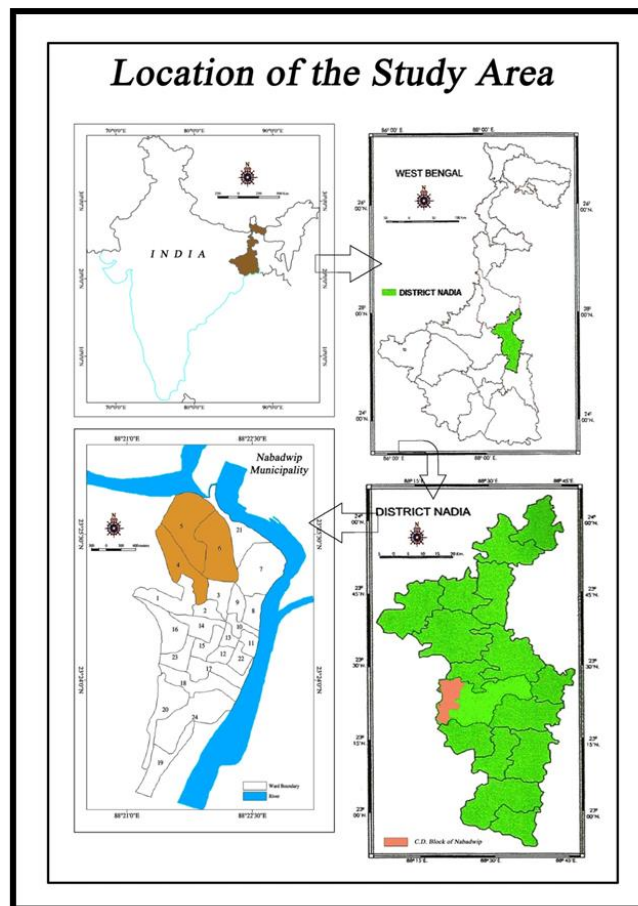
For the present study, part of Nabadwip municipality has been selected. The study area that is Nabadwip municipality is very akin to Bardhaman district. The 2011 census says that Nabadwip Urban Agglomeration has a population of 175,474, out of which 90,810 are males and 84,664 are females. Total geographical area of Nabadwip municipality is 11.7 km<sup>2</sup> and it is the 3rd smallest city by area in the total district. Population density of the city is 10767 persons per km<sup>2</sup>. There are 24 wards in the city. The study area has been chosen due to miscellaneous reasons. Nabadwip was the capital in Sen Period during this pre-colonial and colonial time. Nabadwip has become the centre of education and religious culture. For this reason, Nabadwip is called as the oxford of Bengal still today. Nabadwip had to bear the brunt of the partition of India with a large chunk of refugee population settling in the Municipality and in its surrounding area, to avail the benefits of a Municipality or Urban Local Body. Nabadwip is continuing to struggle with urban problems like poverty, population explosion, traffic congestions, etc. and so many positive steps have been and are being adopted to alleviate these problems by the Municipality.

### Front Gate of the Administrative Building of Nabadwip Municipality



Photo 1

### Objectives



The present study is based up on the following aims or objectives:

- To review the characteristics of slum population in Nabadwip municipality.

- To search for the reasons behind the heterogeneous type of development patterns in different micro urban units of this particular urban local body with special reference to its slum infested arenas.
- To know about the physical as well as non-physical infrastructural facilities of the slums-infested domains within Nabadwip (M).
- To identify the water-logged areas over here and at the same time to investigate the solution strategies to this particular problem.

**Data Source**

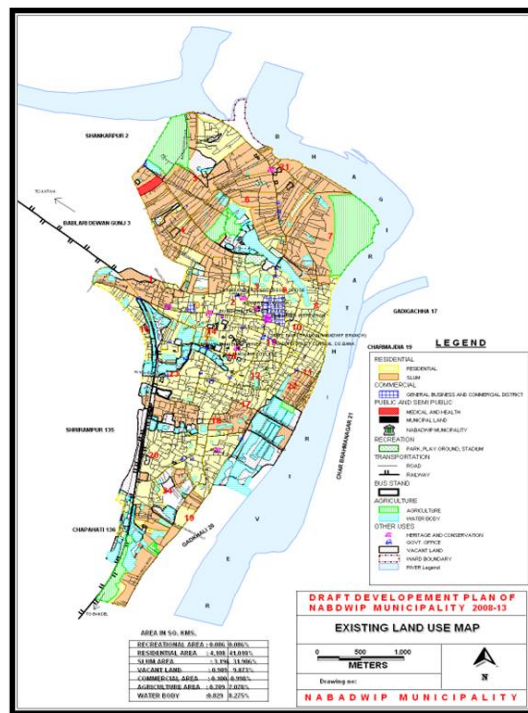
Both primary and secondary data were collected to lay the foundation for this analytical study. Detailed households survey through structured questionnaire has been done to collect primary data. Census data and municipal records have been utilized as secondary data source.

**Methodology**

To complete this field-based project report, the researcher has adopted various quantitative and qualitative techniques. The entire process has been accomplished through three different stages.

- **Pre-field:** It was the period during which the basic information on Nabadwip Municipality had been collected from the website and the Nabadwip Municipality Office.

**Landuse Map of Nabadwip Municipality**



- **Feld-Stage:** Several types of primary data have been gathered by the researcher in this particular stage depending on door to door survey in the ward No.s 4,5 and 6 of Nabadwip Municipality. Especially the socio-economic statuses of slum population in these selected wards have been investigated in this definite stage.
- **Post-Field:** The last and the final stage during which the field report was made by the researcher encompassed the analyses of data and information by using the TNT Mips software; Corel draw Designing software and Microsoft office excel 2007 etc.

### **Regional Identities of the Study Area**

Nabadwip (also Navadwip, Navadvipa or Nabadwipdham) is a city and a municipality in Nadia district in the Indian state of West Bengal. Its name means "9 islands" in the Bengali language. The islands are named Antardwip (Sri Mayapur), Simantadwip, Rudradwip, Madhyadwip, Godrumdwip, Ritudwip, Jahnudwip, Modadrumdwip, and Koladwip. It is a place of many lilas (or "pastimes of God" in Hinduism) of Sri Caitanya Mahaprabhu. Many pilgrims from origins worldwide adhering to Gaudiya Vaishnavism come to Navadwip every year on pilgrimage and for festivals like Sri Navadvipa-mandala Parikrama and holidays like Gaura Purnima. Nabadwip was the capital of Lakshman Sen, the famous ruler of Sena kingdom, who ruled from 1179 to 1206. In 1202, Nabadwip was conquered by Bakhtiyar Khilji. This victory paved the way for initiation of concrete Muslim rule in Bengal. Nabadwip and Nadia were great centers of learning and intellectual pride. For five centuries, it was referred to as 'Oxford of Bengal' in local literatures. Chaitanya Deb (1486-1533) was born and spent many years at Nabadwip. The Holy Birth Place of "Sri Chaitanyadeb" is known as "Gour Gangar Desh". People are proud for Srichaitanyadeb, Krishnanda Agambagish, Basudeb Sarbobhouma etc. The religious atmosphere of Nabadwip is a combination of Baishnaba, Shakta, Buddha, Saiba due to the aforesaid leaders, Pal Monarchy, Sen Monarchy etc. The main festival of Nabadwip is "Rash Utsab". It is also known as "Pat Purnima" or "Rash Kali Puja" or "Shakta Rash". The religious atmosphere of Nabadwip is a combination of Baishnaba, Shakta, Buddha, and Saiba due to the presence of aforesaid leaders, Pal Monarchy, Sen Monarchy and so on and so forth. The Rash Utsab is like national festival of the inhabitants of Nabadwip. Nabadwip is now directly connected by bus and train with Krishnanagar through the Gouranga Bridge on the river Ganges. In the 11th and 12th century, Nabadwip was the capital of Banga. It was famous for education in Sanskrit language. There are numerous temples (186) of all sects like Vaishnavas, Shaktas and Shivaites in Nabadwip. Nabadwip becomes gay and festive at the time of full moon day in the Bengali month of Aগ্রহায়ান (November). People enjoy the festival of "Raas" with

dance, songs, tableau, lighting, colorful decoration etc. Thousands of outsiders flock to Nabadwip to enjoy the festival of Raas. The whole town can be visited by hiring a rickshaw. It is located at the confluence of Bhagirathi and Jalangi rivers. The Bhagirathi has shifted its course several times. Earlier, Nabadwip was on its east bank with the rest of Nadia district but now it is on its west bank. There also is a dispute regarding Sri Chaitnaya's birthplace.

As of 2011 India census, Nabadwip had a population of 115,036 and occupying 11.66 square kilometers of geographic boundary. Males constitute 51% of the population and females do 49%. Nabadwip has an average literacy rate of 75%, higher than the national average of 59.5%. Here the male literacy is 80% and female literacy is 70%. In Nabadwip, 9% of the population is under 6 years of age. The population is distributed over 24 municipal wards. Nabadwipdham is 65 km away from Bandel in the Bandel-Katwa section of Eastern Railway.

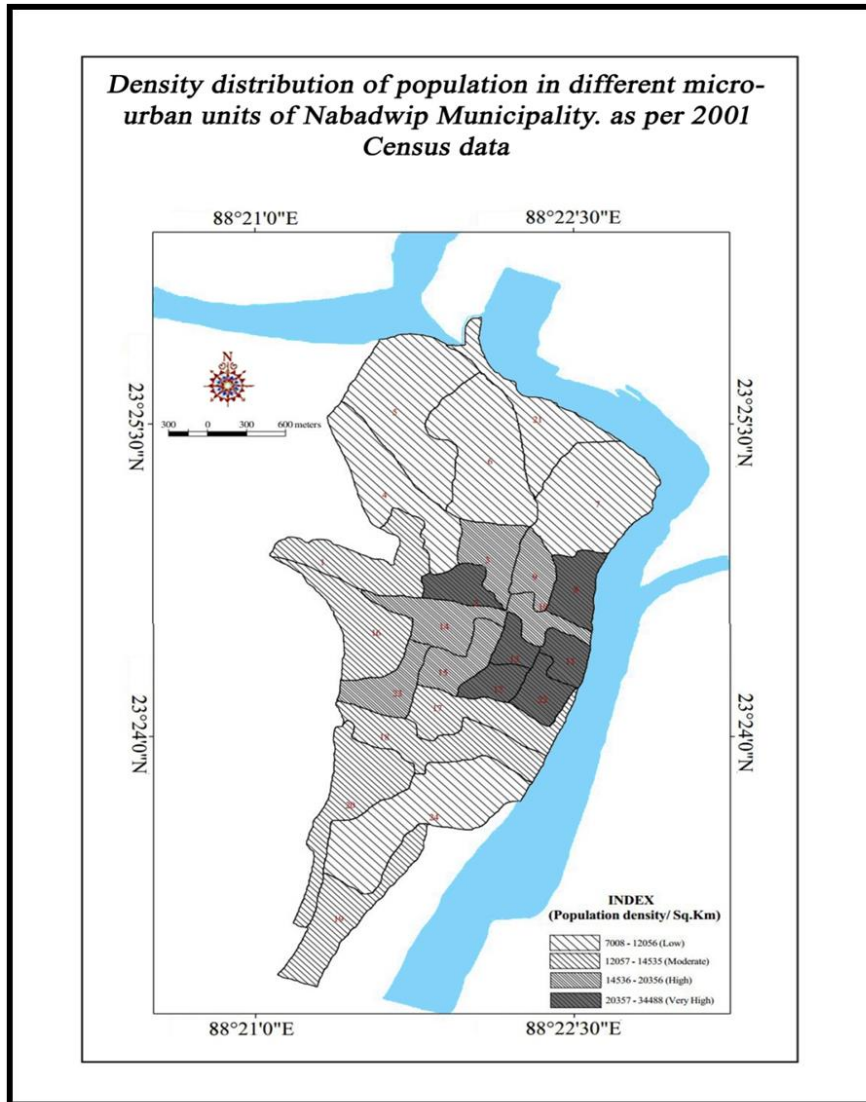
#### **Ward Numbers and respective names of the Major Slums in the Nabadwip Municipality**

<b>Serial No.s</b>	<b>Names of the slums</b>	<b>Ward no</b>
1	Gour nagar bastee	4
2	Aurovindya pally	5
3	Bhuban Saha Lane, Addya Mandir Lane	6
4	1 No Nemainagar colony	7
5	Adyanagar colony, chaltanya colony	21
6	Puraschandra Math	22
7	Daccanagar Colony, Bhar para	24
8	Purascharan math Purba chara	11
9	2 no. Gouranga Colony	19
10	Saraswat pally	1
11	Ranir Chara Road Basti	8
12	Ambagan Kuthir Para	16
13	Ramkrishna Bibekananda Colony	18
14	Kalabagan	20

Source: Draft development plan, Nabadwip Municipality

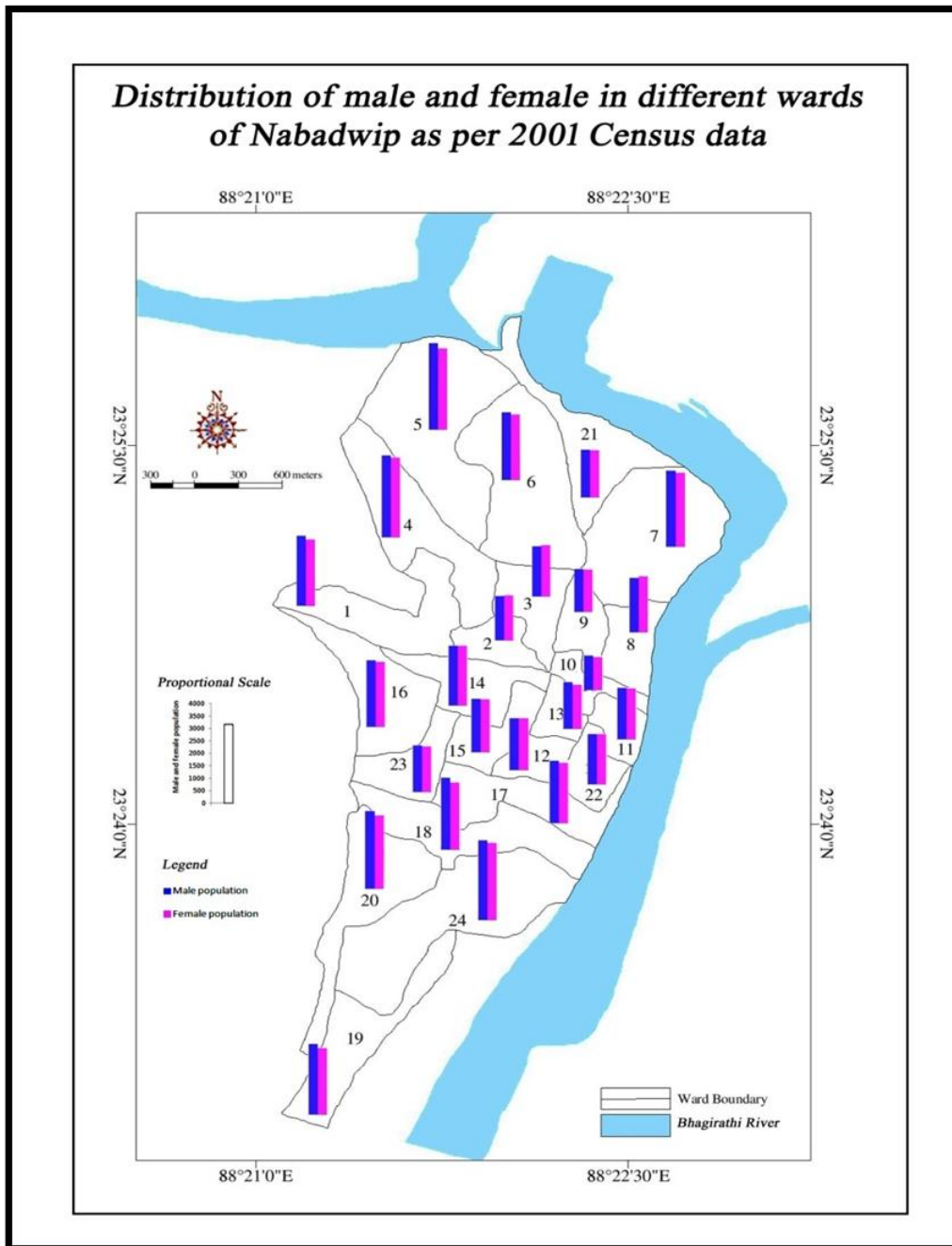


### Ward wise Population Density of Nabadwip Municipality, 2001

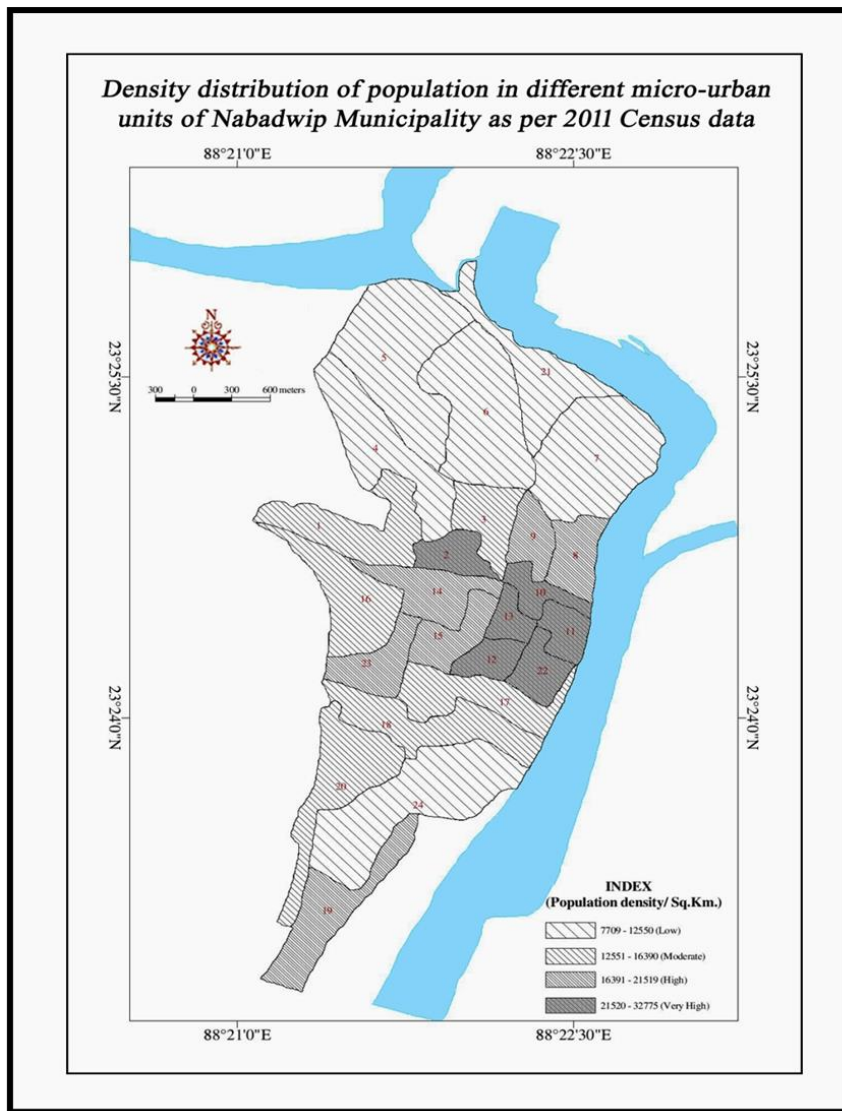


Source: Source- Census of India

- Ward-wise Population Density 2001:** Above diagram shows the ward wise population density of Nabadwip Municipality 2001. According to this diagram 4 density classes are obtained. Ward no 2,8,11,12,13 and 22 are included into very high density-classes (20357-34488 persons per square kilometres). High density class (20356-14536 persons per square kilometres) is found in ward no 3,9,10,14,15 and 23. Moderate density class (12057-14535prson/square kilometers ) is found in ward no 1,16,17,18 and 19. At last low density class (12056-7008) is found in ward no's 4,5,6,7,21 and 24.



- Ward-wise Population Density Map of Nabadwip Municipality 2011:** Above diagram shows the density of population for 2011. Very high density class is found in the central part of the Municipality. Lowest density shown in northern part of the Municipality and rest of the part are included into the moderate class-category.



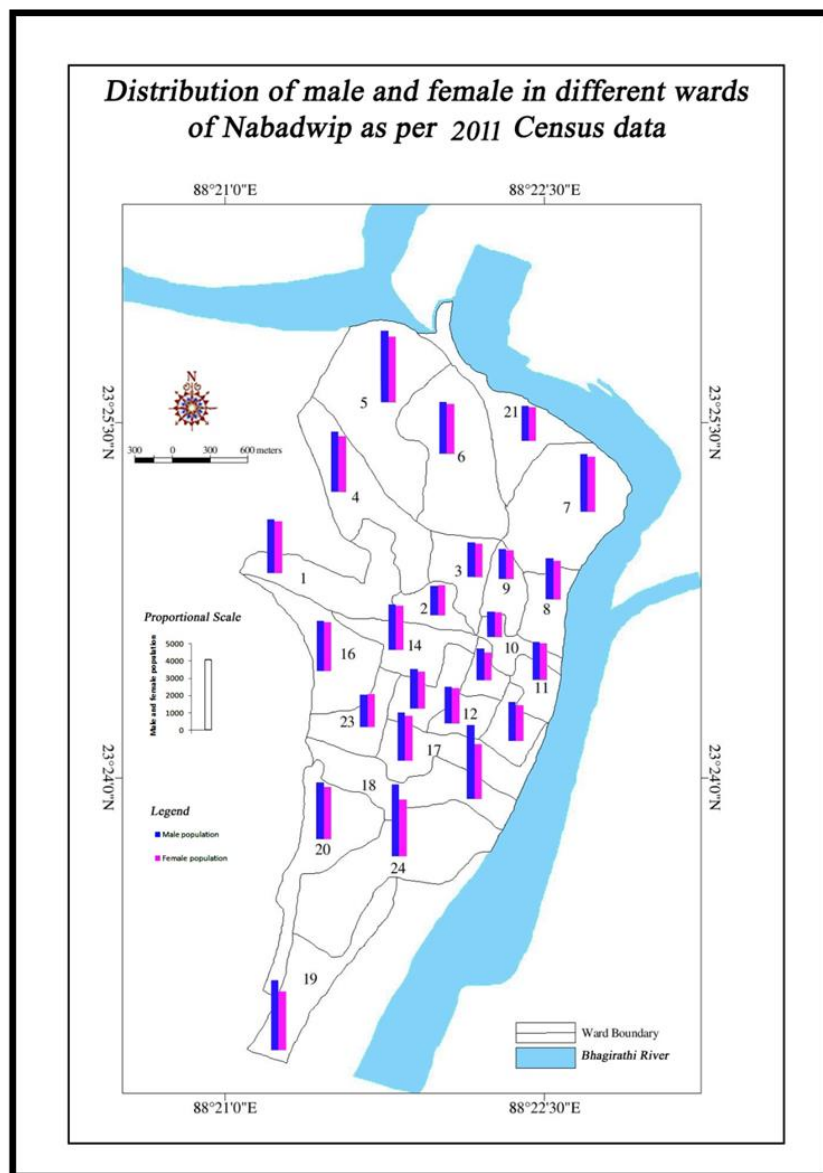
### Results and Discussions on Secondary Datasets

The Slum Infrastructure refers to prospects of planning for the 'in-slum' development in facility-utility services in the ULB. It aims at providing basic minimum services to the slum population. There are 103 slums in the Nabadwip municipality having 49321 populations as total as per the Census India 2001 and now the total population is 58275 having 9931 slum-dweller families. More than 42% of the population of Nabadwip is living in slums. The IHSDP has been covering 11 slums and 14 slums would be covered under the DDP. However, the infrastructural situations in these slums are inadequate to provide the people a minimum standard of life. In the slums, the populations have been dwelling are poor and having no access to the basic

Extension of Infrastructural Facilities by the ULB of Nabadwip in Nadia, WB, towards..... 83 amenities like water, drainage, all weather road communication, street light facilities, sanitation, better livelihood opportunities, livable housing facilities, health and treatment and protection from floods. The plan envisages extending all the facilities to all the slum dwellers.

The Slum Infrastructure sub-component of the Draft Development Plan essentially refers to the 'in-slum' infrastructure development in the ULB, including provision of linkages of the infrastructure within slums with the main city / municipal networks.

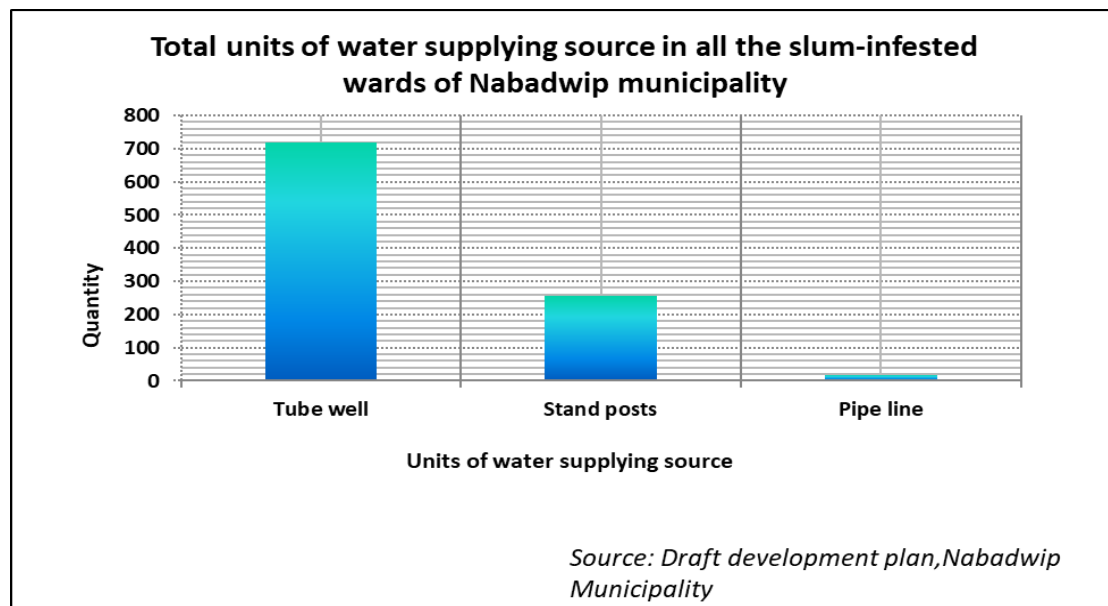
**Development Objectives for Slum Infrastructure Improvement Plan**



Development objectives set for the ULB for basic municipal services at ULB-wide scale are as follows:

- To provide basic infrastructure in all slums in order to improve the standard of living of the people and to provide good quality of drinking water to the slum people.
- To provide proper sanitation for households and also for the entire community.
- To provide housing infrastructure.
- To identify water-logged areas and solve the problem by providing proper drainage system.
- To provide basic health facilities e.g. Immunization etc. to all slum dwellers.
- To improve street light network along with road-lighting and placing of trash disposal bins at the roadside.
- To ensure community participation in construction, operation and maintenance to infrastructure by creating awareness among the slum dwellers.

### Water Supply



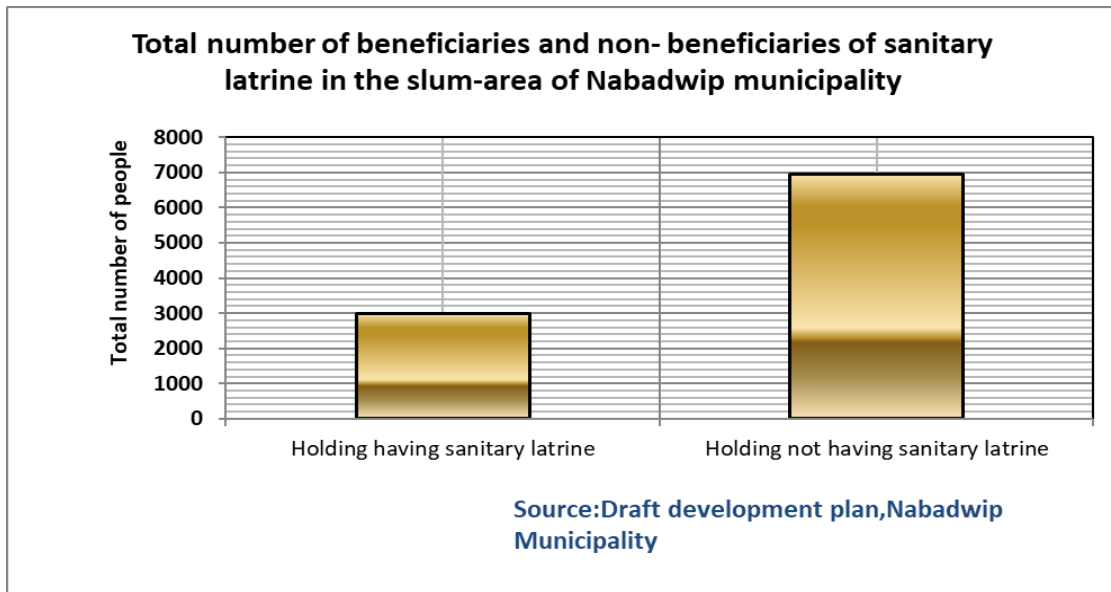
The existing water supply facilities in the slum pocket are inadequate. Although the slums have sufficient source of water in the form of either tube wells or existing municipal water sources, they lack a proper distribution system for efficient use of the water. In order to solve this problem, a network of distribution lines in some slum pockets have been proposed under IHSDP but still there is a gap in implementation. This will reduce their inconvenience for procurement of water from a distant place as well as it may improve their personal health and hygiene.

**Sanitation**

Proper sanitation- facilities are absent which not only endangers the individual health but also the environmental condition of the slum and consequently the town area is affected in general. The individual houses in the slum pockets are in generally temporary in procuring regular sanitation facilities by nature, without having a permanent solution to th same yet.

A large number of pour flush latrines have been constructed over the past few years in the houses of the slums through the central government aided ILCS programme. There are also 07 community toilets with bathing facilities within and around the slums. But still there is a need to look into the matter with utmost importance.

In the slums the sanitation condition is extremely poor especially in the core of Nabadwip municipality. 15% to 20% people today even defecate in the open fields. This is adversely affecting on the local atmosphere. In case of diseases of women during lactation period and any stomach infection like dysentery, diarrhea etc. people are to suffer a lot.



**Internal Passage and Approach Roads**

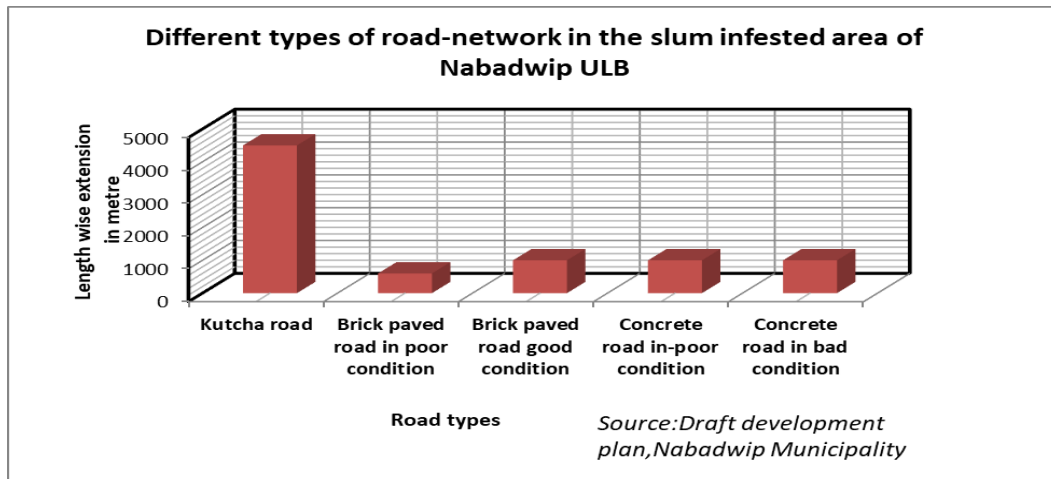
In the slums of Nabadwip paved access for pedestrians and vehicles is worse. There is congestion and in order to remove congestion there must be strong political will. Unless the congestion is removed the vehicular movement and movement of two wheelers and the pedestrian will be impossible. Besides repairing the existing metal roads further initiative need to be taken up to repair the earthen roads. They need to be converted into concrete roads immediately.



In Nabadwip, there are 4500 meters Kutcha Roads; Brick Paved Road - in poor condition is 600 meters; in good conditions are there the 1000 meters. Concrete road are in poor condition and it is about 1000 meters and in fully good condition there stands the total road length of 1000 meters. Therefore, there is total road length of 8100 meters in the 103 slums in Nabadwip municipality which need to be looked after by the urban local body for further improvisation. People have been using those roads for their daily communication.

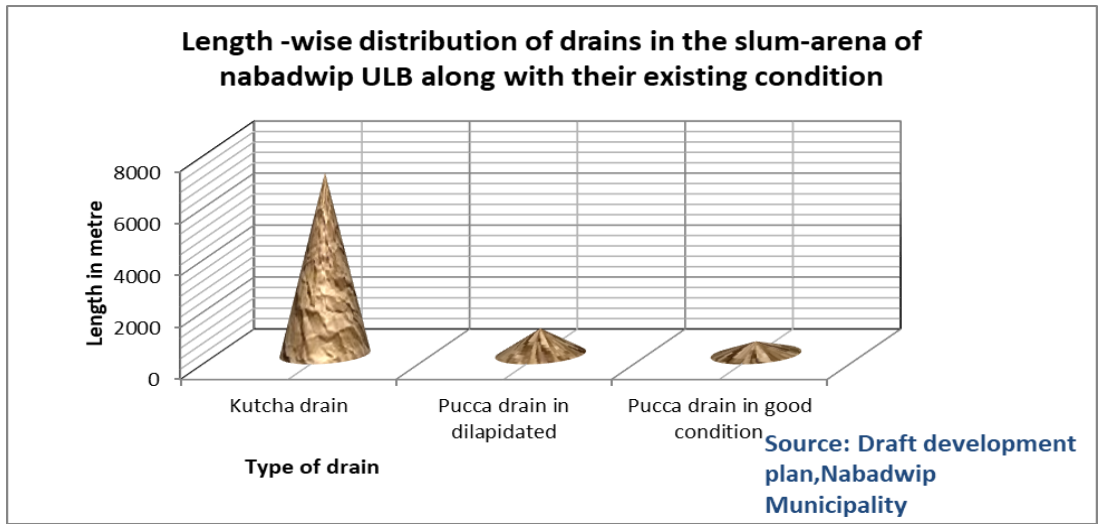


**Metalled Road in Nabadwip Municipality**

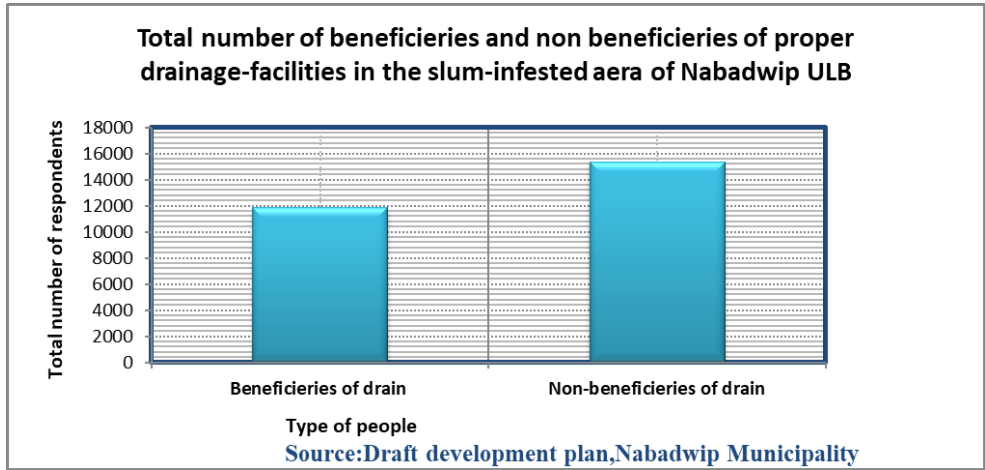


### Storm Water Drains

Nabadwip is a town surrounded by the river Ganges and other rivulets. Therefore, there are problems like water logging and storm water drainage is not in proper existence still now. People are to suffer during the monsoon in general but specifically the slum dwellers have been suffering a lot during the monsoon. Normal drain is also in worst conditions. There is 8500 meters of drains of which Kutcha drain is 7000 meters yet, pucca drains are in dilapidated conditions and is about 1000 meters. And pucca drains in good conditions are of 500 meters.



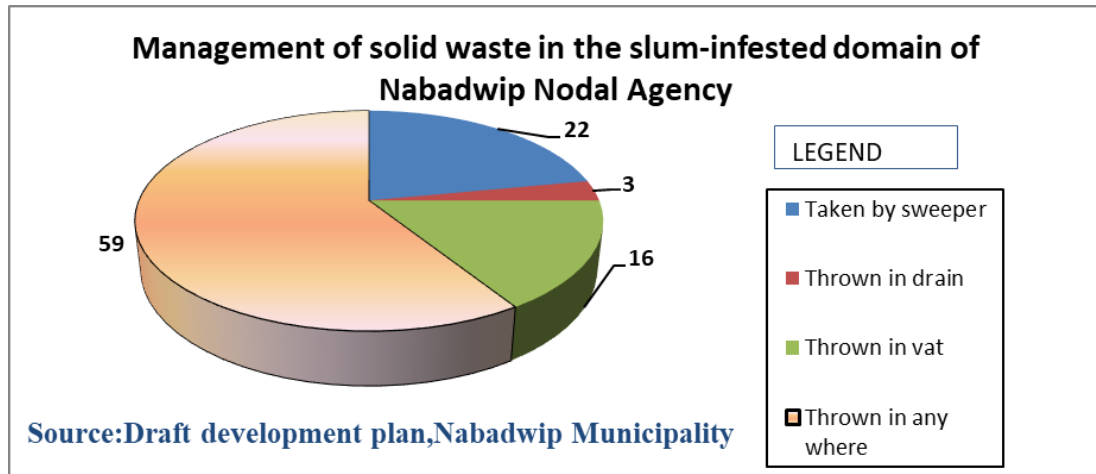
During the socio economic survey by the ULB, 27214 persons have interviewed and they have reported about the conditions of drainage. 11857 persons have reported that there are no drainage systems in the slum areas of Nabadwip and 15357 persons reported in affirmative corroborating that there is proper drainage system in the study arena.



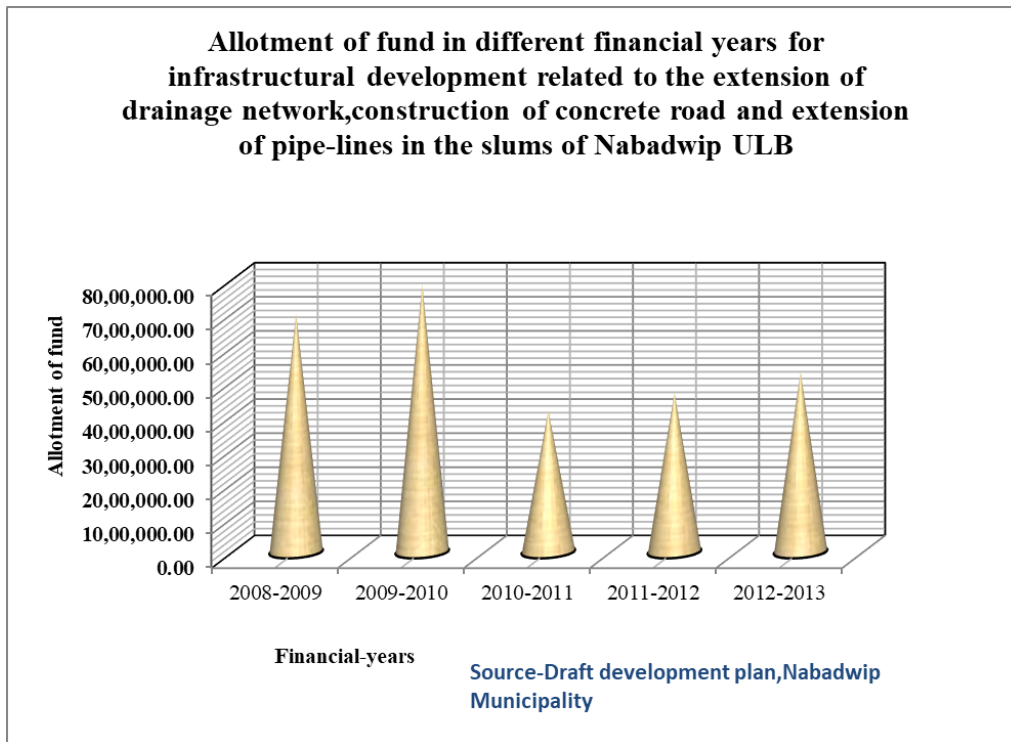
### Solid Waste Collection

Waste is not collected from door to door and there is no question of segregated collection. The following pie chart would give a vivid picture about the garbage collection and the condition of solid waste management. In the slums of Nabadwip the situation is much bad. The survey has shown that the SWM is managed in an improper manner. 15204, 59% citizens have expressed their opinion that the waste is thrown anywhere; 3945, 16% have opined that waste are kept in the vats; 760, 3% have opined that those are thrown into drains and 5723, 22% citizens have viewed that the waste are collected by the municipal personnel.

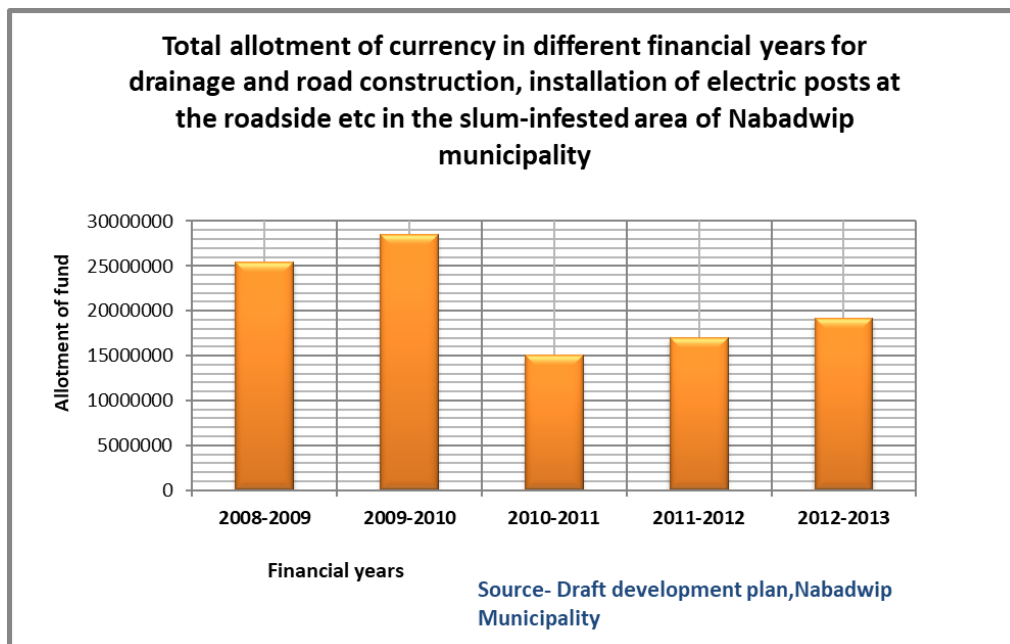
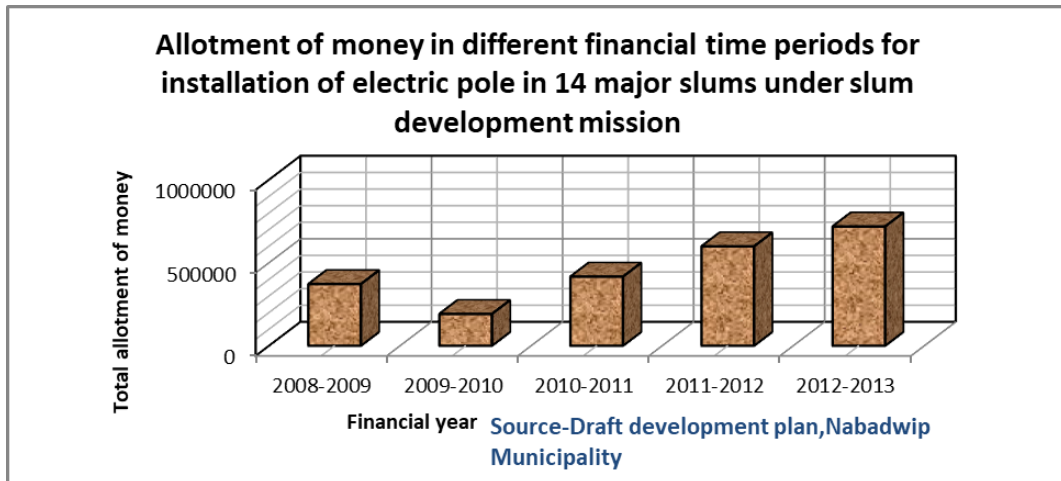




### Slum Infrastructural Improvement



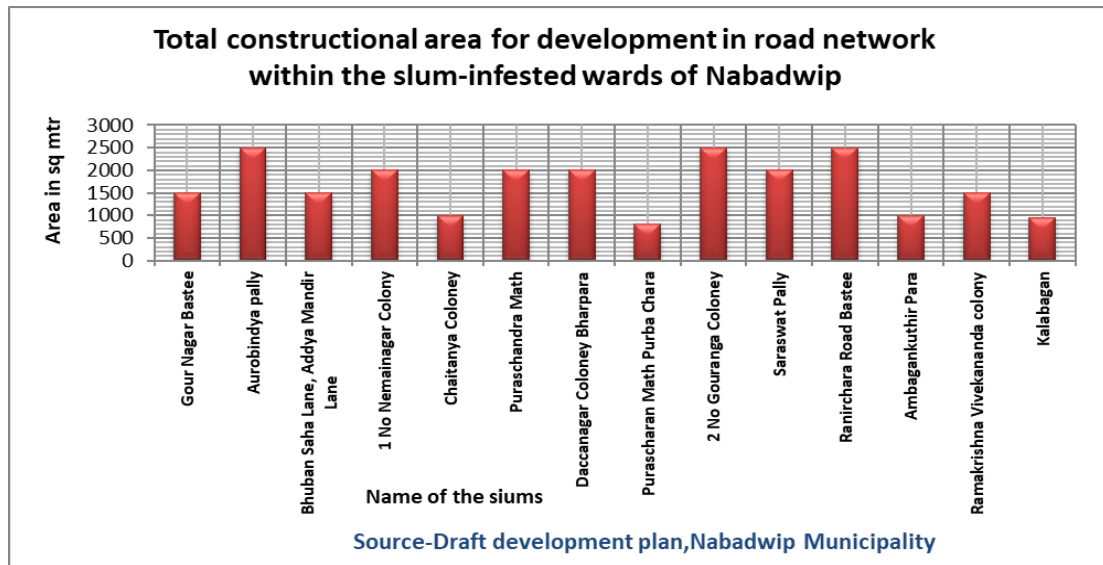
- Allotment of money for development related to drainage network, road and extension of pipe line:** For the infrastructure development in the 14 slums of Nabadwip Municipality allotment of fund in different financial year has been noteworthy. Municipality has taken a developmental plan for 5 years from 2008-2013. From the given statement of draft development plan, maximum allotment of fund in the year of 2009-2010, and minimum allotment of fund in the year of 2010-2011 have been reported.



- Allotment of Money for Installation of Electric Pole:** Within the 5 years developmental plan, Municipality allotted maximum money in the planning year 2012-2013. In this year Municipality has installed more electric pole than other planning years. Lowest allotment of fund shown in the year of 2009-2010 is clearly noticeable. From the diagram it is seen that the allotment of money in different time frames are increasing.
- Total Allotment of Currency in Different Financial Year:** For the 14 slums infrastructure development projects, Nabadwip Municipality has been allotted total highest currency in the year of 2009-2010. And lowest total allotment of currency is shown in the year of 2010-2011.



**Slum-housing or Jhopris at Nabadwip Municipality**

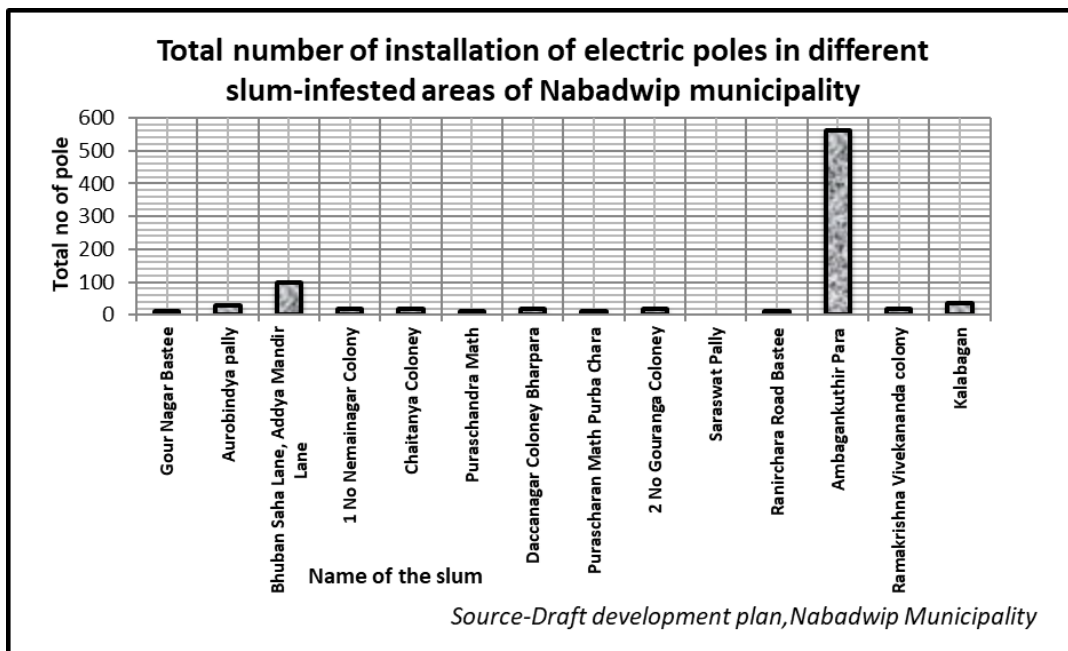


### **Total Constructional Area For Development In Road**

In The Slums of Nabadwip, Paved Access for Pedestrians and Vehicles not so satisfactory. There is Congestion and in order to remove congestion there must be Strong Political Will. Unless The Congestion is removed the vehicular movement and movement of two Wheelers and the Pedestrians' movement will stand impossible. Besides repairing the existing metal Roads separate initiative need to be taken up. The Earthen Roads need to be converted into Concrete Roads. Nabadwip Municipality has constructed roads In 14 Slums. Municipality has Built-up 2500 Meters Road as well. In the Aurobindo pally, 2 No Gouranga Colony and Ranir chara Road Bastee, the same initiative has been undertaken in worthy manner. Lowest length (800 meters) of road has been built in Purascharan math at Purba chara bastee.



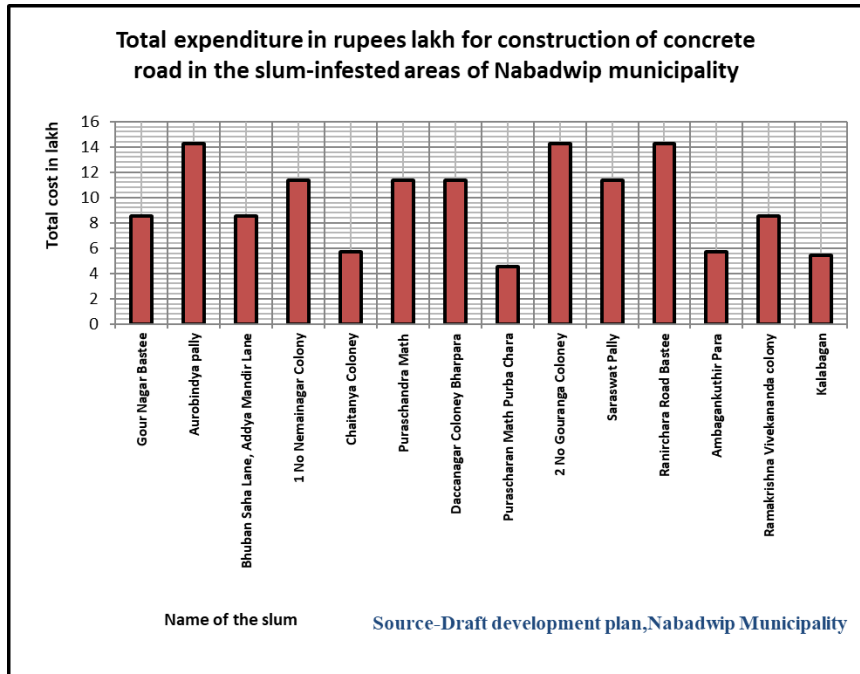
**Construction-works carried on in Slums of Nabadwip M**



- Total Number of Installation Electric Poles:** To provide electricity in every slum-infested house, the municipality has installed many electric poles. But Municipality has failed to provide sufficient electric poles in all slums areas. According to the draft development plan, highest numbers of electric poles have been installed in Ambagan Kuthir para bastee and rest of the slums area are with too low number of electric poles.

### Total Spending of Rupees in lakhs for Construction and Extension of Drainage Network

For construction and extension of drainage network in different slums, Nabadwip Municipality is spending huge currency. From the DDP it has been seen that for about 9 slums in the Municipality, the ULB spends above 5 lakhs rupees. And for the other 5 slums, Municipality has spent below 5 lakhs rupees.

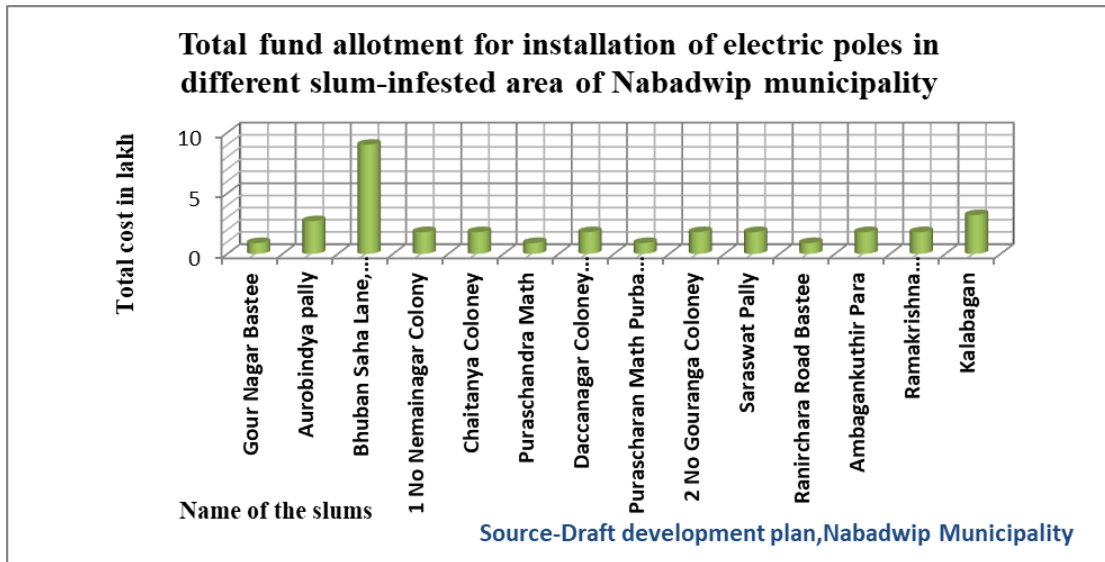


### Total Expenditure for Construction of Concrete Road

Nabadwip Municipality's expenditure in rupees for construction of concrete roads in 14 slums has been furnished with proper datasets in the Draft Development Plan. Most expenditure in rupees in lakh has been spent for construction of concrete road in Aurobindyapally, 2 no Gouranga colony and Ranir chara road bastee.

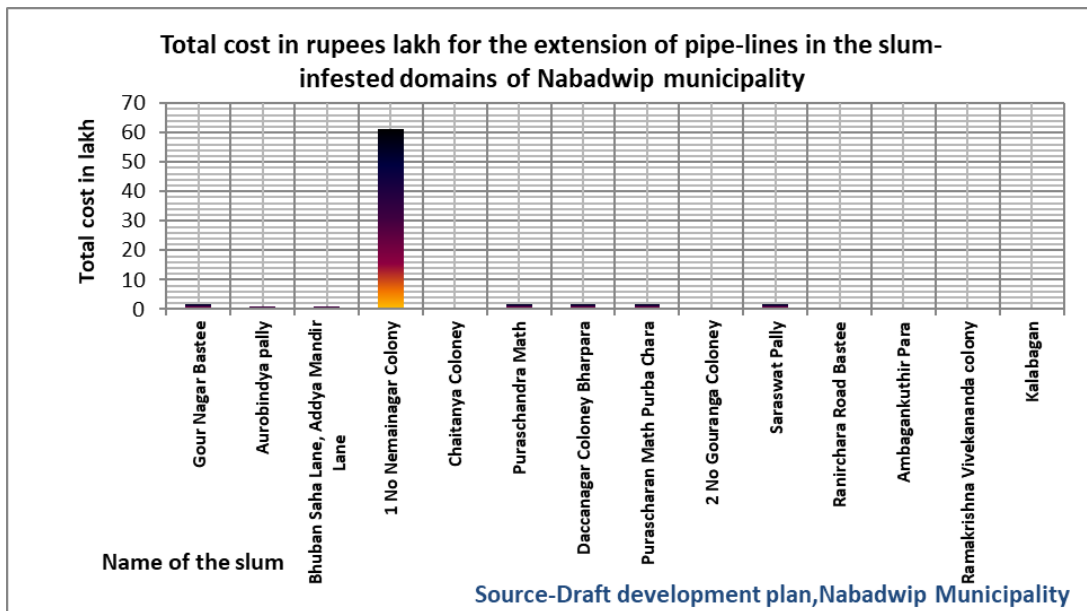


**Unmetalled Road in Nabadwip M**



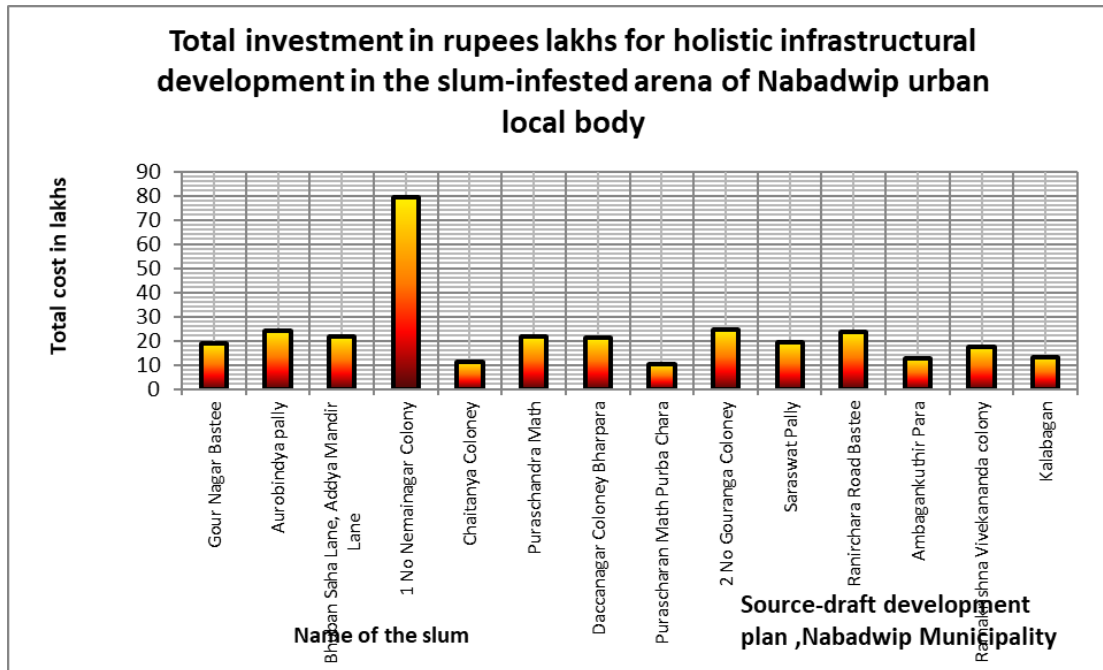
- Total Fund-allotment for Installation of Electric Poles in different slum-infested Area:** Above diagram shows the total fund allotment for installation of electric poles in different slum areas at Nabadwip Municipality. According to the DDP report, highest allotment of fund is done in Bhuban Saha lane baste.

**Total cost for the extension of pipe-lines in the slum-infested domains**



Nabadwip Municipality has spent money for the extension of pipe-lines in different slum-infested area. The extension of pipe-line is not spread equally in the slum areas. Most of the amount is invested for the 1 no Nemainagar colony and little amount are invested for the rest of the slums in Nabadwip Municipality.



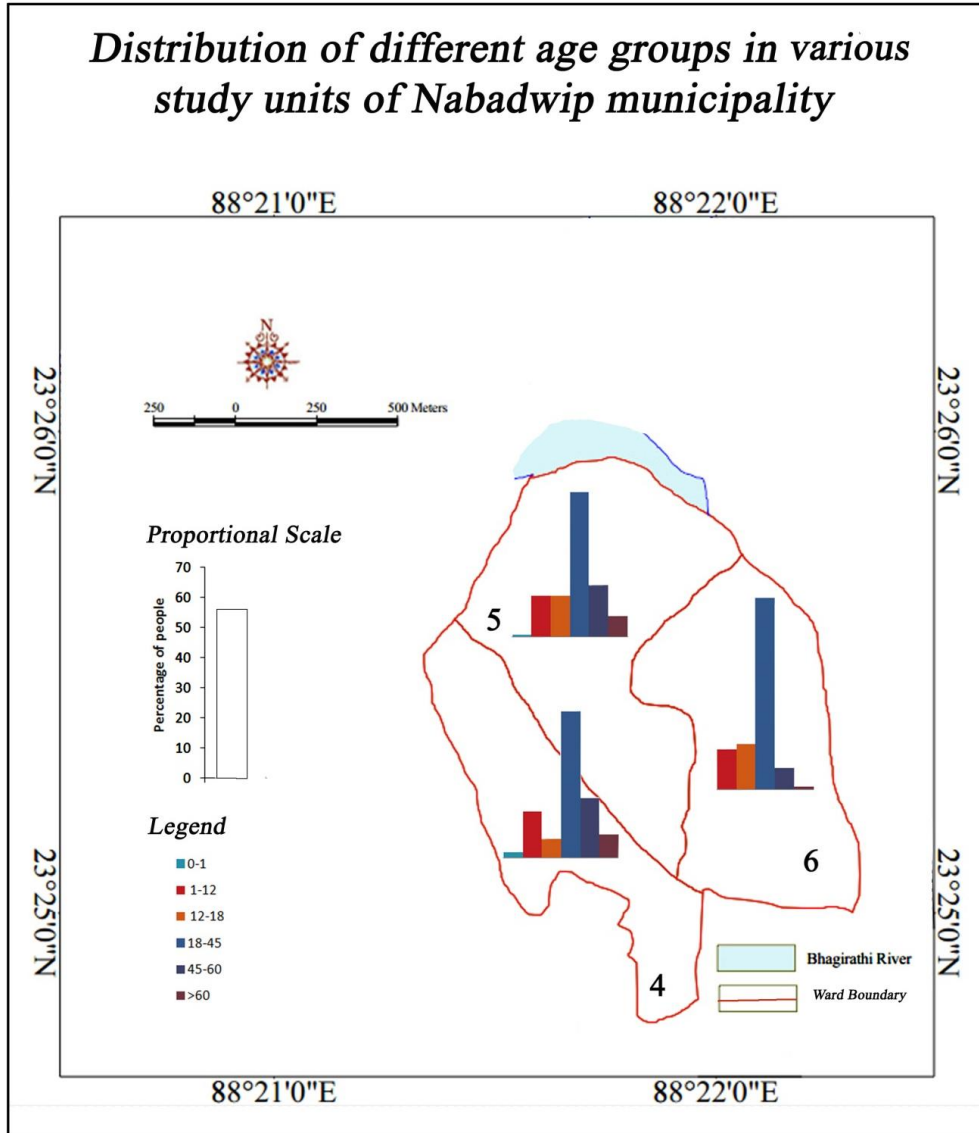


- Total Investment in Rupees Lakhs for Holistic Infrastructural Development in the Slum-infested Arena:** Above diagram is showing the total investment for holistic infrastructural development in 14 slum infested areana. Highest total investment in rupees lakhs is done in 1 no Nemainagar colony and the amount is near about more than 70 lakhs. As a result, 1 no Nemainagar colony is much more developed than other slum areas.



**1 No. Nemainagar Colony Slum at Nabadwip Area**

**Results and Discussions with reference to the Perception Survey**



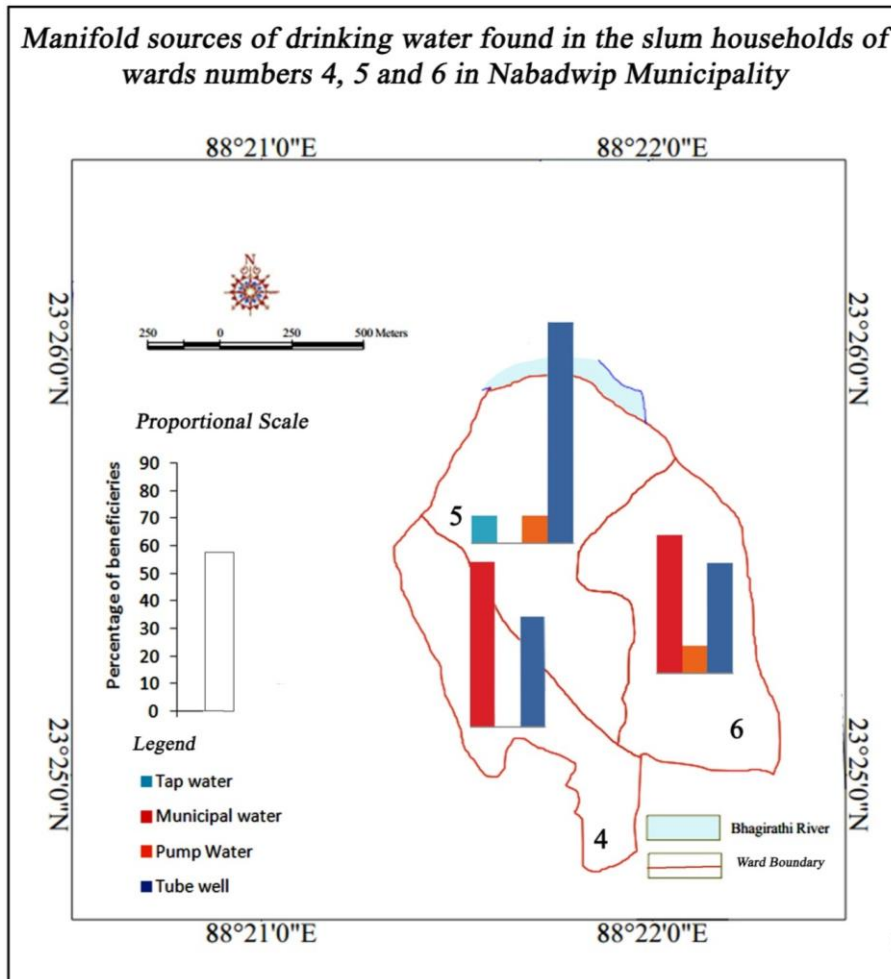
Source-Primary survey, 2021

**Distribution of different Age Groups**

In the study area the surveyor had divided the total population by the six age groups, like 0-1,1-12,12-18,18-45,45-60 and above 60.It has been found that the age group 0-1 is highest in word no 4 more than other words and also it is found that word no 6 has no population in this age group. The age group 1-12 was found more in number in the word no 4(15.38%).The age group 12-18 is more prominent in word no 4 about 15.04% share it does have. The age group 18-45 is dominant in the study area as well. The highest concentration of age group 18-45 is found in ward no 6. About 63% of



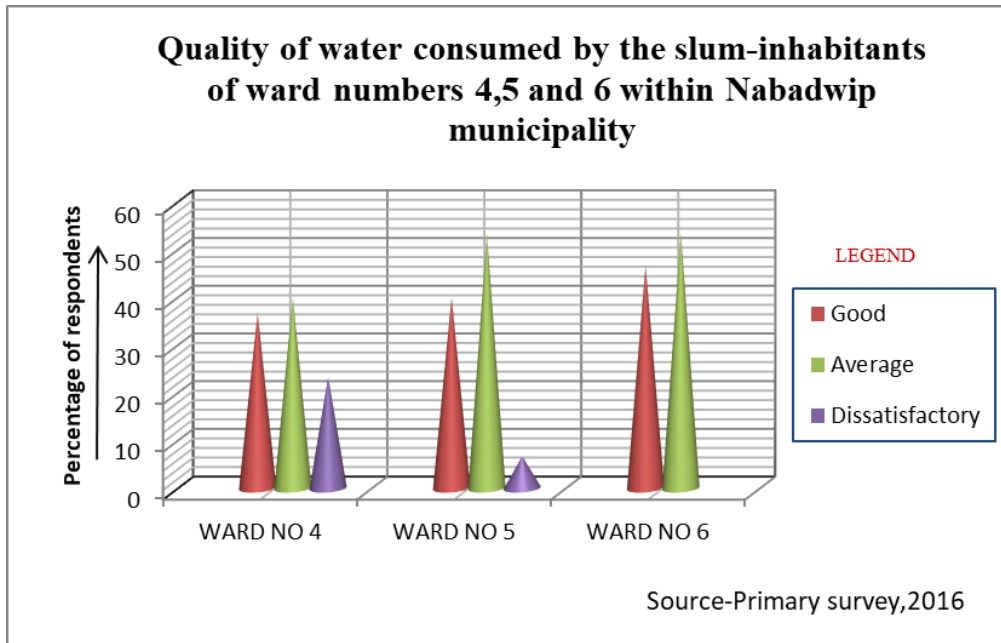
the productive age group has also been found in considerable proportion in the study-units. It is found the highest concentration of age group 45-60 is in ward no 4 and it's about 19.87%. Old person's age group above 60 is seen predominantly in ward no 4. It is about 7.69% and lowest concentration of it is seen in ward no 6.



Source-Primary survey, 2021

### Sources of Drinking Water

Tube well is the major source for drinking water in ward no. 5. About 80% of the surveyed households in ward no.5, people collect water from tube well for drinking purposes. 12% and 15% of the surveyed households collect drinking water from Municipal water and tap connections respectively. In ward no.4 about 60% of the surveyed households use their drinking water from Municipal water sources. 40% of the surveyed households do collect drinking water from tube well. In ward no. 6, about 50% households collect water from Municipal water sources .40% and 12% family use drinking water from tube well and pump water sources respectively.

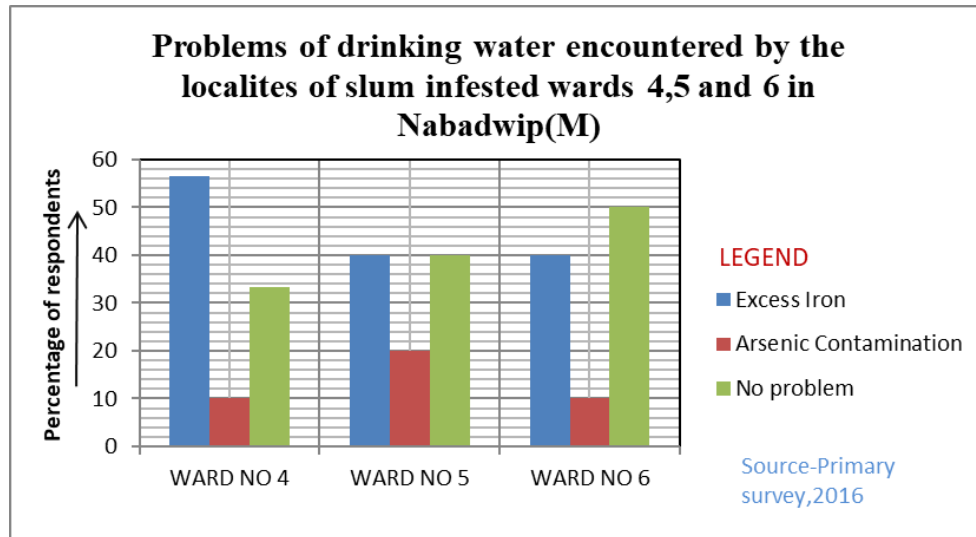


**Quality of Water**

As most of the people of the study area collect their drinking water from tube well, so the quality of drinking water has to be flawless but unfortunately the reality is to some extent different from the ideal. In ward no 4, about 36.66% households have said that the quality of water is more or less good and about 40% have said that to be the average. 23.33% people have said about the water quality to be dissatisfactory. In ward no 5 about 40% people have said that quality of drinking water is good, about 53% have said that to be average and about 6.66% are saying the quality as dissatisfactory. In ward no 6 the quality of drinking water is quite well. Here about 46.66% households said about the quality of water to be good and 53.33% have said that to be average.



**Fasitala Ghat at Nabadwip**

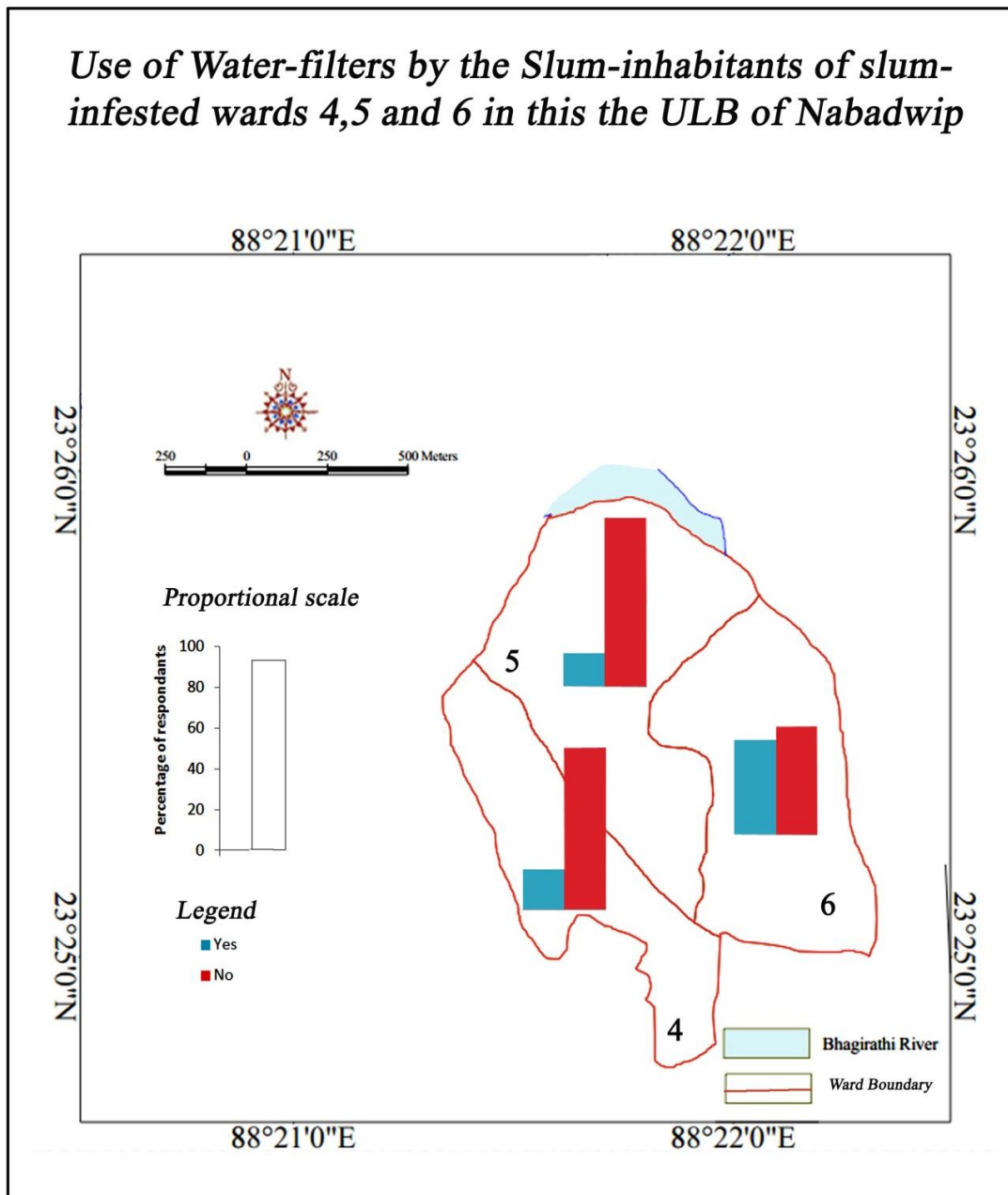


### Problems of Drinking Water

As most of the people of study area collect their drinking water from tube well, the quality of drinking water has to be perfect. Unfortunately certain portion of water here is polluted by Arsenic, excessive Iron etc. In ward no. 4 about 56.66% of the surveyed households are affected by over occurrence of iron in drinking water, 10% households are disturbed by Arsenic and 33.33% households are not affected by either arsenic or iron as they use normal water from newly built up municipal tube-well. In ward no. 5, 40% of the surveyed households use iron infested water, 20% households are affected by Arsenic directly and 40% households use normal water. On the other hand in word no 6, about 40% peoples are affected by iron-infestation and 10% households do use arsenic-contaminated water.



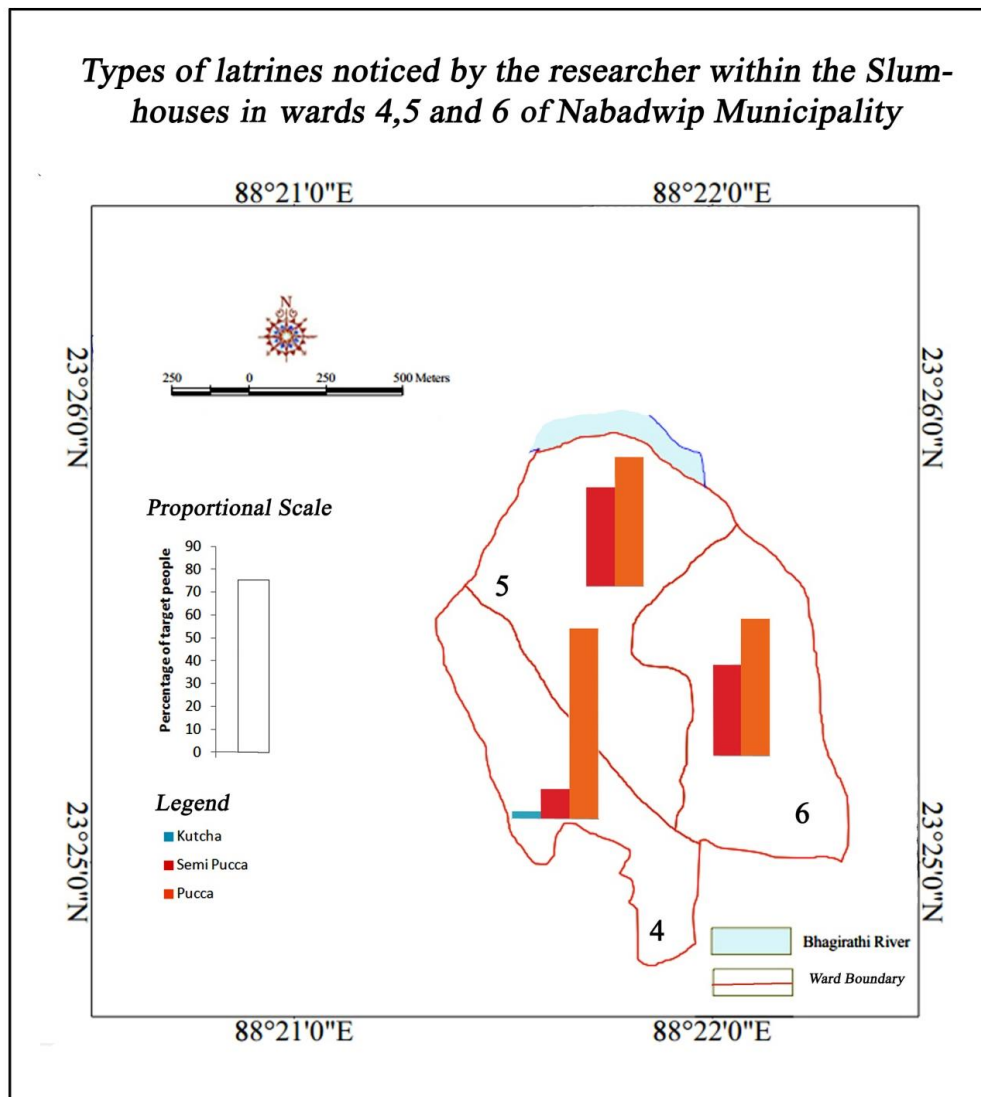
**A Beautiful Temple at Nabadwip-A Place of tourist-attraction**



Source-Primary survey,2021

**Use of Water Filters**

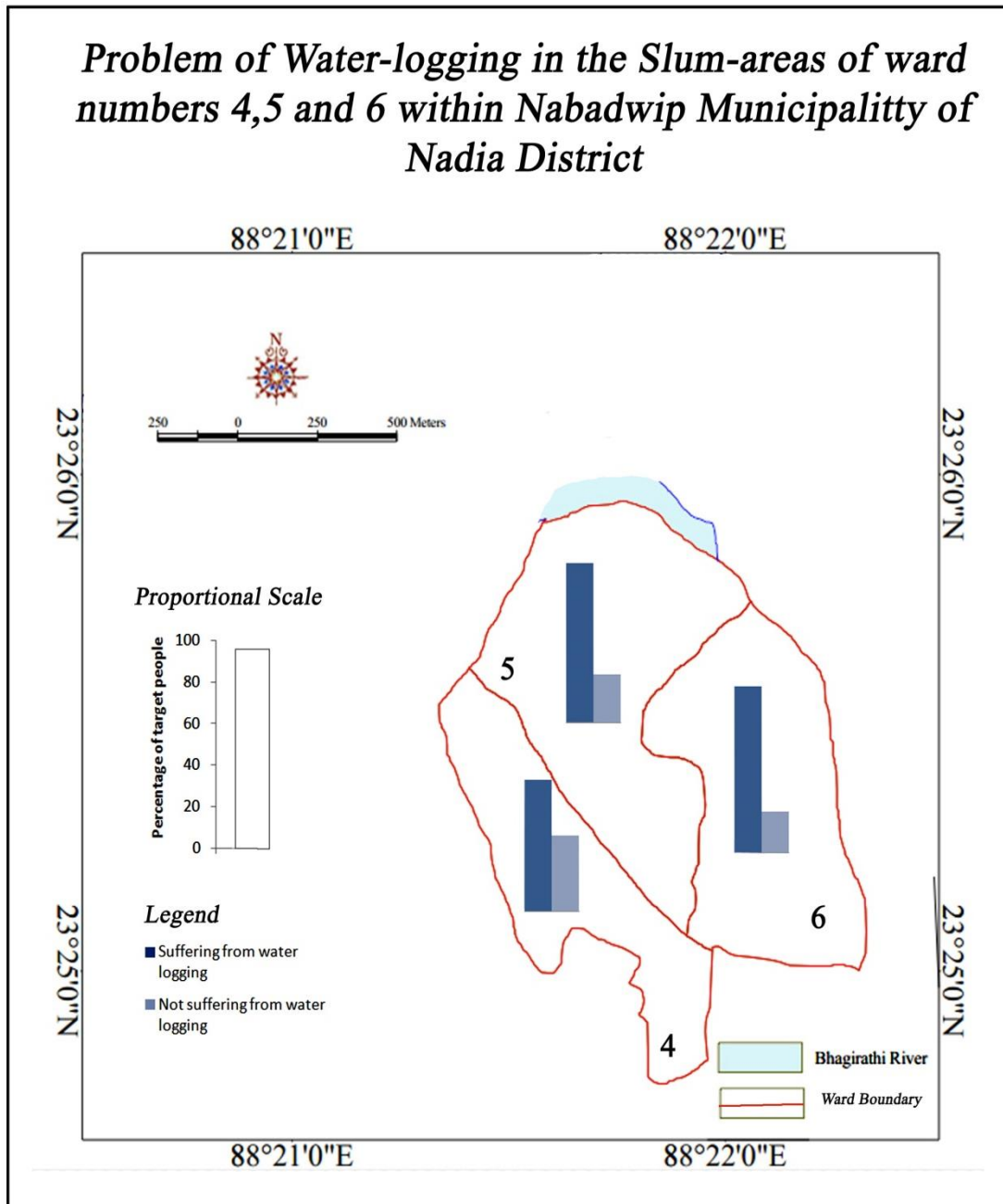
As it is a slum area, so majority of the persons are economically backward. Quality of life style is low. A few numbers of families do use water filter. In word no.4 about 19.99% households are using water fitter. In word no 5 about 16.66% households are using water filter. On the other hand in word no.6 about 46.65% households ar accustomed in the use of water filter.



### Types of Latrines

The people of surveyed in the households use three types of latrines like Kutcha, semi-pucca and pucca latrines. The slum households in ward no.4 is the only area where the surveyor had found kutcha latrine.. About 3.33% of the surveyed households use kutcha latrine still today. 13.33% of the surveyed households use semi pucca latrine and 83.33% of the surveyed households use pucca latrine.

In ward no.5 there is no existence of kutcha latrine. About 43.33% of the surveyed households use semi-pucca latrine and about 56.66% of the surveyed households use pucca latrine. On the other hand, in word no.6 about 40% households use semi pucca latrine and about 60% are using pucca latrine.

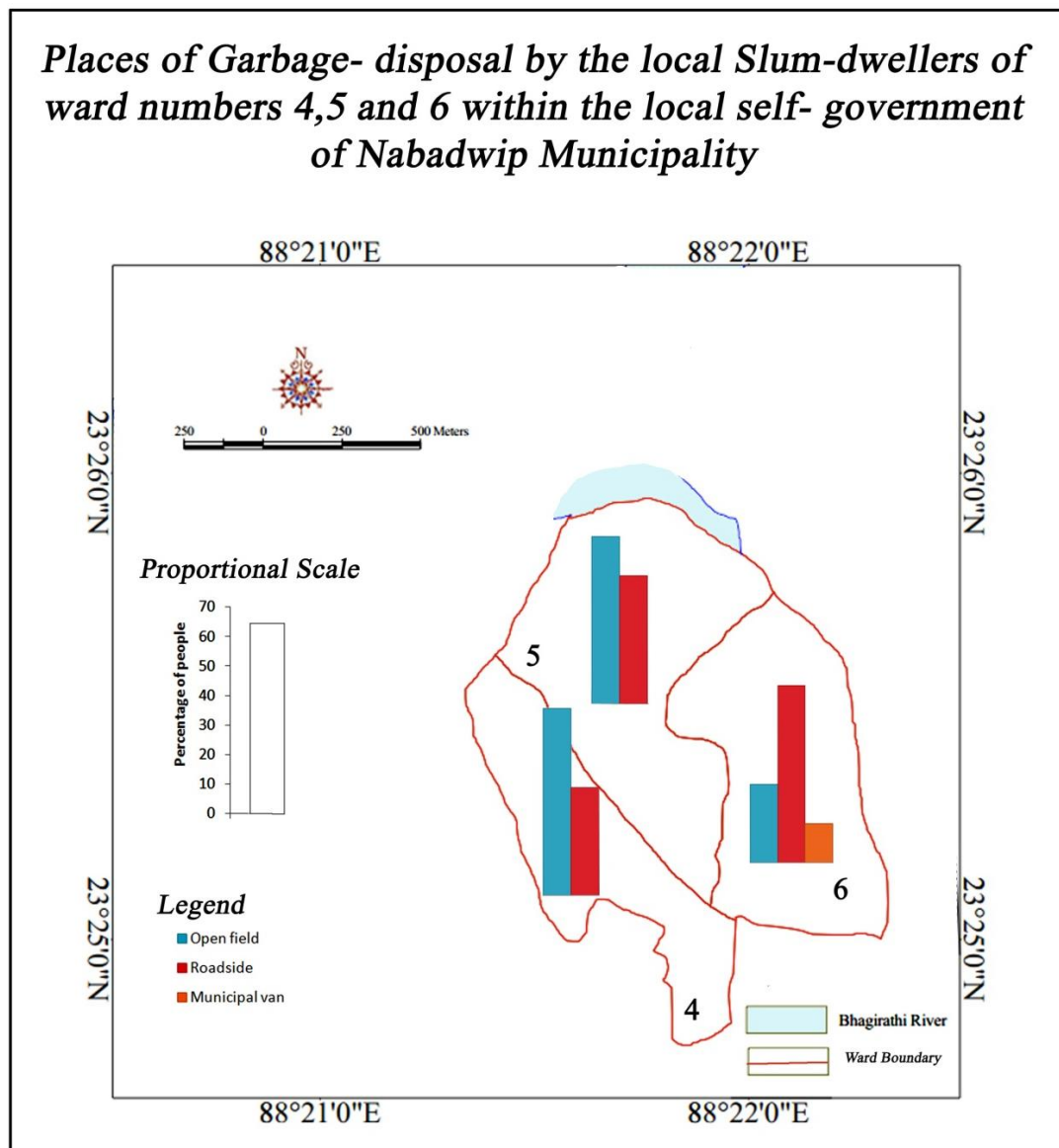


Source-Primary survey, 2021

#### Problem of Water- Logging

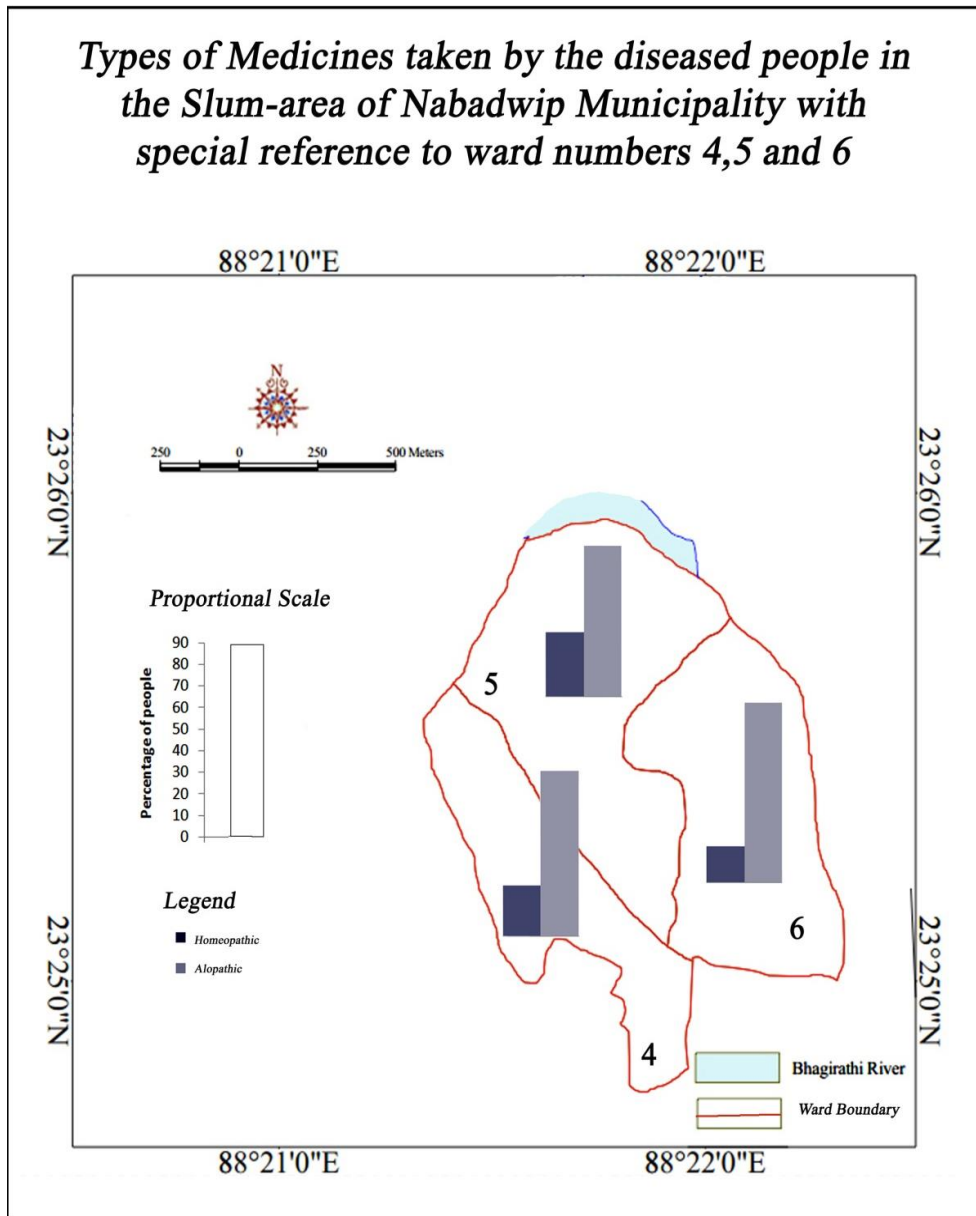
In slum areas drainage condition is not well. This region is located in flood prone area. In word no.4 about 63.33% households are suffering from water logging. In word no.5 about 76.66% households are suffering from water logging condition as well. On the other hand in word no 6 about 80% people suffering from water logging.





### Places of Garbage – Disposal

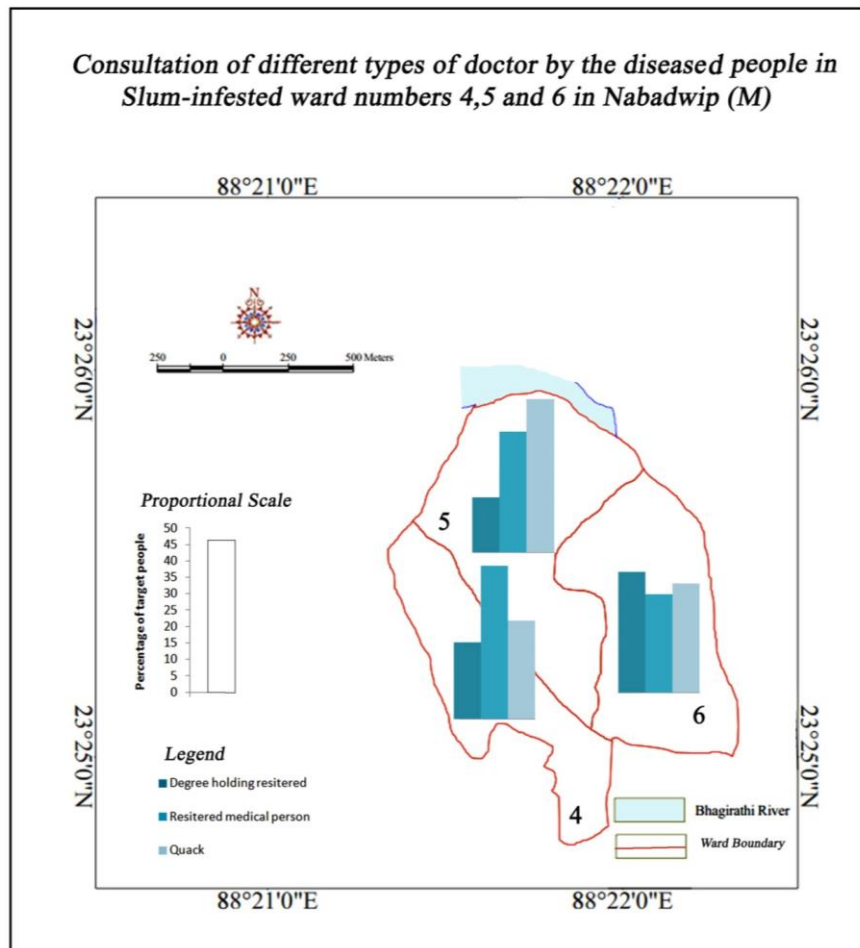
In this study area they surveyor didn't find any ideally placed dustbin at the roadside. In word no.4 about 63.33% households throw garbage on the open field; about 36.66% households are throwing the same on the roadside. In word no.5 about 56.66% households use open field as place of garbage throwing and 43.33% are using roadside for garbage disposal. Only in word no.6 Municipality van takes garbage from a particular place. This service is obtained by about 13.33% households. About 26.66% households throw their garbage in open field even after repeated awareness campaigns and about 60% households use roadside for garbage-placing.



**Types of Medicines taken by the Diseased People at the Tudy-Area**

The people of ward no 4, 5 and 6 take different types of medical treatment. Among the population of ward no. 4, about 23.33% of the surveyed households take Homeopathic treatments while 76.66% of the surveyed households in ward no.4 do get allopathic treatment. On the other hand, 30% of the surveyed households in ward no.5 have taken homeopathic treatment and 70% in ward no.5 are getting allopathic treatment by choice. In word no 6 about 16.66% households have taken homeopathic medicine and about 83.33% are getting a allopathic treatment.

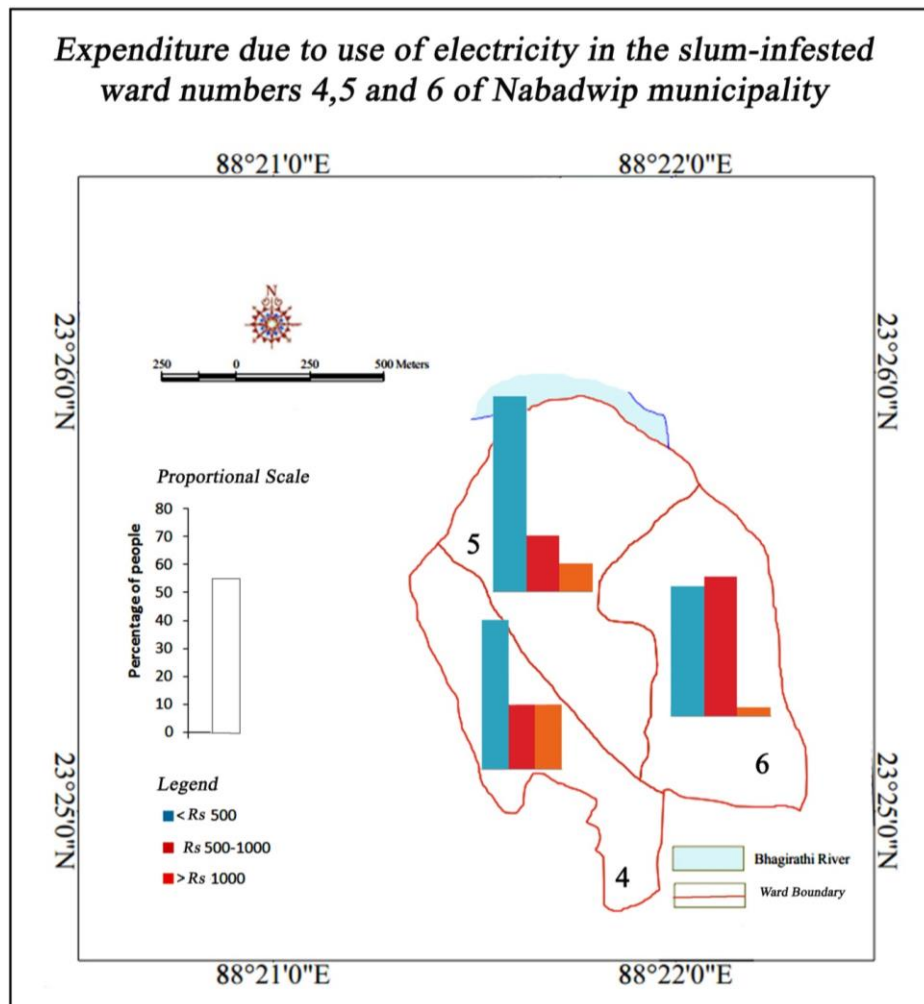




Source-Primary survey, 2021

### Consultation of Different Types of Doctor

People of the study area consult different type of doctor like Degree holding registered doctor or registered medical person and quack. Health service facility is good for the patients at nearest location of Protap Nagar hospital within 1-1.5km from the main word no.4. Here near about 23.33% households do consult degree holding registered doctors, about 46.66% households take treatment by registered medical doctor of the Government Hospitals and about 30% do take treatment by quack jut for poor economic condition. On the other hand in word no.5, about 16.66% people consult degree holding registered doctors, about 36.66% surveyed households are taking treatment by Registered medical person at Government Hospitals and about 46.66% households depend for treatment on quack. In word no.6 about 36.66% households are treated by degree holding medical doctor, about 30% people are diagnosed by Registered medical person at Government Hospitals and about 33.33% households depend upon quack.



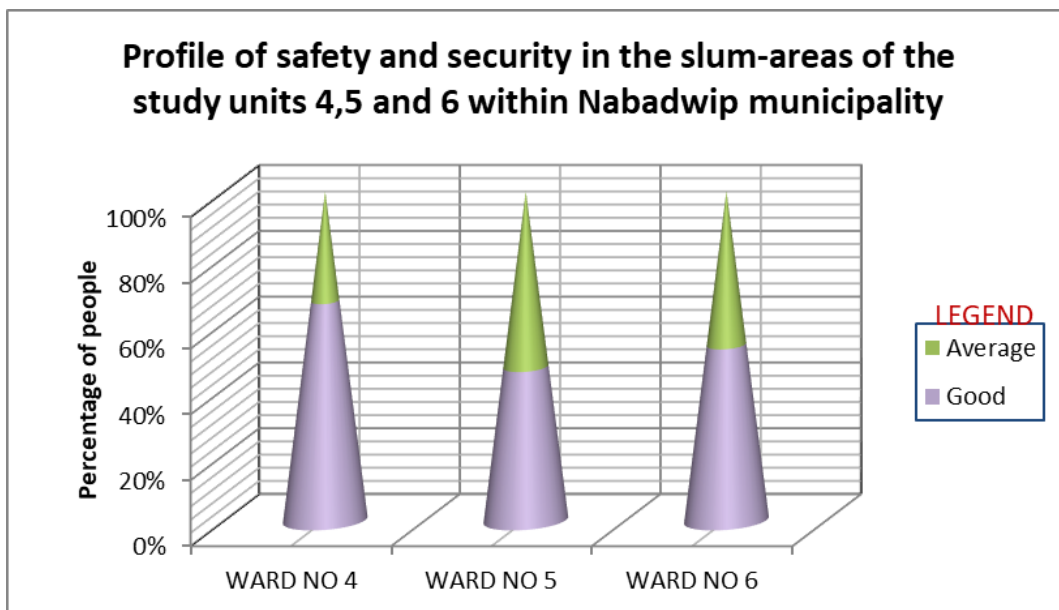
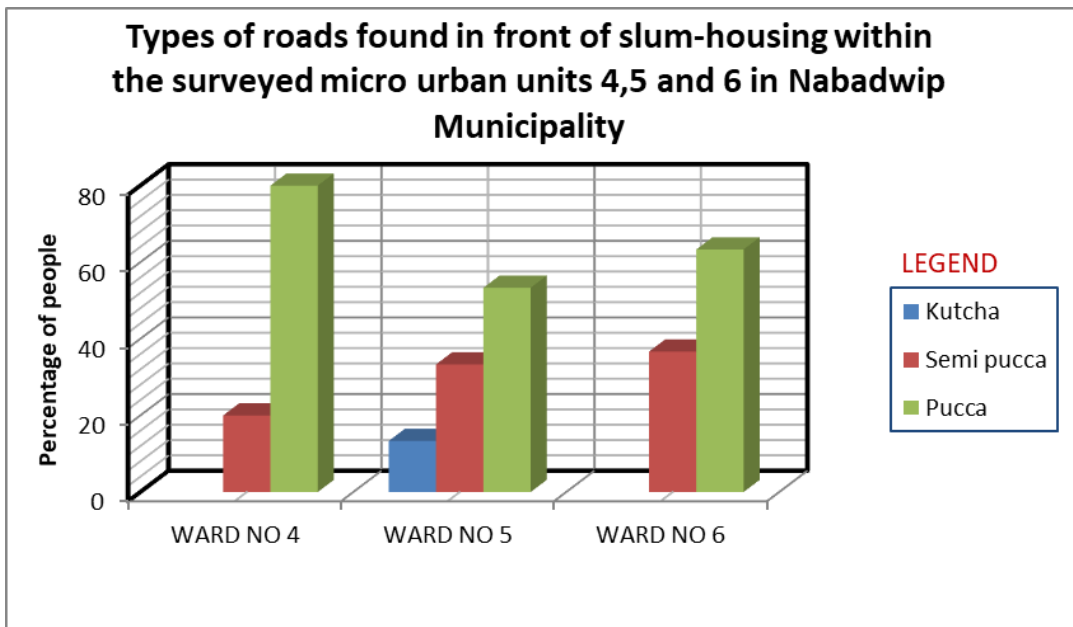
Source-Primary survey, 2021

### Expenditure for Use of Electricity

The people of ward no.4,5 and 6 are enjoying the electricity-facilities to the fullest fruition. Every household in the study area is enjoying almost uninterrupted power-supply. In ward no.4 about 53.33% households have expenditure below 500 rupees per month due to use of electricity. About 23.33% households' expenditure is 500-1000 rupees and about 23.33% households spend above 1000 rupees per month as electricity-charges. In ward no.5 about 70% households are spending below 500 rupees per month. About 20% households are paying 500-1000 rupees and about 10% households are spending above 1000 rupees. On the other hand in ward no 6 about 46.66% people are paying below 500 rupees per month as electricity-charges and about 50% people are spending 500-1000 rupees per month for this purpose. 3.33% of the surveyed households are spending above 1000 rupees per month but their percentage share in the entire population distribution is pretty low.

**Types of Roads**

Road condition of study area is more or less good. In the ward no.4 about 20% roads are included in the domain of semi pucca and about 80% roads are pucca. In ward no.5, the surveyor has found moderate type road condition about 13.33% roads is kutchha. About 33.33% roads are semi pucca and about 53.33% roads are pucca as on date. On the other hand in ward no.6 about 36.66% roads are semi-pucca and about 63.33% roads are pucca.



### **Safety and Security**

The study area's safety and security condition is very well. The surveyed people have said that there is no social disorder in the study-area. In ward no.4 about 66.66% household have said that the safety and security condition is good enough and about 33.33% surveyed households have said that to be the average. In ward no.5 about 46.66% people have opined it to be good and about 53.33% households have said that to be average. On the other hand in ward no.6 about 53.33% people have said the safety and security profile to be good while 46.66% are saying that to be average.

### **Conclusion**

After the thorough questionnaire survey conducted in selected study-units of Nabadwip Municipality and further verification of the primary databases with that of secondary ones, the researcher has reached to the following findings as well as conclusions and these are as follows:-

### **Major Findings**

- Socio Economic Condition of people in ward No.5 is depressing enough as most of them are the refugee communities and hence they don't have their own property to a considerable extent.
- From Demographic profile of the study area, it has been observed that female sex ratio is disfavoured and hence it is creating significant obstacle in the pathway of gender-wise balanced growth in the study arena.
- The slum-dwellers in Nabadwip suffer from the dearth of separate rooms in their 'Jhopris' and therefore sometimes, they dwell in their residences in very many unhygienic conditions.
- Most of the slum-households depended on tube-well which is qualitatively not good. That's why the residents of the slum area especially the children are very much affected by different types of water borne diseases like stomach-upset, fluorosis in teeth, hepatitis etc.
- Economic Status of people in ward No. 4, 5 and 6 is sometimes very much threatening and in particular cases, the monthly income of the slum inhabitants is lower than five thousand rupees even per month.
- In ward no.5, the residents do not have proper as well as scientifically structured drainage system.
- Educational status is not up to the mark here and this is leading to the obvious occurrence of high unemployment in this study-domain.
- The study area suffers from water-logging problem to a great extent.

**Policy Suggestions**

- Necessary steps should be taken by the Municipality for good quality of drinking water supply immediately.
- Good sanitation and sewerage system is also required immediately for all the people.
- Fatally broken unmetalled as well as metalled roads should be repaired as early as possible by the Urban Local Body.
- Spread of education especially the vocational courses will be helpful for the unemployed youth at this area, so far the issue of their speedy employment is concerned.

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## **An Empirical Investigation on how Better HRM Practices Help Employees Reduce Job Related Stress and Overall Economic Environment WRT the Service Sector and Manufacturing Section**

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Mr. Anurag Solanki\*\*  
Dr. Paramjeet Singh\*\*\*  
Dr. Sheeba Khan\*\*\*\*

### **Introduction Human Resource Management**

Since the Industrial Revolution, the role of Human Resource Management has evolved from merely provide Services (Recruitment, Selection, Placement), to Strategic Business Partnership. Human Resource Management not only designs Policies but help the People at the helm of the affair to execute them Successfully. Be it a Job Analysis or Employees Career Succession, the Human Resource Management plays a Key Role in every corner of the Conception of an Organization. With the Advancement of Technology, the competition has grown to leaps and bounds and Human Resource Management plays a Vital role to give their organization the Competitive Advantage.

With dynamic Business Environment and increase in Competition, the Human Resource Manager's task becomes even more important as they must quickly analyse the Change and make their employees ready for the CHANGE, before the technology that their employees are working on becomes obsolete. Fast Paced Changes results in Work overload, More hours of work and Monotony which ultimately leads to STRESS. Gone are the days when HRM only Recruited and Trained the Employees. If the company has to gain a competitive advantage in the Market, they just don't have to take care of the Traditional Functions of HRM such as Recruitment, Training,

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Performance Appraisal but also the Welfare of the Employees which includes Mental Health, Needs, Wants and Desire of their Employees, to name the Prominent Few. The Role of HCM (Human Capital Management) evolved to Human Experience Management (HXM) which will be discussed in the Next Section.

As per the Economic Times Article, Dated September 10 of the Year 2019, the estimated burden on Global Economy due to Depression and Anxiety will cost US \$ 1 Trillion in Lost Productivity Per Year. India, alone will suffer Economic Losses of Herculean 1.03 Trillion Between Year 2012 to 2030. Job Related Stress can be due to Many Factors which will be discussed in Later Sections.

### **Human Experience Management**

With Advent of Technology and the way Business Environment is changing, it is becoming very difficult for HRM to Maintain the Human Resource. The CHANGES that are brought upon the Organization and in turn on the Employees is becoming a daily routine task because of which Employees have to adapt quickly with the changing Business and Economic Environment. The Work QUICK can lead to the Mental Illness called STRESS which if not treated, ultimately leads to more serious mental Problems popularly called as DEPRESSION and ANXIETY. Human Experience Management, a level ahead of Human Resource Management talks about Managing the Needs and Wants of the Employees. HR teams are not just hiring and firing Employees but taking care of their Welfare and Wellness. One of the Discipline called MEDICINE is one of the major contributing elements today in the Study of Organizational Behavior which talks about providing Aid to the Stressed out, Anxious or Depressed Employees. There can be many reasons because of which the Employees experience Job Related Stress but let us examine the Prominent Job Stressors.

#### **Job Ambiguity**

Ambiguity, in general sense means Unclarity. If the employees are not clear about what they need to do or what are their Job Responsibilities, they tend to become Stressed in due course of time which ultimately leads to Employee Absenteeism, Negative Attitude towards work, Hygiene related issues because of which the company loses out on the Man Hour worked.

#### **Job Overload**

Job Overload arises basically because of 2 reasons i) Tight Deadlines ii) Less knowledge about work. According to a recent survey, almost 50% of the employees experience tight deadlines either every day or once in a week. As the Deadline approaches, the Stress starts to increase and is at the top notch when near to the Deadline. Due to face paced changes in business environment, some the technology that employees previously worked on becomes obsolete and when the new technology is introduced, other than the routine work, the employees have to learn the new technology which overburdens them and ultimately leads to Stress related issues.

### **Long Working Hours**

KAROSHI, translates to ***Death by Overwork***. With Dynamic and Competitive Business environment, the work element which is affected the most is the LONG WORKING HOURS. With Job Design transforming from GENERIC to more COGNITIVE, the workload on the employees have increased furthermore. COGNITION means Mental efforts an employee puts in his/her daily routine work. The General 9 Hours Working Shift is never ending. In Japan, almost 90% of the Employees Overwork due to tight Deadlines. The reason is that their Working Age Population is Slowly declining, and Employees are retiring at faster pace. Due to this, the Working Age population are feeling the head as the Government is Forcing the Enterprises to produce more to cater to rise in Demand in Domestic as well as International Markets, if they have to maintain their Position in the list of top 10 GDP's of the world. Anyhow, the pressure of Economy is transferred to Employees.

India on the other Hand has a good working Population however, only relying on this statistic is not enough to prosper. The Literacy rate, Standard of Living are some of the reasons why India is not able to use its full potential and the Workload again is at the mercy of Few which ultimately feels the Pressure. Due to Long Working Hours, the employees feel Stressed out, reach extreme Fatigue levels, Low Energy because of which they are not able to give their 100% on their Job.

### **Literature Review**

With Dynamism in Business Environment, the Organization must adapt with the Changes quickly to avoid Market Share Loose out. A lot of Studies has been conducted before to find out the Work Related Stress that employees experience and its Ill effect on Company's Revenue. The Empirical Investigation done through this Research Paper will not only highlight the Key reasons for Stress at workplace and to the Economy overall but also how the Companies can introduce certain programs to help employees cope up with the Stress.

### **Evidence from Literature**

After Investigating certain Facts, it can be concluded that certain HRM Practices can reduce Stress from Employee and make them more ENGAGED. A Disengaged employee causes a lot of damage to the very Fabric of the organization and results in the decline of Revenue earned by Organizations. If these Practices are followed properly, the Employees will be more productive, and the Stress can be minimised from the Workplace. According to Gallup Poll in USA, the US companies Looses \$450 - \$550 Billion every year because of Disengaged Employees and 80% of Disengagement is caused due to Stress.

### **Research Methodology**

This research has been conducted using primary research technique where data is directly collected from the respondents rather than depending on data collected from previously done researches. I wanted to carry out research that



addresses a certain problem and which requires in-depth analysis. Paper's motive is to highlight and find out the key factors that causes stress at Workplace. This primary research has helped me to directly communicate with the target respondents and get the first hand feedback and their opinions on the problems and concerns related to the research. Since, this research emphasizes on the relationship of a Stress and Job Performance, I have selected Low to Mid level managers to be our target respondents. The respondents include Assistant Manager Sales, Sales Managers, Academician, human resource managers and other distinguished officials holding authorities in the reputed organizations. The responses and feedbacks of these respondents has successfully and immensely assisted us in arriving to conclusions that would surely New and Established Organizations/managers to help their Employees Cope up with the Stress caused at Workplace.

During tough times like today (outbreak of Covid-19), I took necessary precautions while collecting the data supporting our research by drafting a well-structured questionnaire consisting of a formalized set of questions on the subjects pertaining to our research. The questions were created by using "*Delphi Method*" in 2 rounds. The respondents were asked to give their Objective replies to the series of questions about STRESSORS at workplace. The questionnaire was virtually sent to all the respondents via e-mail on their official e-mail id's (*and google form tool*) and posted on LinkedIn, and the responses were received in the same order. After collecting the desired responses, I then finally interpreted and analysed the data to arrive at the concrete and fruitful decisions that will help business concerns while helping the employees cope up with Stress and its different form which will inturn help the organization to Build a Strong Brand value and makes them the best Company to Work.

**Structured Interviews** consist of a series of pre-determined questions that all interviewees answer in the same order. Data analysis usually tends to be more straightforward because researcher can compare, and contrast different answers given to the same questions. Other method that was used was Structured Interview Method which was performed over the Call and Google Meet Application. As I wanted to Capture the Qualitative Aspect of the Respondent, I happen to Interview 7 Employees of EPIC ONESOURCE PVT LTD, which is one of the Financial Service Provider Located in Vadodara, a City in Gujrat. The responses of all the 7 Employees were Recorded in Qualitative form.

To analyse the Study from International Perspective, the response was collected from the Employees/Expatriates working in United States of America. The Questionnaire were mailed to the participants to which they responded and helped me to have a view on the Silent Killer from International Perspective.

### Hypothesis

- H<sub>1</sub>:** There is a significant Positive Relation between Low Performance, Disengagement of Employees and Regular Absenteeism from work due to Job Related Stress
- H<sub>2</sub>:** There is a Significant Positive Relation between Introducing Welfare Programs, Frequent Feedback Practices and Recognizing Employees and Low Stress which in turn motivates the Employees to Perform as desired

### Data Analysis Techniques

Data Analysis of the Responses was accomplished by using the Pie Chart Method, which was auto generated by Google Form Application which helped me to realise the relation between various factors of Stress at workplace and how the Organizations can help their employees to cope up with it. More of Qualitative analysis was done in Structured interview Method as the Questions that I asked were from the Questionnaire itself.

### Research Findings

The Finding hereby will be discussed Question wise according to the Analysis done and Responses Received from Individuals from Service and Manufacturing Sector.

#### Q.1 Which Sector are you Employed in

Out of 80 Respondent of Questionnaire and 7 Interview Conducted, 90% of the respondent belong to Service Sector whereas 10% of the Respondent belonged to Manufacturing Sector.

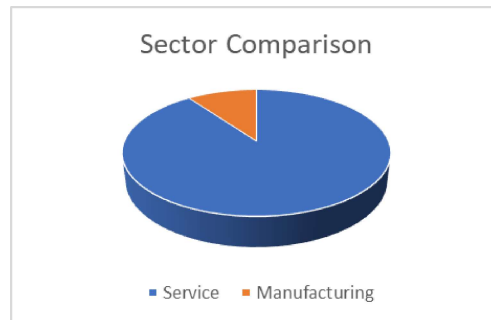
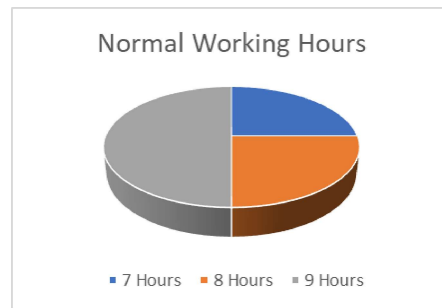


Figure 1

#### Q.2 What are your Normal Working Hours

Through this Questions, I wanted to capture the routine Working Hours of the Employees which their Organization demands (Overtime Not Included). Out of 80 Responded, 50% Stated that there normal working hours are 9 Hours whereas the other 50% Respondent stated that their shift was of 6 – 7 Hours. Further analysis was done to find out which Sector (Service or Manufacturing) had longer Shift and it was found that Service Sector had longer Working Duration which average out to be 85 Hours per day (Overtime not Included).



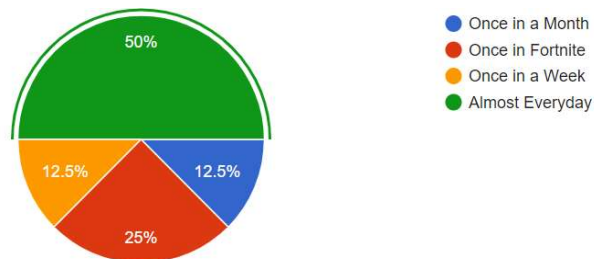
**Figure 2**

Suzy Parkinson's Article in GQR, Dated August 9, 2018, "According to The New York Times, Perpetual Guardian, a firm that manages trusts, wills and estates, eliminated an entire day's work from their typical five-day, 40-hour workweek for six weeks earlier this year. It was curious to see what this change would do for its 240 employees – and how it would affect the business.

It turns out that employees reported a 24-percentage point improvement in work-life balance. They said they spent more time with their families, exercising, cooking and working in their gardens and returned to work more energized. Staff stress levels were reduced by 7 percent. I will analyse this viewpoint later during the Findings.

### **Q.3 How often do you Engage in Overtime?**

Overtime refers to any hours worked by an employee that exceed their normally scheduled working hours.



**Figure 3**

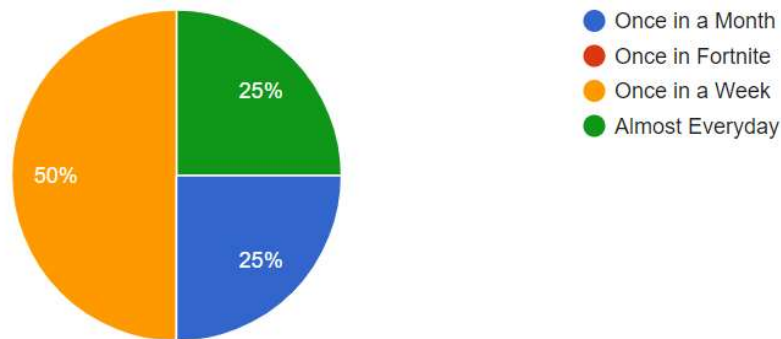
It is Quite Evident from the responses that were received, that 50% of the Employees indulge in Overtime and 37.5% of the Employees engage in Overtime once every 15 days. According to First Post Article dated November 21<sup>st</sup> 2019, there are few negative Effects related to Overtime which are More Fatigue, Access Alcohol Consumption, Heart Related Diseases, Stress Dominant life, to name the few Prominent Risk Factors. The most common reason why Employees Indulge in overtime is due to WORK OVERLOAD, STRIVER SYNDROME, EXTRA MONEY, without realising the fact that they are risking their Health due to Overtime. Ultimately

if the employees are facing the above health problems, they won't be productive for the organization which will result in sluggish performance. With my Findings I might try to solve this problem. Almost 70% of the Respondent are from Service Sector who experience OVERTIME issues.

**Q.4 How Often do you find yourself Dealing with Deadlines?**

Deadlines – One of the Major Factor that causes WORK OVERLOAD has been another major problem that causes Stress amongst Employees across various Sectors. Almost 50% of the Respondent Agreed that they indulge in Overtime once in a Week and 25% of the Respondent Indulge in Overtime Almost Every day.

Work Overload Ultimately leads to Physical, Mental and Emotional Exhaustion which results in problems such as Headache, Irritability, and the employees detach themselves from Work which leads to Slackness in Performance

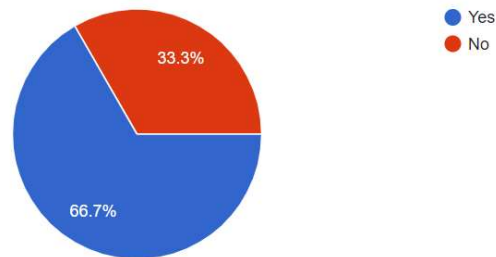


**Figure 4**

**Q.5 Do you Experience Job Related Insecurities?**

Fear of loosing something, can be quoted as a simple meaning of the word Insecurity. And among the Employees, this is one of the major concerns, JOB INSECURITY. With Dynamism in business environment, technological advancement and competition, the skills that an employee possess can become obsolete which makes them rather ineffective for organization. Organizations can decide upon training the employees on new technology, however, from company's perspective, training can involve huge overhead costs which companies usually relinquish in case the skills are available readily in the market. This results in layoff, retrenchment and ultimately the employee has to suffer.

Out of 80 Respondents, 66.6% have stated that they experience Job related Insecurities which eventually put them under greater risk of experiencing STRESS. The employees have to be up to date with the new technology that is being introduced to make them a GOOD – FIT for the organization. Will discuss the remedies on how the Organization can help the employees overcome this problem.

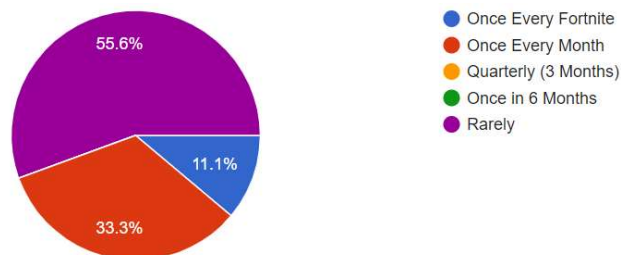


**Figure 5**

**Q.6 How often does your HR, Team Manager, Operations Manager meet with you to provide Job Related Feedback**

According to an article in TRUQU, the Feedback can help reducing BRAIN DRAIN amongst the employees. Not many people find it easy to understand whether they do everything right on their own. As a consequence, their confidence and joy for work may drop while their minds are getting clouded with doubt and the stress level is climbing up. Thus, an expert look from the outside and merely a few words of constructive feedback can help your colleagues feel like they're on the right track and don't make any fatal mistakes.

Besides making employees feel valued and recognized, a manager who gives regular feedback shows care for what's going on in their team. Feedback is a sign of a manager's interest in their staff's activities and work results, without which some team members may think they're neglected and become disengaged. So, by frequently motivating your colleagues with constructive feedback, you might notice them turning more committed and loyal shortly after.

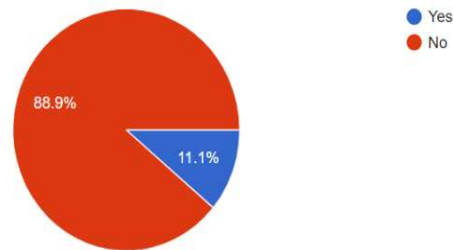


**Figure 6**

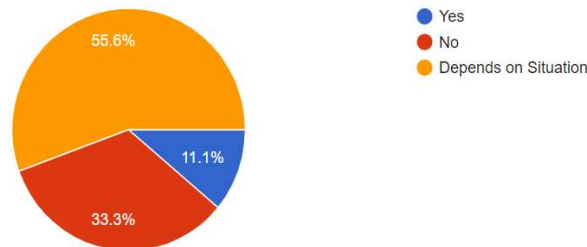
However, research shows shocking results. Almost 56% of the Respondents stated that they rarely get any feedback from their management team which can be concerning. Especially in service sector, where the Mental Workload is more than Manufacturing Sector, the Employees constantly look for feedback to improve their performance and be more Motivated to work. If the employees are not aware about how they are performing, the working becomes quite ambiguous and as stated above, the employees disengage themselves from the work.

**Q.7 Does your Manager/Company provides you Freedom to take decision about your Work Environment?**

If employees have the control over the Work Environment they delve in, they feel more comfortable in performing a task. Control over work environment depends on certain factors such as Situation, Experience of Employee handling that particular task, Leadership Style(Autocratic, Democratic, Free Reign). If a fresh recruit is given freedom to take decision of his task performance it may lead to Bottle Necks as he has less experience of the matter, however, if an experience employee is given freedom, he may perform better than expected as an experience employee will feel suffocated. Through this question, I wanted to capture the degree of freedom an employee has of his Work Environment in both Service as well as Manufacturing Sector.



**Figure 7**



**Figure 8**

Only 11% of the respondent stated that they have the control over their Work environment whereas 55% of the respondent stated that it depends on the Situation. 33.3% of the respondent replied that they have no control over the Decision-making process which is quite alarming as they might feel suffocated owing to lack of Decision taking ability.

**Q.8 Does your Company provides Wellness Program (Yoga/Fitness Training/Gym Membership) for you? How often does your Company Organize such Programs?**

Task these days involve more Cognitive work rather than physical work, all thanks to latest Technology being introduced in Job Function. With this Question, I wanted to know how well the companies are taking care of their employees Mental

118 Innovations and Challenges in Education, Humanities, Applied and Social Sciences and Physical Wellness as it is a must these days to keep your employees Mentally, Physically and Morally Fit and engaged at work. 89% of the respondent replied that their companies Never or rarely organize such Wellness program, which is quite alarming.

### Q.9 Does your Company Organize Social Gathering?

According to Jit S Chandan's finding in his book on Organizational Behaviour, one of the best cultures which an organization can adopt to help their employees to cope up with the Stress is to promote socializing amongst their employees. Socializing can be accomplished through many ways such as Award Functions, Team Dinner, Quarterly Performance Meetings and Appraisals through which they employees comes to know the people they are working with. Group Cohesiveness increases if the organization gives them a chance to Gel up with their Colleagues, Peers, Subordinates. 79% of the respondent across Manufacturing and Service Sectors stated that there was no social gathering which was organized by their companies, neither offline nor online.

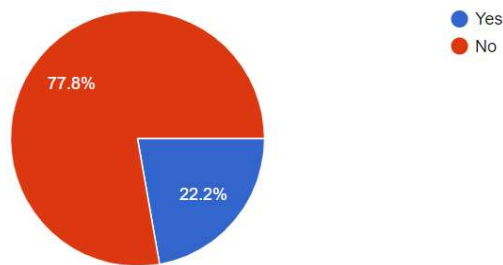


Figure 9

### Working on Resolution

With this section, I tried to apprehend the responses from Respondent as to how their Organization can try to reduce the Stress levels that arises due to Work/Job Load. The Questions that were asked, originated from the Previous section. This section Highlights the key programs/practices that the Managers/HRM/C – Suite team can adopt to make the workplace more motivating and reduce the Job-Related Stress and increase EMPLOYEE ENGAGEMENT.

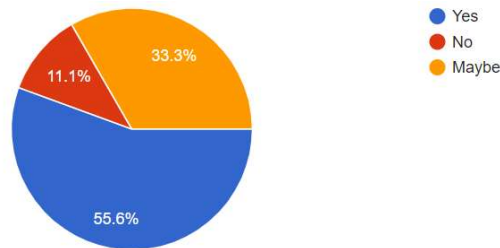
According to article posted by Dana Wilkie, Dated April 20, 2020, SHRM, following measures must be taken to help employees cope up with Stress issues at workplace. Encourage your team to take advantage of stress-management webinars, wellness tips or programs, and yoga or meditation classes. Set an example by using these resources yourself.

Make sure workers are taking regular breaks and be sure to take them yourself. Encourage employees to exercise daily, take time for friends or a significant other after work, pursue hobbies, listen to music, and take time off.

**Q.10 Do you think its better for your Company to Adopt WFH/Flexible Working Hours System**

To this Question, 57% of the Respondent stated that the company should adopt Work from home or Flexible working hours. According to article published by Adi Gaskell, Forbes, Dated January 11 2016, way before Pandemic Era, “It found that employees who were placed on a flexibility program were both happier at work and less prone to burnout and psychological stress than their colleagues who were not on the program”. Of Course, working from home or flexible shifts has their own disadvantages, like Motivation, Typical Team bonding Challenges, keeping a track of daily Task Performance, to name the few, in spite of these challenges, the Employees can easily manage their work life balance which is not possible during the tight schedules usually followed by the Organizations.

Quality Circles, which is that Branch of Human Resource Management that keeps a track of Work – Life Balance of an employee should evolve with such programs (WFH/Flexible Shifts) which can be beneficial for the Organization as well as the Employees. There are other benefits too linked with WFH/Flexible shifts such as it Improves D&I, increase productivity, Improves Employee Engagement. And according to the Employers, it saves them a lot of Overhead costs. While 33.3% of the Respondent were not sure, 11.1% of them felt that the HR should stick to Fixed Shift regime.



**Figure 10**

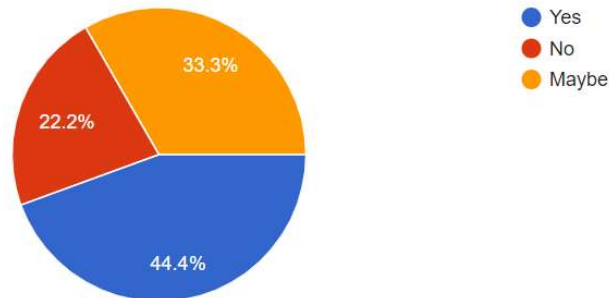
Recent UK research by Capability Jane reveals the demand for flexible working is substantial in which, 92% of Millennials identify flexibility as a top priority when job hunting,80% of women and 52% of men want flexibility in their next role, 70% of UK employees feel that flexible working makes a job more attractive to them and 30% would prefer flexible working to a pay rise.

**Q.11 Do you think it’s better to Hire more Personnel (Full Time/Part Time/GIG) to avoid Work Overload/Tight Deadlines Situations?**

Right People at the Right Place and the Right Time and at the Right Job, has been the Motto of Human Resource Management since Yesteryears. Onboarding process has taken a Strategic Position in an organizational Core Planning process. The question tries to Capture the true sense of Human Resource Management which



predicts that the HRM should have more staff than it has presently. There are instances where a project/assignment may arise and the client demands an urgent completion of the work which ultimately leads to tight deadlines and Work Overload for Employees which results in Stress at work place. Having right number of people whether Part Time/Full Time can help shred the workload and reduce the Stress at workplace. To this Question, 44% of the Respondent agreed that the company should onboard more staff either Full Time/Part Time/WFH and 33% were not sure about this. The remaining 23% stated that it is not required. When I interviewed HR Manager Divya, EPIC Ventures Pvt Ltd, she stated that the company can onboard some GIG workers to shred the workload from the regular staff so they have less burden of work and hence removing stress from the Workplace



**Figure 11**

**Q.12 Do you think your HRM/Team Manager/Operations Manager should provide Job related Feedback more often to avoid Job Related Insecurities**

The Biggest Stressor in an employee's life is Job Security. Even before Pandemic Era, the biggest factor that contributed to the Stress in an employee's life was his/her JOB SECURITY. With Paradigm shift in the way company operates, Technological advancement and Dynamism in Business Environment, the Skills that an Employee possess can become Obsolete, because of which an employee may lose his/her ground of employment and become a part of Lay Off/Retrenchment. This is the biggest fear in the Minds of Employees which may arise due to lack of position power as well.

According to an article published by SHAWGIBBS on their website "Open communication is critical in leadership - keeping employees up to date regarding changes, expectations and their own performance not only keeps them on track but also reduces feelings of stress and anxiety – after all, there is nothing worse than being kept in the dark. As a manager be sure to keep your team abreast of the latest developments and departmental changes. What's more, open communication is a two-way street and the more you communicate with your employees, the more likely they are to share concerns, ideas and thoughts making for much stronger working relationships and a

healthier overall company culture.” To this Question, 89% of 80 Respondent Agreed that their HRM should provide feedback related to their performance which clearly suggests that the practice is being overlooked due to other factors which may wreak havoc the employees Motivation levels and the Employees may feel more insecure owing to lack of communication with regards to their own Job Performance.

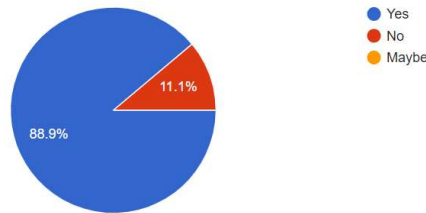


Figure 12

**Q.13 Do you think that your Company should give you more freedom to take decisions in your Work Environment?**

This Question is quite debatable since Decision Making usually rests with the Managers/Leaders in a work system. There are certain factors which affects the Decision-Making Process should or should not be given in the hands of an Employee. Experience, Skills, Leadership Style can be some of the factors that influences the Decision-Making abilities of an employee. However, 33% of the respondents feel that they should be given freedom to take decisions of their Work Environment. While 55.6% of the Employee are not sure if it will affect their Mental health in anyway.

**Q.14 Do you think that your Company should organize more Wellness (Yoga/Fitness Training/Gym Membership) Program more Often?**

Respondent from both the Sectors, Services and Manufacturing agreed upon the fact that the company should organise Wellness Program quite often Programs such as Yoga Workshops, Gym Membership, Fitness Training should be inculcated in the routine. It is a proven fact that Mentally and Physically fit Employees are more effective and efficient in Performance. Meditation, Yoga Asans and Cardio exercise can be easily organised for the employees on regular basis to break the monotonous and not to forget hectic work schedule and will help the employees cope with the Stressful Situations. 44.4% of the respondent agreed that their organization should include Wellness program, while 33.3% were not sure about the effectiveness of it.

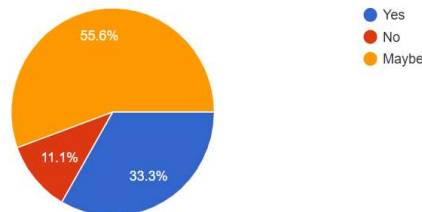
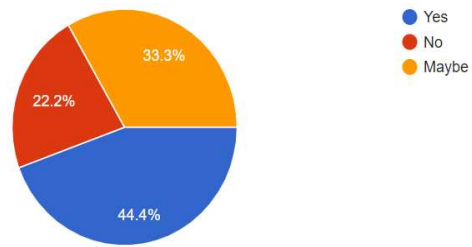


Figure 13

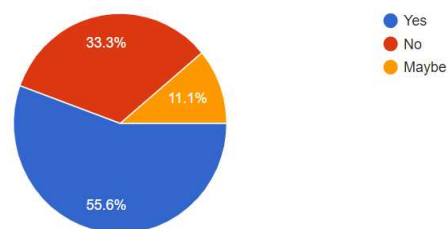


**Figure 14**

**Q.15 Do you think your Company should organize more Social Gatherings (Award Functions/ Team Dinner Outing/Cultural Events)**

56% of the respondents stated and agreed that their companies should organize social gathering, in a form acceptable by the Organizations standard. Social gather can be in the form of Award Functions, Team Dinner Outing, or Cultural Events to name the few. Social Gathering helps a Team Leader/Operations Leader in many ways such as improving Group Cohesiveness, Nourishing Group Dynamics like Team Building to name the few Positives. According to an article published by TALENT INTELLIGENT, Dated June 11, 2018 (Pre – Pandemic Era), “A multi-year research effort from The Gallup Organization suggests having friendships in the workplace can have a significant impact on employee experience. The research found personnel who had a best friend at work were 43 percent more likely to report having received praise or recognition for their performance in the last seven days.”

Those employees also reported significantly higher levels of healthy stress management, even though they had generally experienced the same levels of stress as ones who didn’t have a best friend at work.” While 33% of the Respondent were against the idea of organizing social gathering because of Pandemic Era, Introvert Nature, family commitments.



**Figure 15**

**Structured Interviews Findings**

Through Structured Interviews with 5 Respondent, I tried to have a deeper Insight on the Objective of this Research Paper. Out of 5 Interviewees, 3 are from India and 2 are from United States of America, 4 from Service Sector and 1 from Manufacturing sector. The Questions asked were same which were present in Questionnaire.

- Mr. Prashant Shegde (HR Head, Epic Ventures Pvt. Ltd.)
- Ms. Divya Sharma (HR Executive, Epic Ventures Pvt. Ltd.)
- Mr. Rajesh Sonawane (Head – Accounting, Epic Ventures Pvt. Ltd.)
- Mr. Premjit Sethi (Project Lead, Vistex Software Pvt Ltd, Chicago Illinois, US)
- Ms. Anjali Ojha (Sr. Software Engineer, Infosys, Onsite Placed, New York, US)

All the Interviewees had almost similar Response to the questions asked. Interviewee working overseas stated that their Human Resource Management has started conducting more online meetings through dedicated video conferencing software to provide them regular feedback and also organizes various e – cultural events and reward and recognition programs to keep high motivation levels. They also stated that the Human Resource Managers have adopted e – Fitness regime in which, every Friday (Mr. Premjit Sethi, Vistex Software Pvt Ltd) and every Saturday (Ms. Anjali Ojha, Infosys, New York, US), the employees undergo Zumba fitness workout and Cardio exercises. They stated that it has helped improved their Mental Health and they can concentrate more on their work.

The Interviewee from India stated that the social gathering happens rarely now due to Pandemic, however, the Human Resource Management Team from EPIC ventures provide feedback every 2 weeks to their employees about their performance which has kept their employees engaged. All the respondents stated that their organization should hire more Individuals to shed off the load from the employees and keep the deadlines in tact and meet the daily and monthly targets. They also feel that the Human Resource Department should organize e – social activities to keep the zeal of a team spirit alive even in the Pandemic era.

### **Research Conclusion**

Either it's a Service Sector or Manufacturing sector, the Cognitive Task has taken over the Generic Physical Task Structure which involves more or thinking abilities rather than physical abilities, all thanks to Technological advancement in the field of Artificial Intelligent and Machine Learning. Introducing technology was supposed to make the life of the Employees and Employers easier but it only added up to the problem. **Karoshi**, is a Japanese word for “Death due to Overwork”. Almost 95% of the employees in Japan suffer from Overtime of 80 Hours a Month which is an alarming situation has the Mental Health is at stake. 44% of the respondent stated that they experience Overtime issues almost everyday and even if we take 1 hour of overtime, the results comes out to be approximately 30 – 40 hours of overtime every month. 89% of the respondent (Questionnaire & Structured Interviews) stated that they experience Job Related Insecurities which is another Major factor that contributes to Job Related Stress. A stressed employee generally shows signs through Absenteeism, Excessive complaining, and negative attitude towards work. Here are some tips and advise to Human Resource Managers/Team on how they can

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effectively handle Stressed employees at workplace. Prepare an effective feedback program for the employees after every 2 week, doesn't matter the channel used to communicate, either Video Conferencing or face to Face meeting to keep the employees motivated

Organize Well Program every week/Month to keep the Mental Health of the employees intact. Happy Employees are more effective and may perform better than stressed employees. Human Resource Management should chalk out a plan to introduce Flexible Working hours, Work from home culture. This should happen even after Pandemic Era ends as it will help them employees balance their Work – Life Regime and keep them more engaged Human Resource Management should organize e – social gatherings in the form or Reward and Recognition Programs, Cultural Events so as to keep the Employees Happy and which in turn will improve the group cohesiveness.



## Scientific Temper among High and Low Scientific Creative Students

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Dr. Rishu Deep Bhatnagar\*

### Introduction

The current century is best called the age of explosion of knowledge. Advancement made in the field of science and technology is a great human achievement. Knowledge of the science is self-accumulating, self-accelerating, self-growing, self-pervading and self-correcting. It tries to provide a body of information through procedures that are demonstratively objective but often wiped out a subjective context. It inculcates characteristics of open-mindedness, free from superstition, curiosity, inquiry, collection of data, demand for verification and proofs, logical reasoning, suspended judgment, acceptance of warranted conclusions and willingness to change one's opinion within the light of the latest evidence. Science has countless benefits, but the best is that it is the most fascinating, difficult, thrilling, and delightful endeavour that mankind has invented. If one considers the most progressive art created in the past for the development of humankind, it is always termed as "Science". Science education has a very important role to play within the all-around cultural and societal development of humankind and for evolving a civilized society. The essence of the scientific spirit is to think globally and act locally since the cognitive domain is universal while the fruit of science has some site-specificity. Science untangles the threads that make the tapestry of our living world. It tries to figure out how the threads merge in the overall ecological networks creating and maintaining humankind and also contributes to the thought process of the person. Probably, it may also be the spirit that may reverse the steady downward trend of our world's health and wealth. The teaching of science at

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different levels of school has the same objectives as other school subjects but additionally, science inculcates certain values peculiar thereto which no other subject can offer. But, besides satisfying the normal criteria for its inclusion in the curriculum like academic, cultural, spiritual, it also helps to develop scientific temper, scientific aptitude & scientific creativity among its learners. These qualities imbibed by the learner through science are of great value to a citizen living in the present age. For the advancement of culture and civilization in the right direction, the development of scientific temper and scientific creativity among the younger generation is now considered a vital task in our Education Policies. India gives great value to the development of "Scientific Temper" among its people, which was appropriately incorporated into the constitution. In the modern Indian context, the idea of inculcating scientific temper had been argued most forcefully by Pt. Jawaharlal Nehru, first prime minister of India, described it almost as a panacea for all the ills of India and the sine qua non for the development of India. He places two major arguments in support of giving such primordial importance to the task of imparting scientific temper in every Indian citizen. These are- (a) protection against the superstitious beliefs of the traditional Indian society (b) It is the only way of thinking through which Indians can achieve the scientific and technological capabilities that are critical for India's development as a developed nation. He strongly believed in reorienting Indian minds to adopt new ways of thinking and liberating the Indian mind from the clutches of superstitious beliefs which work against "Modernisation". He was explicit in stating that we need to bring a "new set of values" to Indian life. Development of "scientific temper" is at the core of any such effort to usher in the "new set of values". These ideas of Nehru have set the tone of all our educational policies thereafter, which consistently "extol" the worth of inculcating scientific temper as a core value in all children through an educational process. Successive governments also took necessary steps to establish scientific institutions that foster such a temper and lead to technical excellence in this country. According to the National Policy of Education, 1986 - "Science education is going to be strengthened, to develop within the child, well-developed abilities and values like the spirit of inquiry, creativity, the courage to questioning and our aesthetic sensibility. Science education programmes are going to be designed to enable the learner to accumulate problem-solving and decision-making skills and to get the connection of science with health, agriculture, industry and other aspects of daily life." Thus, our science education programmes should be such to develop the qualities of scientific creativity, scientific aptitude & scientific temper among its learners. These qualities or outcomes of learning must be achieved to develop a national moreover individual personality. It's quite evident that processes that occur as a part of formal school education have a significant role to play in the development or achieving of these outcomes. In view of utmost importance of these outcomes of science teaching, researcher has tried to study the scientific temper of high and low scientific creative senior secondary students.

**Concept of the “Scientific Temper”**

Scientific temper is the trait of an individual through which he/she scientifically interact with the external world. The scientific temper includes proposing problems, refining and defining them more productively, setting up hypotheses and their testing with the help of controlled experiments, thinking out new solutions, discarding personal opinion in the light of new evidence and suspending judgment in case of conflicting evidence, discarding even the principle of authority, if found necessary, and in short, distinguishing among scientific information, popular information and beliefs etc. In other words, it is the way of an individual's thinking critically and rationally along with the ability to question. He/she is not satisfied with the answer just because it is uttered by or with authority.

Since the scientific temper has many dimensions and these dimensions must be specified. To make a scientific selection of the dimensions of scientific temper, relevant and meaningful dimensions were chosen and sent to five experts in the field by the researcher for approval. Experts were unanimous (100 % approval) of the following dimensions of scientific temper:

- Scientific information
- Free from superstitions
- Reasoning and logical ability
- Problem-solving ability
- Cause finding ability
- Curiosity

**Concept of the “Scientific Creativity”**

There is no universally agreed definition of creativity. Since a person can behave creatively in numerous different ways. According to Torrance (1967) creativity is, “The process of becoming sensitive to problems, deficiencies, gap in knowledge, missing elements, disharmonies and so on; identifying the difficulty: searching for solutions, making guesses or formulating hypothesis about the deficiencies, testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results.” The definition of Torrance appears comprehensive and operational. He has emphasized the following aspects of creativity:

- Sensitive to problems
- Identification of difficulty or problem
- Formulating hypothesis as solution for the problem
- Testing or verifying the hypothesis
- Arrive at some conclusions or results

This definition is based on the process of reflecting thinking, while reflective thinking involves awareness plus divergent thinking.



Lobart (1994) defined scientific creativity as a dimension of sensitivity against scientific problems. Barron F.X. (1969) defined “Scientific creativity is the creativity in the specific field i.e. science”. It is the process of formulating hypothesis in scientific situation, testing and retesting these hypotheses and modifying and retesting again and so on.

The recent spurt in the critical study of human intelligence in general and creativity in particular, has culminated into the development of the Unified Theory of Intelligence by Prof. J.P. Guilford (1967), the Structure of Intellect (SI) model of which provides a sort of “Periodic Table” for the basic “elements” of the intellectual abilities of man. 120 such “elements” or factors have been envisaged, each having three properties, taken one from each parametric group of qualities – Operations, Products and Contents – related to mental activities Here, OPERATIONS means the type of mental operation required to solve a problem. CONTENTS indicate the form in which the problem and its solutions are presented. PRODUCTS are the ways in which the problem-solving outcome, or products of the solution, are organised.

Creative activity of man consists of fluent production of items of information from memory, flexibility in utilizing them, elaboration upon what is given, and some novel, original transformation of the information matrix. Creative process come under the Divergent Production category – that of generating various logical alternatives. Creative performances depended upon a rich memory – store of information and ultimate operation of Divergent production, and the product of transformation with frequent mediate process of Evaluation. While the Divergent Thinking abilities are generally considered to be responsible for creative responses, for scientific creativity, it is found that besides certain Divergent Thinking abilities, some factors under Convergent Thinking, Cognition and Evaluation categories are very essential.

The 29 SI-factors might be considered to be contributing largely to Scientific Creativity. Thus, scientific creativity is a multidimensional attribute differentially distributed among people and includes chiefly the factors of fluency, flexibility, originality & elaboration

### **Objectives**

- To compare scientific temper of high and low scientific creative boys studying at senior secondary science level.
- To compare scientific temper of high and low scientific creative girls studying at senior secondary science level
- To compare scientific temper of high and low scientific creative urban senior secondary science students.
- To compare scientific temper of high and low scientific creative rural senior secondary science students.

**Hypothesis**

- There is no significant difference between scientific temper of high and low scientific creative boys studying at senior secondary science level.
- There is no significant difference between scientific temper of high and low scientific creative girls studying at senior secondary science level.
- There is no significant difference between scientific temper of high and low scientific creative urban senior secondary science students.
- There is no significant difference between scientific temper of high and low scientific creative rural senior secondary science students.

**Delimitations**

The following are the delimitation of the present study – 1. The study is limited only to the senior secondary science students belonging to three administrative divisions of the Rajasthan State – Jaipur, Ajmer & Bikaner. 2. The study is limited to science students of boys, girls, urban and rural groups only. 3. The sample of the study is 600 subjects.

**Methodology**

The present study is aimed to study the scientific temper among High and Low Scientific Creative Students senior secondary science students. The following procedure has been adopted in the present study.

**Population**

The population of the present study comprises all senior secondary science students of three administrative divisions of the Rajasthan i.e. Ajmer, Jaipur and Bikaner.

**Sample**

A sample of 600 (300 urban and 300 rural) senior secondary science students had been selected randomly from three administrative divisions of the Rajasthan – Jaipur, Ajmer and Bikaner.

**Research Design**

Since the study has attempted to study the scientific temper among High and Low Scientific Creative Students senior secondary science students, the descriptive survey method was appropriate for the present study. To compare scientific temper of high and low scientific creative students in terms of sex and locality, first of all high and low creative group has been identified from collected raw data. To identify these groups, scores which are higher than one S.D. above the mean are considered as belonging to high scientific creative group and those which are one S.D. below the mean are considered as belonging to low scientific creative group. The mean and S.D. of scientific creativity of the sample (N=600) is found 72.17 and 21.04

130 Innovations and Challenges in Education, Humanities, Applied and Social Sciences respectively. Students who have scored above  $(M+1\sigma)$  93.21 are considered as high creative students and those who have scored below  $(M-1\sigma)$  51.13 are considered low creative students. After formation of high and low creative group of students, Analysis has been done on the basis of, boys, girls, urban & rural. The following tools have been used for the collection of data under the present study-

### Tools

In the present study the following research tools were used;

- Verbal Test of Scientific Creativity (VTSC) Dr. V.P. Verma 2006 and Dr. J.P. Shukla.
- Self-developed standardized tool of Scientific Temper

### Analysis and Interpretation

Comparison of significance of mean difference between scientific temper of high and low scientific creative boys studying at senior secondary science level.

**Table 1**

Type of Group	N	Mean (M)	S.D. ( $\sigma$ )	C.R. Value	Level of Significance	
					0.05	0.01
High Creative	54	117.89	16.22	1.66	Not Significant	-
Low Creative	86	112.86	19.11			

Table 1 reveals that the mean value of scientific temper of high scientific creative boy students is 117.89 and that of low scientific creative is 112.86. Standard Deviations of both groups are 16.22 and 19.11 respectively. On bases of mean difference and standard error, C.R. value has been calculated 1.66. The calculated C.R. value 1.66 is less than critical table value of C.R. (1.96) at 0.05 level of significance. Therefore, the difference between means of scientific temper of high and low scientific creative boy students is not significant at 0.05 level of significance.

Comparison of significance of mean difference between scientific temper of high and low scientific creative girl students studying at senior secondary science level.

**Table 2**

Type of Group	N	Mean (M)	S.D. ( $\sigma$ )	C.R. Value	Level of Significance	
					0.05	0.01
High Creative	36	104.05	15.45	2.1	Significant	Not Significant
Low Creative	16	113.75	15.35			

Table 2 shows that the mean value of scientific temper of high scientific creative girl students is 104.05 and that of low scientific creative is 113.75. Standard Deviations of both groups are 15.45 and 15.35 respectively. On bases of mean difference and standard error, C.R. value has been calculated 2.1. The calculated

C.R. value 2.1 is higher than critical table value of C.R. (1.96) at 0.05 level of significance and less than (2.59) at 0.01 level of significance. Therefore, the difference between means of scientific temper of high and low scientific creative girl students is significant at 0.05 level of significance and not significant at 0.01 level of significance.

Comparison of significance of mean difference between scientific temper of high and low scientific creative urban students

**Table 3**

Type of Group	N	Mean (M)	S.D. ( $\sigma$ )	C.R. Value	Level of Significance	
					0.05	0.01
High Creative	36	119.78	18.83	0.46	Not Significant	-
Low Creative	74	118.08	16.83			

It may be observed from table-3 that the mean value of scientific temper of high scientific creative urban students is 119.78 and that of low scientific creative is 118.08. Standard Deviations of both group are 18.83 and 16.83 respectively. On bases of mean difference and standard error, C.R. value has been calculated 0.46. The calculated C.R. value 0.46 is less than critical table value of C.R. (1.96) at 0.05 level of significance. Therefore, the difference between means of scientific temper of high and low scientific creative urban science students is not significant at 0.05 level of significance.

Comparison of significance of mean difference between scientific temper of high and low scientific creative rural students

**Table 4**

Type of Group	N	Mean (M)	S.D. ( $\sigma$ )	C.R. Value	Level of Significance	
					0.05	0.01
High Creative	54	107.41	14.19	2.18	Significant	Not Significant
Low Creative	28	99.57	16.09			

Table 4 shows that the mean value of scientific temper of high scientific creative rural students is 107.41 and that of low scientific creative is 99.57. Standard Deviations of both groups are 14.19 and 16.09 respectively. On bases of mean difference and standard error, C.R. value has been calculated 2.18. The calculated C.R. value 2.18 is higher than critical value of C.R shown in the table. (1.96) at 0.05 level of significance and less (2.59) at 0.01 level of significance. Therefore, the difference between means of scientific temper of high and low scientific creative rural science students is significant at 0.05 level of significance and not significant at 0.01 level of significance.

**Major Findings of the Study**

- The mean difference between scientific temper of high and low scientific creative senior secondary science boy students is not significant at 0.05 level of significance.
- The mean difference between scientific temper of high and low scientific creative senior secondary science girl students is found significant at 0.05 level of significance.
- The mean difference between scientific temper of high and low scientific creative urban senior secondary science students is not significant at 0.05 level of significance.
- The mean difference between scientific temper of high and low scientific creative rural senior secondary science students is found significant at 0.05 level of significance.

**Conclusion**

Low scientific creative girl students have significantly higher scientific temper in comparison to high scientific creative girl students but scientific temper of high and low scientific creative boy students does not differ significantly. High scientific creative rural students have significantly higher scientific temper in comparison to low scientific creative rural students but scientific temper of high and low creative urban students does not differ significantly.

**Educational Implications**

The observations and conclusions of the present study have implications for educators, teacher educators, stakeholder, researcher personnel, curriculum designers, and, last but not least, students. It would be useful to present some of the current study's educational implications here-1. Scientific temper and scientific creativity is a way of living and a major outcome of science teaching and learning. The researcher, in the present study, has developed a standardized test for measuring the scientific temper of the students. This test may be useful in measuring students' scientific temper of senior secondary science students of age group 15-20 years. It will be better to organize various co-curricular activities such as science fair, science exhibitions, scientific debate; science club etc. and use of inductive inquiry training model, concept attainment model, project method, problem solving method, Brain storming and programme instruction in teaching rather than conventional method of teachings. Use of teaching-learning materials, ICT and emphasis on learning by doing may be useful in fostering scientific temper among science students. Science is the product of creative thinking. The development of creative genius of our youth should be of prime importance in our education system. Scientific information, reasoning & logical ability and cause finding ability shows slightly upward trend with the increase in the scientific creativity of the students. Use of ICT will be possible to foster scientific temper and scientific creativity among students.

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## **Challenges Vis-à-Vis Roles, Inter- Linkages and Significance of Non- Farm Sectors in Boosting Rural Economy of India: A Responsible Innovation in Doubling the Farmer's Income**

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Jyoti Singh\*\*

### **Introduction**

#### **The Scenario of Rural Non-farm Sector**

The rural non- farm sector has great importance to the rural economy because its production linkages and employment effects have major role to play in it by providing income to rural households which represents a substantial and sometimes growing share of rural incomes (Davis 2003). Agriculture is important and principal activity of poor households in rural regions (; Haggblade, Hazell and Reardon, 2007), and non-farm incomes play a key role in rural economic transformation (Rothstein, 2015). With rapid process of urbanization in India and other developing transition countries, poverty predominantly prevails in rural phenomenon (IFAD, 2001). It is well known that, structural economic transformation of the country leads to economic development, as result the share of the farm sector in the GDP of country declines (Chenery and Syrquin, 1975). The estimates across countries vary where population with rural non-farm income portions across continents oscillating between 30 and 45 percent of rural income (Reardon *et al.*, 2001). In the same phase, Furthermore, evidences from developed countries advocates that diversification increases as economies grow (Haggblade *et al.*, 2005). Surveys indicate rural non-farm income contributed to 32 percent in Asian countries (FAO, 1998). Therefore, there is strict need to double the farm income of farmers with the present condition aim at advancement with sustainability. The importance of Non-agricultural wage employment has the exception in African countries, where self-employment has a prominent share in income and rural labour markets are thin (Carletto *et al.*, 2007).

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### **Scope for Perceived Feasibility of Innovation in Non-Farm Activities**

Since 1990, recognition of non-farm activities and their importance as well as interlinked with the agricultural sector has paved the way for two thirds of smallholder youth farmers to poverty eradication and creation of remunerative employment outside farming by looking in agribusiness, industry and services as scope and alternative (Yumkella *et al.*, 2011). Boosting the rural non-farm economy can be the main alternative in the absence of proper agricultural wage labour market. This comprises of agro processing, product manufacturing, commercial activities, transportation, adding the utilities, tourism and other services (Castillo and Sodergren, 2015).

### **Perceived Barriers**

Countries in which employment data population censuses are present, reported rates are most likely underestimated because they only explain for rural non-farm activities, which are primary occupation. Rural non-farm activities are only a secondary or even tertiary source of income in some households which go unreported in census data. Although nationally representative surveys in countries, the available evidence on rural income shares remains very less. The most of cited cross country comparisons as reports by FAO (1998) and Reardon *et al.*, (2001) have been the thing of past time and are based on non-comparable surveys in different constituent countries (Lanjouw and Feder, 2001). Different methodologies to define what constitutes rural is present in different countries and government definitions should not to be comparable across boundary of countries, as result differences in results may be considered in cause and effect relationships. The comparison bias underestimates the relative status of rural non-farm activities to the economy as unabridged (de Ferranti *et al.* 2005). The rural non-farm income in the economy is escalating continuously with probability to increase its share in total rural income in the future (Lanjouw and Feder 2001). There have been contradictions observed among developing countries that poor obtain a lower share of income from rural non-farm activities than the non-poor youth (Isgut, 2004), contrary to the role of rural non-farm in lowering the poverty as they provide an alternative to small landholdings (Sadoulet and Zhu, 2005). The contribution of rural non-farm activities by income level of youth varies among states of India (Lanjouw and Shariff, 2002).

### **Driving factors for rural non- farm sectors**

Distress-push diversification drives the majority of the rural poor into rural non-farm employment and income generating activities (Bezemer and Davis 2003). It has importance for policymakers to distinguish between distress-push and demand-pull since each may require different policy responses (Davis and Pearce 2001). The former requires policymakers to develop apt social safety net and interventionist policies to alleviate the short-run negative effects that from time to time accompany this type of diversification (for example, over-rapid urbanisation, negative



environmental impacts etc.). Where demand-pull factors drive the process of diversification, thus policy-makers seek to deliver a suitable “enabling environment” to support the development of the rural non-farm economic activities and sustainable rural livelihoods.

### **The composition of rural non-farm income in Indian economy**

Three broad ‘stages’ of transformation of the rural economy are categorized by FAO. The first stage includes both production and consumption linkages between the farm and non-farm sector, second stage has a lower share of households direct dependent on agriculture along with higher rural-urban links. The third stage witnesses robust links with the urban sector, employment and income generated in sectors which have little or no relation to agriculture (FAO 1998). Entry barriers of high returns sections which prevent participation of vulnerable groups may result lack of capacity to make investments leading to relative scarcity of low capital in rural non-farm sector (Reardon *et al.*, 2000).

### **Share of Income of Rural Non-farm Sector from Income Generating Activities**

The share of wage employment in total employment shows positive relation to the level of GDP, and self-employment’s share in total income tends to decline (Carletto *et al.*, 2007). In most of the countries, the largest share of income is derived from off farm activities, and most of households have diversified sources of income. Diversification exceeds the specialization, although households of most countries shown very low levels of specialization in non-agricultural activities (Davis *et al.*, 2007).

### **Assess of Income to Rural Non-Farm Women Youth**

The diversification at the farm household level among women has been categorized in to human capital characteristics, nature of the farm and farm business and external environment by OECD (OECD 2009). Due to different income profiles and employment opportunities between rural men and women, an economic risk prevails to women (Holmes & Jones, 2010). A study in indicated that, female youth were engaged and initiated in alternative activities more often. The employment of women in agriculture is as high as 70 per cent of employed women in Southern Asia (FAO 2011). In compliance with several studies towards high-value chains, it was found that male-headed households had a much higher chance to assess farm contract than female-headed households (World Bank 2007). In the vicinity of rural areas and municipalities close to those of urban areas, the average income and standard of wellbeing is comparatively higher (OECD 2008). The advancement in Information and communication technology reduced the transaction costs of money transfer, and upsurge the coordination ability of women entrepreneurs in developing countries (Jacobsen, 2011). Theirs organizations play a vital role in the social development and economic empowerment.

### **Migration of work-force**

The main alternatives available to the youth are thus migration to urban areas or engage in non-farm activities in rural areas as labourers (Lanjouw and Lanjouw, 2001). Lack of availability of sufficiently productive and remunerative opportunities makes the poor households to pathetic condition if they even wish to involve in rural non-farm sector (Egyei, Harrison and Adzovor, 2013). Contrarily, Migration incomes are generally much less than income obtained from rural non-farm activities. Studies suggest that local rural non-farm earnings in least developed countries are concentrated around 2 to 5 times overall migration income, which can be as much as 10–20 times in agriculturally potential areas (de Haan and Rogaly, 2002).

### **Source of income through non-farm activities**

Due to the use of family labour where the smallholder agriculture predominates, the prospective for wage employment in agriculture are generally limited because of availability of seasonal labour. This condition is applicable to subsistence and semi-subsistence-based agriculture systems. Farm wages also are lower than in a non-farm sector, which echoes more skill requirements, but this is not the fact (Lanjouw, Quizon and Sparrow, 2001). Increasing opportunities for income diversification can be important engine of growth for urban surrounding areas (Reardon *et al.*, 2007). Rural Non-farm employment opportunities for youth depend on close proximity with urban areas; the agricultural incomes also have the same corresponding relation with it (Ruben and Pender, 2004). As result of which non-farm income opportunities starts declining with increase in distance from urban areas. These differences in economic opportunities produce a similar pattern of wage levels, with aggregations around cities. Across the given area, the wages start declining as transport costs increase concurrently (Deichmann, Shilpi and Vakis, 2009).

### **Structural Transformation of Rural Non-Farm Category**

Structural transformation demands a progressive shift of resources from low-value and low-productivity to higher-value and higher-productivity activities, along with traditional agriculture to manufacturing and services. Thus diversification acts as which act as a stepping stone between agriculture and urban economic activities (Hazell, Haggblade and Reardon, 2007). The transformation takes place in three stages (FAO, 1998). In the first stage, in which agriculture remains as central source of rural employment, most of rural non-farm activity among youth is prevalent in the rural areas with limited dependence on rural-urban links. In the second stage of transformation, non-farm activities are more diversified, encircling activities such as tourism, mining and services which are linked with agriculture and rural-urban links are more important at this stage (Yumkella *et al.*, 2011). The third stage of transformation of rural non-farm sector is evident as an intensification of the characteristics which differentiate the second stage from the first stage (Otsuka, 2007).

### **Diversification of Rural Economy**

The barrier to structural transformation and poverty eradication in rural area is the incongruity between the need for diversification of income and the opportunity to diversify, at the household and the community level. It can be said “meso-paradox” at the level of youth community (Reardon, Berdegúe and Escobar, 2001). The non-farm self-employment provides greater welfares to the non-poor than those of poorer households because non-poorer households take advantage of their greater resources, better education and greater access to infrastructure and obtain more remuneration (Paternostro and Pierre, 2004).

### **Motivation for Entrepreneurship**

The main motivations for non-farm activities among the rural people could be many factors namely. “Entrepreneurship by choice”, refers to the activities considered by the rural youth as rewarding by the attraction of remunerative opportunities to increase the incomes. It has a good scope for households with good asset legacies, particularly land and infrastructure, as a scope to enter markets by crossing grater barriers (Winters *et al.*, 2009). They are benefited under changing contexts by exploiting complementarities between entrepreneurial activities (Tacoli, 2003). Other scopes can be “entrepreneurship by necessity” by the impulsion of scarce farm incomes, either as a temporary benefit or on a long-term basis to meet the consumption needs. Nonfarm income can be a reserve where particularly farming income are insufficient (Dabalén, Paternostro and Pierre, 2004). “Entrepreneurs by necessity” are those little educated households which have little or no land and livestock or other material resources. As Consequence, these youth are engaged in those activities which have low entry barriers results the low returns commensurately. The areas with antagonistic agricultural conditions and large distance from urban markets yields large income diversification which can rationally be characterized as desperation-led (Barrett, Reardon and Webb, 2001)

### **Risk Management**

Risk management can be major motivation for income diversification of the household (Ruben and Pender, 2004). Agriculture being one of the riskiest sectors of economic activity, witnesses major shocks to output as well as prices. Insurance facilities are sternly lacking in rural areas. Limited access to markets in rural areas surges price volatility for poorer households. These households have less savings or saleable assets and bare survival even before shocks can be questioned under these conditions (Holden, Shiferaw and Pender, 2004). This leads to distress sales of livestock and land, from which they may recover only substantial amount of money to pay back. Nutrition, health and education are severely affected leading to carryover effect from generation to generation. It creates downward spirals of unending impoverishment among them (World Bank, 2007). The coping strategies can subject to seek income from multiple sources having different risks, even where the returns to these activities are considerably low (Barrett, Reardon and Webb, 2001).

## Conclusion

There is urgent need to double the farm income of young farmers with the present condition aim at advancement with sustainability. The rural non-farm economy should be boosted which can be the main alternative in the absence of proper agricultural wage labour market. This can be achieved by strengthening the nationally representative surveys in countries. The diversification of the farm household should be promoted among women activities and sensitization of farm and farm business. Accompanied with it, entrepreneurship should be promoted and strategies should be formulated to cope up the risk in establishing the ventures. The barrier in structural transformation and poverty eradication in rural area should be controlled by better education and greater access to infrastructure. The excess migration should be under checked by providing sufficiently a productive and remunerative opportunity makes the poor household. Thus the prospects of rural non-farm activities should be handled judiciously to yield rural structural transformation and alleviate the poverty. The rural non-farm economy should be boosted to be the main alternative in the absence of proper agricultural wage labour market. Sustainability could be ensured by analysing forward-looking and speculative indicators rather than only objective indicators. Comparative analyses of different case study experiences should be promoted.

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## **Tailoring Skills and Health Hazards Related with this Job with Special Reference to Kota City: A Case Study Approach**

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### **Introduction**

Technical skills and professionalism are pertinent in the practice of industrial design. It is perhaps, impossible to conceive of a modern nation without relying upon the characteristics of professional behavior of Industrial Designers, artisans and craftsmen as indispensable to community growth and development. (Swindells, Atkinson and Sibley, 2001). It is impossible to conceive a socio-economically viable society without reckoning on the economic contributions of people who are into the practice of the skills of their vocations or trades. Though, tailoring and fashion skills originated from antiquity and represent a popular value of mankind, the practices of tailoring and fashion skills transform as values change in society.

India is a country well known for its culture, values, and designs, India is ranked second to China when it comes to garment production globally. Indian textile industry has been in existence since the Vedic period and its one of the oldest industries and the largest contribution to India's export. ([www.africanexport.com](http://www.africanexport.com)). In an even more globalized era, the garment industry is radically changing as consumers are demanding and hoping even more personalized products (Rikhil Nagpal *et al.*, 2016). The elementary and foundation process of the garment production is sewing; it is the backbone of the course of production (Vedat Dal Mehmet Kayar and Engine Akcagun, 2014). Tailoring is a kind of occupation which comes under unorganized sector. The main activities performed by the tailors at their work station are dealing with the customers, taking measurement of the customers, cutting of the fabric, stitching of the fabric, finishing of the stitched garment, ironing to the stitched garment and inspection of stitched garment.

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Tailors are at a higher risk of muscle pain because of postural discomfort involved in their work. This problem tends to increase with the years of employment. Even though many technologies have been developed in the textile sector, but tailors are still using the foot treadle and hand wheel sewing machine. These machines work on manual power and have been the cause of muscular pain in body parts. The tailor's job involves monotonous, highly repetitive tasks performed in a sitting working posture with upper back curved and head bent over the sewing machine. The work is visually demanding and requires a high degree of concentration and accuracy.

Newer generation is the one who is supposed to take over the baton from the older generation. With better education and awareness there are more and more employment options available. So, the researcher was keen on finding whether the younger generation of the tailors were interested in following the same profession as their parents or not.

Hence the objectives of the study were following:

- To analyse the task performed by tailors while working
- To find out health problems faced by tailors
- To find out the interest of the next generation of tailors in continuing the tailoring job

### **Review of Literature**

**Priya Dwivedi (2013)** conducted a study on "Job strains and Health problems among Tailors". The study aimed to assess the job strain and health problems among tailors. The study sample comprised of 160 tailors in Lucknow district. Questionnaire schedule was used to assess job strains and health problems. The results revealed that the majority of shop tailors reported high job strains. These strains might be reduced through a proper training programme, well designed stitching equipment and electronic sewing machines.

**Upasana and Deepa Vinay(2017)** conducted a study on "Work posture assessment of tailors by RULA and REBA analysis" to evaluate the various tasks performed by tailors, and work postures adopted by them, while operating sewing machine. The study was conducted on 60 male respondents. The result of postural analysis by RULA and REBA score indicated that more than 65%, 60% and 58% of the respondents were under high risk when performing ironing, stitching and cutting activity at the work place.

**Dr. Neeta A. Nagori(2017)** conducted a study on "A study on the functioning and problems of tailors of Gandhidham and Adipur region of Kutch". The researcher identified and described certain factors such as selection of needles according to weight of fabrics, brand of sewing machine, brand of needle, cost of needles, needle size, breaking of needles in a month, stitch problems and musculoskeletal pains faced

by tailors. In this study tailors were suggested to use organ needles as its price is comparatively more but it breaks very less and ultimately it will be profitable for tailors as it save time as well as minimizing ergonomically problems, such as eye-strain, increases productivity leading to proper functioning.

**Sunday Roberts and three others(2017)** conducted a study on “Technical Skill and Professional Practices of Tailors and Seamstress in Abeokuta Metropolis” with objectives of examining consumer’s opinion on sewing skill, investigation of tailoring facilities and also investigation level of interest of the youth in the vocation. Questionnaire schedule was used to elicit data from respondents. The respondents comprised of all registered tailors, seamstresses and end users of tailored products in Abeokuta, Ogun State. Results showed that both tailors and seamstresses are skilful and that tailors in Abeokuta have adequate facilities to work with.

**Reis Benilde and two others(2013)** conducted a study on “ Tailoring in contemporary times: Handmade tailoring and Industrial tailoring a study case” to explore, question and analyse the differences between handmade and industrial tailoring. The growing worry with the fact that handmade tailoring may be disappearing was the motivation to research the evolution of menswear, since it developed side by side with both handmade and industrial tailoring through times. It can be concluded that there is a market for both of these clothing options, each with their own specific characteristics, allowing them to coexist without harming each other.

**Arasinah, K and four others(2014)** conducted a study on “Technical Skills, knowledge competences and expected changes in the clothing industry” to determine the competency of technical skills, knowledge and expected changes in the apparel industry within the next 10 years. Interview results found that technical competency that is most preferred are drawing, designing, sewing techniques and computer skills. The study found that knowledge of the preferred competency is the latest trends, knowledge in fashion and knowledge of business strategy.

### **Methodology**

This study was a qualitative case study approach. A case study describes and analyses in detail a phenomenon or a social unit as a group. Each case has its boundaries and limitations of researchers asking specific questions on the number of participants to be interviewed. The respondents were three master tailors from Kota district. The selection of the respondents was based on their willingness in providing the information needed to answer the questions. The selected respondents have more than twenty years of experience of cutting, stitching and finishing the ladies garments.

Purposive sampling was used in the selection of the respondents. Thus, the respondents were investigated, using interview cum questionnaire schedule. Questions formed were open ended so that respondents can elaborate and answer in detail. The researcher has conducted a semi-structured questionnaire schedule by

presenting three aspects of research questions, which were, functioning of the tailors, health problems faced by the tailors, and interest of the next generation in taking up tailoring as their profession. The interview cum questionnaire method is the one that is most often used in qualitative research data.

De-limitations of the study were:

- Study was limited to tailors stitching ladies garments only.

## Results and Discussions

### • Respondent 1: Ikram Hussain

Mr. Ikram Hussain was a master tailor, residing in Kaithoon. He was of about 50 years old. He was a muslim and used to speak Hadoti language. His wife was a weaver of Kota Doria saree, but now she was not working due to health problems. Ikram Hussain had two daughters and one son. All his children were married. His elder daughter was also a weaver of Kota Doria as her mother, and younger daughter had done B.ed and she was trying for government job. Ikram Hussain's son had studied till 12<sup>th</sup> standard and owns an e-mitr computer centre. His daughter-in-law had studied till 10<sup>th</sup> standard, earlier she was also Kota Doria weaver, but now because her mother-in-law was not keeping up well, she had to stay at home and take care of her health.

Ikram Hussain could stitch all the ladies garments such as blouse, lehenga, kurti, gown, salwar suit, etc. He mainly used to take measurements of the customers and do the cutting. Sometimes he used to do stitching also. He did not used to do ironing and finishing of the garments. He used to work for nine hours daily. He was working in this field for more than 30 years. Usually, he used to design customer's garment according to their choice but if they leave it on him, then he used to design it according to himself.

Ikram Hussain was using umbrella machine but according to him it was not as comfortable as Juki machine. His job was not target based but according to him, "*kaamdikhna to chahiye, kam se kame k din mein do se teen piece to bannechahiye.*"(work should be visible, at least I must prepare two to three pieces in one day)

During the time of peakseason he used to do overtime, work on Sundays, take work at home, sometimes cannot have meals on time and was not able to take proper rest and sleep also. He used to increase his speed and complete more and more work. He also said that he used to take smaller tea breaks. He did not had any other source of income apart from his work. He was satisfied with the remuneration he used to get for his work and he used to get salary hike once in a year.

When inquired about the health problems which he used to face while working, he only had eye sight problems. He was totally satisfied with his work environment in

terms of lighting, ventilation, temperature and spaciousness. When enquired whether he gets any type of help from his employer for his health problem he says, “*agar kaamkartewaqtchot lag jaye to vo doctor ke pass le jakarpatti kara dete hain aur dawaibhi le dete hain.*”(if I get hurt while working, my employer takes me to the doctor, gets the first aid done and also buys medicines for me.)

When Ikram Hussain was around 15-16 years old, he went to RamgunjMandi with family, there he showed interest in learning stitching to a shopkeeper, he agreed and even offered to give me food and let me stay there. He learned for 6 months there. Ikram Hussain’s father was a Kota Doria weaver, but he did not continued that work because of lower wages. He had neither trained his son nor his daughters in stitching. But, he had trained many other people while working, such as, if there is any other tailor who knows how to stitch but doesn’t know how to cut so he used to teach them. Many a times ladies also come for learning. According to him, the usual age group is between 18-30 years. He is the only one in his family to be in this profession.

When enquired whether he had got any recognition for his work so far, he told that once he had stitched garments for Pooja Rajvanshi’s(local designer) exhibition, she had invited him over there, but he could not go their due to some other work.

On the choice of profession of his son, he told that his son was interested in computers and he wanted to change with time as it had better income. He also told that this way his son was self-employed and not dependent on anybody else. Ikram Hussain was happy on the choice of profession of his son because this had better income and physical hard work was not required.

- **Respondent 2: Gulam Ali**

Gulam Ali was a master tailor, residing in Kaithoon. He was 58 years old. He was a muslim and used to speak Hadoti language. His wife was a Kota Doria weaver. He had two son, elder one was married and had one son and daughter. His elder son had studied till 10<sup>th</sup> standard and he was also working with his father as a master tailor. Gulam Ali’s younger son had studied till 12<sup>th</sup> standard and he was working as a mechanic. Gulam Ali’s daughter-in-law had done B.ed, she was not working because she had small kids. Gulam Ali could stitch all the ladies garments such as suits, blouses, gowns, indo-western dresses, etc. He usually does cutting. Sometimes he takes measurements of the customers and does stitching. He did not used to do ironing and finishing of the garments. He used to work for 9-10 hours daily. He was working in this field since he was around 10 years old. So, he had experience of about 50 years. Usually, he used to design according to customer’s requirement but if they leave it on him, then he used to design it according to himself.

Gulam Ali used to use Rima machine, and he was comfortable using it. His job was not target based, but he used to get paid according to work he did. So, he tried to do more and more work. During the peak season, he said that he tries to do more and

more work, he even works on Sundays. He also stated that due to customers rush he keep standing a lot so his legs also pain. He did not had any other source of income apart from his work. He was satisfied with the remuneration he used to get for his work and he used to get salary hike once in two years.

When inquired about health problems which he used to face while working, he had muscular pain in legs and shoulders. He also had eye sight problem, but according to him it was due to age. He was totally satisfied with his work environment in terms of lighting, ventilation, temperature and spaciousness. When enquired whether he get any type of help from his employers for his health problems he said, that if he gets hurt while working his employer takes him to doctor, but as such there is no insurance policy, which he thinks should be there.

When Gulam Ali was young he had learned tailoring in Kaithoon in a shop. Then he had also learned tailoring in Kota for some time. Gulam Ali's father was a weaver of Kota Doria, but back then wages for weavers were very less, so he chose to be a master tailor. He even opined that now tailoring has a very tough completion from readymade garment industry. He even said “ *aajkal to karigarmilna bahut mushkilhogayahai, kyunki koi ye kaamkarna hi naichahtahai, koi padhlikhgayahai, to kissi ko kuch aur kaamkarnahai*”(nowadays it is very difficult to find karigars because younger generation does not want to do this work as they are educated). Gulam Ali had trained his elder son in tailoring and he is also working with him, but his younger son was not interested so he didn't trained him. Apart from his elder son, he had not imparted training to anymore, as his employer doesn't allow. Gulam Ali and his elder son are only people in this profession from their family.

Gulam Ali have not got any recognition for his work so far. When inquired about the choice of profession of his children he said that earlier his elder son did welding work, but due to that work he had developed eye problem, so he had left that work and started doing tailoring. But his younger son was not at all interested in tailoring work, so he chose to be a mechanic. Gulam Ali was happy on the choice of profession of his son and he said, “ *jabtabacchekhush hain main bhikhush hu.*”(if our kids are happy, we are also happy)

- **Respondent 3: Jhakir Hussain**

Jhakir Hussain was a master tailor, residing in Sanjay Nagar area of Kota. He was 46 years old. He was a muslim and used to speak Hadoti language. His wife was 40 years old and she was a housewife. He had two sons and one daughter. His elder son had studied till 8<sup>th</sup> standard and did the work of making *lakh ki churi*. His younger son also had studied till 8<sup>th</sup> standard and he works in a bakery. Respondent's daughter was pursuing 12<sup>th</sup> standard.

Jhakir Hussain could stitch blouse, suit, gown, ladies western wear, coats and jackets. In his words he was an “Allrounder”. He did all the work like taking

measurements, cutting, stitching and ironing. He didn't used to do finishing because according to him it took lots of time to finish ladies garments. He used to work for around 11 hours daily. He had experience of around 35-40 years in this field. He said, "*jab 1988 meindange hue the, tab saat-aathsaal ka tha, us samay hum Kaithoon mein rehte the, dangokebaad hum Kota aa gae, tab se silai ka kaam hi karrha hu*" (When there were riots in 1988, I was seven-eight years old, after that we shifted to Kota from Kaithoon, then I had started learning stitching). He used to design according to customer's requirement and choice but only when customer was regular and had asked him to design he does it according to him.

Jhakir Hussain used to use umbrella machine, but he wanted to buy electronic machine of Juki brand, because it had good speed so he could do more work on it. His job was not target based.

When inquired about the challenges which he used to face during the time of peak season he said that he used to work overtime. He even added that, "*Sunday ko bhi kaam karte hain, lagerehte hain kolhuke bail ki tarah, zindagi jeene ke liye. Mere ustaad kahan karte the, ek baat yaad rakhna, kaam chalta hai to darji bhookha marta hai, aur jab nahi chalta to uske bacche bhooke marte hain.*" (We work on Sundays also, my mentor used to say, if tailor has work then he remains hungry, (because of work) and if he doesn't have work his kids have to remain hungry). From this statement one can understand the hardships faced by the tailors and their families.

Respondent was satisfied with the remuneration he used to get for his work. He used to get salary hike once in a year. He did not had any other source of income.

When inquired about the health problems he used to face while working, he had muscular pain in legs and weak eyesight. He was satisfied with his work environment in regards to lighting, ventilation, temperature and spaciousness. On any help from employer for his health problems, he said that, in case he gets hurt while working his employer takes him to doctor. Though, he was happy that till now he had not got hurt while working.

Jhakir Hussain was basically from Kaithoon and he had learned tailoring from there only. His ustaad's (mentor) name was Latoorustaad. Respondent's father was a daily wage labourer, he used to work at construction site. Jhakir Hussain said, "*mere walid ne hi mughe bola ki silai seekh le, taki mughe dhoop mein kaam na karna padhe*" (my father wanted me to learn stitching, so that I don't have to work in sun). Neither his sons nor his daughter was interested in learning stitching. He had taught stitching to both girls and boys, but according to him boys learn for working and girls don't want to work professionally, they wanted to learn so that they can stitch their own garments. In his family, apart from respondent his elder brother was also a master tailor.

When inquired about any recognition he had got for his work he had said, “*ye to seth logon ko miltahai, hummenahi. Ek baar Meenal Residency(resort)mein ek fashion show huatha, kapdehumne sile the, par hum nahigae, humaresethgae the.*”(this is for owners, once there was a fashion show in Meenal Residency, for which I had stitched clothes, but I did not go there, my owner had gone)

His elder son used to make *lakh ki churi*, because this was their accessorial work, “*hum jati se lakheri hain, ye humarakhandanikaamhai*”(We are lakheri by caste, this is our accessorial work). His younger son used to work in bakery, because according to him this work doesn't require much physical labour. Respondent wanted his daughter to study as much as she wanted to. He wanted her to study fashion designing. In his words, “*kyunkikapde to main ek se badhkar ek banaleta hu, par mere pass koi degree naihain, isiliye main aagenahibadh paya, 1992 mein designer Ritu Beri mughe Mumbai bularhithi, par gharwalo ne jane nahidiya, kyunki Mumbai bahut door tha. Hunarto bahut hai, par hunar ki kadarnahihai*”(I can make any kind of clothes, but I don't have any degree, that is why I could not be successful in my life. In 1992 Ritu Beri was offering me job in Mumbai, but my family didn't allow me to go, as it was very far away. I have lots of talent, but nobody gives importance to talent). Overall he was satisfied with the choice of profession of his children.

### **Conclusion**

The study shows that all the three respondents were muslim. Wives of two respondents were Kota Doria weaver. Hence we can say that their family background were related to one or the other skill. All three respondents could stitch all the ladies garments. Mainly respondents were involved in taking measurements of the customers and cutting of the garment. All of the respondents had started working when they were around 12-15 years old. Two of the respondents were using umbrella machine but they wanted to use electronic machine of Zuki brand. One of the respondent was using machine of Rima company and he was satisfied with it. None of the respondent had target based job. All of them used to work overtime, took work to home and even worked on Sundays at the time of peak season.

In regard to health problems, eye sight was the common problem faced by all three respondents. Apart from this two of the respondents faced muscular pain in legs. None of the respondents were given any kind of health benefits or insurance from their respective employer.

All three of the respondents had learned stitching from tailors when they were young. Two of the respondents had stated that their ancestral profession was Kota Doria weaving but when they were young, wages for weavers were very less, so they had opted for this profession. Only one son of one of the respondent had learned stitching from his father and was following it as a profession. But all the respondents are satisfied with the choice of the profession of their children.

Skill is important in the practice of tailoring. The earliest appearance of sewing resided in the quest of man to cover his body and to feel some comfort. Clothing remains ever important for protection, adornment and for fashion. It is apparent that tailors are relevant in the accomplishment of these social values and it is discovered that not much education is required to foster very well in this skill.

The result of this study reveals that tailors are skilled, competent and devoted to their work. In spite of this, it is observed that the competencies and present skills of tailors of Kota city may lack sustenance and the trade may suffer continuation as a result of youth showing decreasing interest in the tailoring work. The reason for this could be better education, better employment opportunities, less wages or no interest in this profession.

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## **Changing Trends in Education: Making Way for Academic Revolution**

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Ms. Sarah D'souza\*

### **Introduction**

It is coming to a point that education is being redefined and reimagined. With the break of COVID -19, unprecedented times have pushed us to seek more survival skills in order to be flexible to cope with the challenges we are facing. The society and the professional world continue to evolve and change with the growth of technology and the beginning of the Fourth Industrial Revolution. This, in turn, has had a tremendous impact on the educational sphere, leading to a number of growing trends in the world of education. For educators to properly engage their students, they must remain abreast of these latest changes and key factors that affect learning in the classroom. Their understanding of these trends can help them create more effective learning environments. We are part of an ecosystem that is getting more dependent on technology, virtual learning is the new normal and hybrid models of teaching and learning are no longer a theory but rather developing into a sustainable model for long term deployment. Students now have to be encouraged to 'learn how to learn', instead of being asked to memorise facts and figures. Problem solving is no longer an additional skill to acquire, rather a basic necessity. Educational institutions across the spectrum need to develop a sustainable process to ensure they are able to prepare the leaders of tomorrow. Digital trends have changed the countenance of education giving prominence to creation and creativity so as to neutralize education standards.

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It is as if students are trying to find their own unique style by exploring various digital tools that enable them to learn across time and space. Teaching has extended way across classroom interactions. Certain factors which have contributed to the changing trends in education. Massive online courses are modality of teaching which has propagated throughout higher education in such a rapid form that its quality and merit is largely unknown and it's still evolving. In today's age, education has become a need as important as food and water. With expenses increasing by the second, it has become a necessity for the middle classes to have both the parents as earning. An added income is a blessing. As a result, every adult is looking to seek employment. However, the education department has not been so helpful so far. But there are many changing trends which promise a hope for a better future. Orthodox families are not inclined towards higher education because in today's age higher education in India does not guarantee employment. There are however, other options which education opens up.

New modes of learning are coming to the fore in the Indian education system. The traditional classroom structure has been modified a little. Students are encouraged towards a project-oriented mode of studying. This project-based education guarantees that students take the maximum out of the learning process. Although this change has still not been fully developed, but steps have been taken to help students think learn and analyse things independently. They are encouraged to become independent learners. And that should be the crux of education.

While steps have been taken towards a new mode of education, there is still a long way to go. The current faculty of teachers needs to become open to new modes of learning. As long as they will be resistant towards these new modes, change will be next to impossible. As times change so should the mode of learning. The teacher is no longer the authority figure who is always right. The teacher is now a guiding figure whose main role is to guide children towards a bigger and brighter future. If new methods of learning are made available to the whole population of students, then the future will be in the hands of a literate, smart and intelligent youth. This chapter is going to explore the new and arising trends in Education.

### **Modern Trends in Education**

- **Digital Responsibility**

It is absolutely vital that educations be conscious and trained in the in ethical use of digital technologies, and for its utilisation in a safe and responsible manner. This is crucial to ensure students understand the ethos of digital citizenship and also are able to think beyond themselves and to understand their responsibilities to others and how they can improve their communities. The vision behind digital responsibility as a trend in education is to connect students as global citizens through ethical technology.

- **Blended Learning**

Because to the quick change in Information Technology, it is why blended learning has become more required. Blended learning consists of both traditional & technological methods and is a great way to enhance time and effort towards gaining knowledge limitlessly beyond the classroom, as well as merits of learning with the instructor in real time. The emerging trend is numerous colleges are now incorporating blend of traditional and technology interventions in the teaching learning process.

- **New Roles of Teachers**

As we see new shifts in education, we cannot look pass the new ways educators are teachers giving knowledge to learners. While Students may be faster to adapt to the new dynamic, but are the educators and Institutions ready to do the same? It will be necessary that teachers should be fine teaching with digital tools in order to impart their knowledge to their students. Overall and above the teachers should also be able to help their students with the skills they need to be successful in this changing business world.

- **Gamification**

The concept of gamification was introduced with the need to help learning more fun and engaging for students of all ages by applying game design to different aptitude tasks. Due to the fast introduction of technology, gamification is more being utilized to augment game design and educational games in mostly all areas of study. These games perform tasks copying real life issues, so it needs learners to incorporate a special skill-set to solve them which enables to build and develop them holistically. This virtual space also allows learners to use their recently gained expertise to build their decision making, risk management and mitigation skills.

- **Online Learning**

Online learning is a model that helps learners to attend learning from virtual platform. This allows the student from home to gain access to teaching videos, subject material & content online. During the pandemic, online learning has been a good substitute. Online learning involves the adaptation of various technologies. In addition to this Massive Open Online Courses (MOOC's) are set up on YouTube Edu, Coursera, Udemy, etc. This enables students to gain deep insights into various fields.

- **Soft Skills Development**

The other crucial skills which are required for students to develop are communication skills, problem-solving, people management, critical thinking, innovation and creativity. In addition to this building leadership qualities are also essential. It is the responsibility of teachers and education Institutions to help coach the young learners so that they are able to nurture these important skills. But, due the online and distant mode of teaching learning this is becoming a real

problem for teachers. It will be required that teachers find a solution to promote students towards face-to-face interaction to build these soft skills. Only once students learn these skills will they be become employable this improving the quality of jobs they get.

- **Student Decreased Attention Span**

It has been seen that with the rise of technology in the teaching learning process, the attention span of students is also decreasing gradually. However, if the content is engaging students tend to pay attention for longer parts of time. And if the content does not engage them, they tend to be disinterested and disconnected throughout the teaching learning process. To ensure the teachers get the attention of students, the content displayed must have great visual displays and interaction with a fun story line to engage the students into the class.

- **Learning versus Teaching**

As online learning has increased due to technology, it has impacted how educators teach students. Since a great part of the information is already online the students have direct access to it. It could be possible that students may lose the need to depend on teachers to teach them all the content. The role of teachers now is to be just facilitators of the entire process. Here they must encourage students to explore on their own and help learners create a deep passion for their domain of interest.

- **The New Way Forward**

The rise of each industrial revolution has altered the types of profiles and jobs in many ways. The upcoming 5th Industrial Revolution is going to bring a dynamic turn to the education system. Learners will need to upskill and re-skill themselves to sustain in the business competition. Teachers play a crucial role to unable students to self-develop themselves so they can remain engaged in their field of interest.

## **Conclusion**

In conclusion, it must be noted that education “provides students with the foundation of skills and knowledge they will lean on for the rest of their lives”. The Education landscape too is evolving at a rapid pace along with technology and business environment. It is very vital the educators be ready to embrace the change as well as be properly equipped to handle the change. In spite of the global pandemic the teaching learning process did not halt, instead got completely transformed into new ways of exploring and evolving. It is of crucial importance that the Education system and educators be adapted as new changes are due on the horizon. A safe space must be created for all students to learn keeping in mind diversity, inclusion and equality. Together we can achieve the unthinkable. Those that learn how to remain on top of these changes will position themselves for growth and success.

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## **Evaluation Methods: Ways of Identifying the Learning Capabilities and Learning Performance of Students with Disabilities in Inclusive Classroom Settings**

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Fr. Baiju Thomas\*

### **Introduction**

Evaluating the efficacy of a teaching design, method, or technique is the goal of such an evaluation. In an inclusive classroom, students and teachers can give each other assessment. It is necessary to plan and prepare ahead of time while using evaluation procedures. Teachers should ensure that all of their materials are in order before executing any assessment technique. A wide range of considerations goes into the creation of evaluation systems. There are classes and academic disciplines in this area and educational goals and objectives. Teachers must be able to tell if their students grasp what they are studying if they wish to use SwDs. Teachers should not be influenced by elements such as caste, class, religion, race, ethnicity, or even personal qualities such as gender or age while evaluating students' work. SwDs are generally graded on their academic achievement and evaluations, such as study material. Fair and equitable evaluation procedures are needed for SwDs to learn and grow more quickly and efficiently. Assessment and evaluation tools are the only way to improve SwD's learning- teaching. It is essential to underline the need to integrate evaluation and assessment methods into inclusive classroom settings. Persons, students, teachers, schools, and procedures are evaluated in nearly every nation. With very little attention given to how they could interact, these concepts are often thrown combined carelessly. Both conception and implementation of the system are highly influenced by the suitability of the evaluation methods used. Use this way to

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see if you are doing your work perfectly and whether or not you need to modify anything. A program's acceptability, efficiency, and equity can be determined by applying evaluation methods. Regardless of the grade level, teachers use the same techniques to evaluate students. They often want to know if the teaching techniques and materials are performing as planned or if they need to be changed to make them more effective. Teachers can use evaluation strategies to determine whether or not the system is successful. An evaluation approach that is scientific and unbiased may be used to evaluate initiatives for their relevance, effectiveness, equity, and efficiency (Evaluation Strategy, 2016). Poor student outcomes result from an ineffective implementation evaluation system since teachers and students are not adequately rewarded for their efforts. Learning experiences and activities in the inclusive classroom must be linked for a practical assessment and evaluation system. It is impossible to conduct a thorough evaluation without making value judgments. Before an evaluation can move forward in any meaningful way, all parties involved must agree on its goals and targets. People make resolutions to attain goals they set for themselves the year before, and the New Year is no exception. When we do an evaluation, we are capturing a moment in time. Proof of the platform's use and empathy are necessary to evaluate this element. It is a way to arrive at a well-informed decision by evaluating something else to evaluate strategies to detect SwDs in inclusive education settings.

### **Significance of Evaluation**

The term "evaluation" might be used to explain determining whether or not students are succeeding in their studies. The academic program's goals govern the evaluation process. Evaluating students' progress appropriately might help them learn more effectively. It is essential to evaluate SwD's learning performance and evaluate student development. Evaluations are standard in almost every field. If the evaluation step is removed from the human experience, we risk losing sight of the meaning of life. You must evaluate the current status of anything before deciding if it is good or bad. As a result of evaluations, societies can grow. Evaluation is the only way to tell if a student has achieved his or her academic goals. Goals and evaluation are connected. The ongoing evaluation of one's growth and development is called the "innovation process." It is planned to post frequent updates as the program proceeds (Evaluation Strategy, 2016). Learn more about how and whom initiatives help by using this information. An evaluation must include a wide variety of factors before it can be considered adequate. Keep in mind the duties of teachers and primary emphasis on displaying timetables and general educational goals for the success of every academic. Teachers that know how to use these characteristics in an inclusive classroom will have an edge. The employment of this assessment approach benefits students with disabilities and the inclusive educational system as a whole. For most people, investing in their children's education is a long-term strategy for developing

their human resources. There is always room for solutions when it comes to educational programs that have been evaluated. On a regular schedule, SwDs are checked by a built-in screen. You may also ask for input on how the app should be developed and executed. Therefore, strategy evaluation is vital to success. An essential thing of the teaching-learning process is the evaluation of student progress. It will be beneficial to both SwDs and teachers. The evaluation process is both ongoing and recurrent at the same time. This activity can improve students' self-perceptions of their educational value and sense of achievement. From preschool through high school, every step of learning must have an evaluation. Whether you are concerned about the integrity of your outcome, retake the exam. The success of this program will be judged on a wide variety of factors. There are several methods for measuring a student's character for an evaluation. Evaluations may help integrate teaching-learning. Students who wish to enhance their grades must participate in this program. It is the goal of this perspective to influence one's actions. Many educational goals can be served by examining a pupil's thoughts, feelings, and attitudes. You do not have to stick to this strategy if you want to learn more about anything (What is Evaluation in Education, 2019). As part of the evaluation, it is crucial to assist students in seeing their strengths and limitations and how they may improve their outcomes in an inclusive classroom setting.

### **Evaluation in Education**

Teachers and students benefit from regular evaluations since they allow them to learn and grow. Students profit from classroom instruction by gaining knowledge and skills that they may use in their professional and personal life in the future. Working knowledge of academic procedures and processes is necessary for one's present affluence. There are several techniques to help pupils overcome their anxiety about examinations. What an awful teacher you are in all of the following categories. Having fellow students aid and encourage you in the classroom is in your best interest as a student. When students and academic institutions benefit from using an evaluation tool in current educational systems (Radhika Kapur, 2020). An evaluation of a leader's ability to inspire and motivate others substantially influences their ability. Increased quantitative assessments in education are made available to all teachers and students. The development is placed, or at least it is supposed to be, concerning the rest of the community. Many students feel that diversity in their education may save them both valuable time and money. Inadequate facilities and lack of participation in consultation sessions prevented students from learning about teaching and evaluation. In order to correctly identify the five must-have techniques, recording, assessment, and unpredictability work together. This informal evaluation of the outcomes is preferred to guarantee that students understand and evaluate the outputs of carefully evaluating teaching strategies. The use of diverse standards may be an essential indication of educational success, teacher quality, and public perception.



You are a human being since you are still functioning. Even the most straightforward decisions, such as what to wear to work or what to get a friend, should be thoroughly considered. There is no way for teachers to know how well their students are progressing and developing if they do not know how well they are progressing and developing themselves. Thus, educational evaluations have become even more critical. As a result, all affect the degree required for the use of evaluation. Evaluations directly impact teachers and children. Our educational system has been severely harmed as an outcome of that one. Students and teachers were previously ignorant of the educational value of evaluations. This is the most common way of identifying pupils and assigning grades to them. To evaluate total competence, academic and application boards frequently employ it. Ultimately, it does not matter what caused the problem as long as the final evaluation is correct. Use classroom evaluations to get information about student learning and classroom interactions and the relevance of access to modern education systems.

### **Evaluations for Students with Disabilities**

The evaluation tool has been carefully considered regarding how students would use it. In order to maintain a high level of education, new teachers must be made aware of student evaluations. They will be able to conduct successful assessments of one another in inclusive classrooms if they can effectively communicate respectfully. Student evaluations of teachers remain a contentious issue (Langbein, 2005; Murray, 2005). Therefore, despite this, it is often employed (Richardson, 2005) and strongly condemned in education (Shevlin, Banyard, Davies, and Griffiths, 2000). Initially, the framework was established for the evaluation. A person's success may be evaluated in three ways: traits, behaviors, and outcomes (Mello, 2004). A student evaluation is required before any special education services may be performed. It is necessary to do an initial evaluation on all students with disabilities to determine whether they are eligible for special education. Before the evaluation can begin, the parents must sign a permission form. The most prevalent users of this condition are children and adults who have trouble concentrating or paying attention. The lack of adequate resources, processes, and support makes it more complicated in low- and middle-income nations to identify learning difficulties in an inclusive classroom. This booklet introduces the evaluation techniques and procedures necessary to identify a learner, as well as thorough descriptions of specific requirements. With this method, organizations may evaluate their current design and evaluation services and identify the actions necessary to build and enhance systems that support SwDs. A teacher can use the evaluation concepts at any point in the program's development. However, even though the section's primary focus is on SwDs, the same strategies and processes may be used to identify other disabilities commonly observed in educational settings.

### **Types of Evaluations Methods in Education**

It may be classified in various ways depending on the standards used to evaluate it. Individuals better understand duration and topic matter influence which of the main evaluation styles is chosen. People, products, and processes may all be evaluated. The items are included in this category: Individual students, educational establishments, and whole education systems all play a part in education. The following is an exhaustive list of categories. There are not many unique evaluation methods because of the large variety of evaluation methods. Even though several variables are at play, the problem may be evaluated methodically. These variables must be taken into account while developing this system, strategy, or evaluation. There are various ways to obtain, which may subsequently be used for a variety of evaluations. As an outcome of the similarities in assessment and requirements evaluations. There are a large variety of evaluation methods used by higher education institutions, such as the ones that follow:

#### **Pre-assessment or Diagnostic Evaluation**

This type of evaluation is frequently used as a follow-up following a diagnostic evaluation. As an instance, students' weaknesses were discovered through diagnostic evaluation. You have tried several different things that have not worked. If a kid has problems in the classroom, you will evaluate to find out why. These evaluations may use diagnostic evaluation such as measures of competency, achievement, and self-evaluation. SwDs' requirements and aspirations should be considered when teachers devise assessment systems. Students cannot succeed academically unless they have a genuine interest in learning and are provided with the necessary resources. Teachers need to consider their students' strengths and weaknesses while planning their courses. Make the most of your strengths and reduce your weaknesses by using these strategies. Teacher evaluation and teaching methods need to be tailored to enjoy the benefits of and use students' strengths and weaknesses. The most prevalent type of evaluation is diagnostic evaluation—an essential factor in determining one's grade in the class. Even before the operation begins, an evaluation might make a diagnosis. SwDs require diagnostic tests to determine their underlying causes, and these evaluations are essential in education programs. A brilliant place to start training is with a diagnostic evaluation. SwDs benefit greatly from diagnostics for a variety of reasons. Teachers must first and foremost determine their students' level of preparation and knowledge. The second objective is to see how well students comprehend a specific topic. Because of the student's current level of knowledge, teachers can determine if the lesson they are about to provide is repetitious or genuinely helps the student learn anything new. This is something that teachers should be aware of in order to avoid instilling apathy in their students. Students with disabilities who are experiencing difficulty or are slow learners may benefit from the

aid of their teachers. Some of the challenges students face may be unrelated to educational resources or methods. Many factors might impact a person's learning ability, including mental and physical health. If a proper investigation is conducted, future problems may be identified in modern educational systems.

### **Formative Evaluation**

Formative evaluation is a tool teachers use to keep close tabs on their students' development and give them critical feedback. It is utilized at the beginning of instructive. SwDs may be asked to perform tests, assignments, or even role-play the characters from the lesson plans as a teaching approach. This is how the gaps in knowledge are discovered. It is a sign of a well-designed curriculum when SwDs do well in school. There may be a need for more study on teaching-learning approaches and learning strategies when students encounter difficulties. The development of educational processes, techniques, strategies, and resources can be considerably aided by a type of evaluation known as a formative evaluation. Formal evaluations are used to determine whether or not students have mastered the subject matter in the program. Teaching methods should be improved and unified throughout the educational system. The outcomes of evaluations that point out the shortcomings of students and teachers can be beneficial to both. Students and teachers alike might benefit from identifying and overcoming their emotional suffering. Since the review's objective is to remedy errors, its primary focus is on this. Students and teachers alike will be motivated to work more if the teaching-learning process is seen positively. Tanner (1972) developed the concept of "formative assessment" to characterize the use of tests and other evaluation procedures within a program or educational curriculum. To establish if set goals can be met in the time allotted, teachers might use formative evaluation. An effective plan is developed after completing formative evaluations. When students and teachers work together on assessments like this, they may better understand each other's development and how to correct it. Teachers and students can use tools such as regular evaluations and final assessments to provide feedback about the effectiveness of their training sessions. Here, we will go through how to evaluate and quantify instruction in education. As part of formative evaluation, teachers get feedback on their teaching design. This may be done simultaneously as deciding on the course's content and distribution options. Teachers can examine their students' grade level and knowledge absorption to ensure that the programs they teach are suitable for their developmental stage. With formative evaluations, students in inclusive classrooms may learn how to improve their performance.

### **Summative Evaluation**

On an ongoing basis, student progress is monitored. The annual summative evaluations include both internal and external tests, which are administered each

year. Assessing a product's success is the primary goal of the evaluation. Formative evaluation is a component of the final product if it is part of the educational process. In this program, students get a comprehensive picture of the whole curriculum. In order to progress, students must pass this evaluation. A class, a program, or even an academic year comes close to a summative evaluation. Summative evaluations are often looked upon favorably and given a great deal of weight (though they do not need to be). Evaluation at the end of a course is used to determine whether or not the learning objectives have been met. Teachers, students, curriculum, and system are all evaluated in summary evaluations that look at a program or course of learning. There must be proof that the learning goals have been met for summative evaluations to be accurate. There was a time when privately performed evaluations were regarded as the most acceptable method of doing such evaluations. When instructors formulate and implement standardized criteria for summative evaluation, they are more likely to be accurate in their summative evaluations. A wide range of classroom work is more easily assessed by teachers when specified criteria and processes are created and implemented. Professional evaluations are more reliable when a more comprehensive range of student work is used and evaluated following generally agreed-upon criteria (ARG, 2006; Sadler, 1989, David, 1989). Teachers can include summative and formative evaluations into their lesson plans in various ways. Teacher summative evaluations determine whether or not students have learned essential skills and concepts. SwDs' reactions to teachers and the effectiveness of education are also taken into account. In addition to the immediate and long-term benefits for students, the successful completion of assignments and evaluations significantly influences the educational system. Summative evaluation is essential in inclusive classrooms to ensure that students put classroom information into action in the real world. The summative evaluation is just around the corner. An evaluation of the session's worth and usefulness will be done once it is over. It is important to remember that summative evaluations are primarily concerned with the job results. Teachers may evaluate how well students or people are doing in a particular area through performance evaluations. Summative evaluations gauge how well a student is doing in inclusive classrooms.

### **Confirmative Evaluation**

Teachers use confirmative evaluation to determine how many their SwDs have learned and understood from their classes. Education methods and materials should also be evaluated to see if they work. This method may create teaching and training programs evaluation metrics and ideas. We used the scientific technique to evaluate creative work to arrive at this result. Thus, the primary goal of the confirmative evaluation is to verify whether or not the teaching techniques, instructional strategies, and educational resources are adequate for academic goals and the more extensive educational system.

**Norm-referenced Evaluation**

The norm-referenced evaluation method compares students' grades to the school's average. SwDs' ability to learn and the efficacy of teachers' techniques and teaching resources themselves can be evaluated in numerous ways. It is also essential to consider the advancement of students and the educational system as a whole. It is considered successful when an approach or plan has a positive effect. If the outcome is negative, it is also critical to make changes. Norm-referenced evaluation is preferred since it ensures that students' grades are consistent with level courses.

**Criterion-referenced Evaluation**

Criterion-referenced evaluation emphasizes that pupils' academic progress is judged against standards, norms, and values. Undergraduates must adhere to rules and regulations when gathering information for their treatises and research materials. Examining the degree to which the methods and procedures used by SwDs meet specific criteria or ideas might help you achieve this aim. When deciding on a curriculum and teaching techniques, teachers should consider a few factors. Criterion-referenced evaluation emphasizes the conformity of SwDs' academic outcomes to the educational system's norms and values and its set of standards.

**Conclusion**

There are several methods for evaluating an outcome-based evaluation. Making decisions facilitates the discovery and implementation of remedies for security weaknesses, gaps, and flaws. As an outcome of user feedback, we must address the concerns. When doing an evaluation, look for difficulties that may be in the way of executing the process. Also, learn to manage your time effectively and to lead others. Each instructional plan is reexamined from the ground up. Assigning, evaluating, and testing students' progress in inclusive classrooms is a frequent practice. In order to help students with disabilities thrive academically and, in their lives, a range of evaluation approaches must be integrated. The approaches used to evaluate new technologies significantly impact their development and implementation. Professionals can assess whether or not they are carrying out their responsibilities appropriately and, if so, what changes they need to make. SwDs' capacity to learn and the effectiveness of teaching-learning methodologies, educational strategies, and instructional resources are essential goals. Schools across the board have employed a variety of methods. Academics from different schools have set up an office to help them improve their teaching abilities. Developing one's teaching abilities necessitates openness to new ideas and a willingness to experiment. We must be able to separate our emotional responses from our evaluations of SwDs' performance in order to be good teachers. The level of SwDs' involvement has to be increased. It could be beneficial to integrate it into adult education programs. Teachers might use an evaluation form to help them enhance the teaching-learning in inclusive classroom settings.

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## **Academic Interventions for Developing Adaptive Behaviors in Children with Autism Spectrum Disorder: A Systematic Literature Review**

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### **Introduction**

Autism is a neurological and developmental disorder that arises out of a fusion of genetic and non-genetic or environmental influences. According to the current global status one among one-hundred sixty children are affected with ASD. ASD is a composite developmental disorder involving continuous challenges in communication, social behavior and various other skills that are required for efficient living. Since Autism is a Spectrum Disorder, the capabilities and drawbacks that each affected individual possesses will be different from one another, this condition lets out a feeling of despondence to those around. But, early diagnosis followed by the incorporation of apposite approaches and execution of suitable measures can aid in bringing down the severity of the symptoms, thereby contributing in learning and development. Ascertaining an intervention by analyzing whether it is appropriate, needed, sustainable and generalized is critical to social skill interventions and is referred to as social validity (SV) (Fox and McEvoy 1993). SV is a process that is multifaceted, comprising a lot many variables, inclusive of significance and intervention acceptability. (Finney 1991). The degree to which an intervention is accepted as socially valid can be chiefly interpreted by investigating whether that particular intervention is taken up and executed by students, parents and educators. (Kern and Manz 2004).

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Apart from the diagnostic criteria, an extensive range of differences and difficulties have also been established that links autism with more sensitivity to uncertainty (Glod, Riby and Rodgers, 2019) misinterpretation of communication (Heasman and Gillespie, 2018; Milton, 2012) and anxiety emerging out of the complications in social interaction (Hollocks, Jones, Pickles et al., 2014), all of which pose as possibilities to act as barriers to the inclusion of affected children in school activities. Autism has also been correlated with variations in reasoning, displaying a bias towards deliberative reasoning rather than intuitive (Brosnan, Lewton and Ashwin, 2016), difficulty in task switching (Katagiri, Kasai, Kamio and Murohashi, 2013), differences in focus of attention (Goldstein, Johnson and Minshew, 2001). Hindrance in the development of proper motor skills in autistic children (Hannant, Tavassoli and Cassidy, 2016) and varied insights on friendships (O'Hagan and Hebron, 2017) also formulate the likelihood of obstacles for including CWASD in schools that were primarily made for non-autistic children.

Several literary works propose the presence of different cognitive, sensory and social behavioural disorders that might arise due to autism and so, it is highly important for right interventions to be adopted depending upon the kind and intensity of the disorder faced by the affected individual. With a lot of researches being carried out in this field, it is now possible to choose the apt interventions from a large list of options that includes technology as well. At present, technology has become an indispensable part of our life and it has not left any area untouched; its influence can be seen even in inculcating adaptive behavioural skills in CWASD, along with the other traditional and innovative efforts. This review, therefore, focuses on the various interventions that successfully facilitates the overcoming of disabilities faced by the children suffering from Autism.

### **Objective**

The main objective of the present review was to examine the various academic interventions for developing adaptive behaviour skills in children with autism spectrum disorder and to report their findings in the literature review.

### **Search Strategy and Review**

A systematic literature review was conducted based on research articles that were collected with the keywords like 'autism', 'academic interventions', 'adaptive strategies' and 'assistive techniques'. The studies examined the various efforts that were put in to develop adaptive behavioural skills in CWASD. For the preparation of the present review paper, 49 articles published between the years 2000 and 2021 were collected. Relatable review papers were also included as a part of study as it helped a great deal with the data analysis. All the research work conducted in the research articles and theses that were collected as part of the study had the



involvement of reliable participants and sound methodologies. The materials gathered were all written in English.

**Table 1: Research Articles**

Author	Title	Participants	Source		Findings
			Name of the Journal, Vol/Issue, Page no., DOI	Year of Publication	
Kaiser. A, Hancock. T, Nietfeld. J.P.	The Effects of Parent-Implemented Enhanced Milieu Teaching on the Social Communication of Children Who Have Autism	6 preschool CWASD and their mothers	Early Education and Development, 11(4), 423-446, 10.1207/s15566935eed1104_4	2000	Parents' satisfaction increases with the Enhanced Milieu Teaching as there was an improvement in the use of productive language.
Bernard-Opitz.V, Sriram. N, Nakhoda. S.M	Enhancing Social Problem Solving in Children with Autism and Normal Children Through Computer-Assisted Instruction	15 verbal CWASD	Journal of Autism and Developmental Disorders, 31(4), 377-384, 10.1023/A:1010660502130.	2001	Consistent increase in performance rate and problem-solving capacity.
Thiemann. K.S., Goldstein. H	Social Stories, Written Text Cues, and Video Feedback: Effects on Social Communication of Children with Autism	5 children with social impairments and 10 of their peers having no disabilities	Journal of Applied Behavior Analysis, 34(4), 425-446, 10.1901/jaba.2001.34-425	2001	Visual cues can effectively develop the social language skills along with certain other social behaviours.
Tissot. C, Evans. R	Visual Teaching Strategies for Children with Autism	-	Early Child Development and Care, 173(4), 425-433, 10.1080/0300443032000079104	2003	Increase in understanding language along with improvement in communication as well as few other related behavioural skills in visual learners having ASD.
Kashinath. S, Woods. J, Goldstein. H	Enhancing Generalized Teaching Strategy Use in Daily Routines by Parents of Children with Autism	5 children along with their mothers.	Journal of Speech, Language, and Hearing Research, 49(3), 466-485, 10.1044/1092-4388(2006/036).	2006	Implementation of proper teaching strategies by parents on a daily basis gave rise to positive outcomes in the communication skills of children with ASD.
Vacca. J. S	Autistic Children Can be Taught to Read	-	International Journal of Special Education, 22(3), 54-61	2007	Visual materials, phonetic approach, relevant context

					clues, social stories and comic strip sequences increase the enthusiasm and encourages them to know more by reading what is written.
Carlson. B, McLaughlin. T.F., Derby. K, Blecher. J	Teaching Preschool Children with Autism and Developmental Delays to Write	1 boy and 1 girl of preschool age with developmental disabilities.	Electronic Journal of Research in Educational Psychology, 7(1), 225-238, 10.25115/ejrep.v7i17.1313	2009	Programs like Handwriting Without Tears can bring up the ability of students to write specific letters without a lot of difficulty.
Tereshko. L, MacDonald. R., Ahearn. W.H	Strategies for Teaching Children with Autism to Imitate Response Chains Using Video Modeling	4 male preschool aged children	Research in Autism Spectrum Disorders, 4(3), 479-489, 10.1016/j.rasd.2009.11.005	2010	Segmented video modelling procedure can be used to teach CWASD on how to imitate an eight-step response chain.
Shillingsburg. M.A., Valentino. A.L., Bowen. C.N., Bradley. D., Zavatkay. D	Teaching children with autism to request information	2 boys diagnosed with autism.	Research in Autism Spectrum Disorders, 5(1), 670-679, 10.1016/j.rasd.2010.08.004	2011	Verbal/non-verbal stimuli helps in successful acquisition and maintenance of all questions of request.
Pennington. R.C, Ault. M. J, Schuster. J.W, Sanders. A	Using Simultaneous Prompting and Computer-Assisted Instruction to Teach Story Writing to Students with Autism	3 boys ranging from 7 to 10 years who were affected by autism	Assistive Technology Outcomes and Benefits Focused Issue: Assistive Technology and Writing, 7(1), 24-38	2010	Development of story-writing skills in all the participants
Trottier. N, Kamp. L, Mirenda. P	Effects of Peer-Mediated Instruction to Teach Use of Speech-Generating Devices to Students with Autism in Social Game Routines.	Students with ASD and peer confederates	Augmentative and Alternative Communication, 27(1), 26-39, 10.3109/07434618.2010.546810	2011	Increase in the total communicative acts along with the skills for using Speech Generating Devices, leading to positive remarks on social validity.
Lozano. J, Ballesta. J, Murcia. S. A	Software for Teaching Emotions to Students with Autism Spectrum Disorder	9 students of both sexes with ASD, aged between 8 and 18	Scientific Journal of Media Literacy, 18(36), 139-147, 10.3916/C36-2011-03-05	2011	Improvement in social skills and also in their capability to handle tasks related to

					understanding emotional skills.
Kagohara. D.M, Meer. L, Achmadi. D, Green. V.A, O'Reilly. M.F, Lancioni. G. E, Sutherland. D, Lang. R, Marschik. P.B, Sigafoos. J	Teaching picture naming to two adolescents with autism spectrum disorders using systematic instruction and speech-generating devices	2 adolescents having ASD with expressive language age equivalence of less than 2.5 years	Research in Autism Spectrum Disorders, 6(1), 1224–1233, <a href="http://dx.doi.org/10.1016/j.rasd.2012.04.001">http://dx.doi.org/10.1016/j.rasd.2012.04.001</a>	2012	Increased rates of right picture identification related to both close-ended as well as open-ended questions along with the development in speaking skills from various educational activities undertaken
Rangel. A	MOSOCO: a mobile assistive tool to support children with autism practicing social skills in real-life situations	3 students with autism who demonstrated minimal social skills	Paper presented at Session: Health & Children, CHI 2012, Austin, Texas, USA.	2012	Develops social interactions, facilitates practicing and learning social skill and brings down social and behavioural missteps.
Vellonen V, Karna E, Virnes. M	Communication of Children with Autism in a Technology-Enhanced Learning Environment	4 CWASD	Procedia - Social and Behavioral Sciences, 69(1), 1208-1217, <a href="https://doi.org/10.1016/j.sbspro.2012.12.053">https://doi.org/10.1016/j.sbspro.2012.12.053</a>	2012	Higher vocal expressions and usage of multiple ways of communication.
O'Malley. P, Lewis. M.E.B, Donehower. C	Using Tablet Computers as Instructional Tools to Increase Task Completion by Students with Autism	7 students (2 females, 5 males) with a primary diagnosis of ASD, ranging from 10 to 13 years of age	Paper presented at 2013 American Educational Research Association Annual Meeting in San Francisco, CA.	2013	Independent task completion and brings down unreasonable behaviours and teacher prompt levels.
Flores M.M, Head C.N, Hinton. V, Franklin. T	Teaching Reading Comprehension and Language Skills to Students with Autism Spectrum Disorders and Developmental Disabilities Using Direct Instruction	18 male students from 1 <sup>st</sup> to 7 <sup>th</sup> grades who had autism or multiple disabilities	Education and Training in Autism and Developmental Disabilities, 48(1), 41-48	2013	Improvement in learning and linguistic skills along with multiple skill engagement which facilitates participation.
Alzyoudi. M, Sartawi. A.A, Almuhiri. O	The Impact of Video Modelling on Improving Social Skills for Children with Autism	5 children with ASD	British Journal of Special Education, 42(1), 53-68, 10.1111/1467-8578.12057	2015	Promotes social skills, resulting in the attainment of mastery level of the target behaviour.
Campbell. J.E, Morgan. M, Barnett. V, Spreat. S	Handheld Devices and Video Modeling to Enhance the Learning of Self-Help Skills in Adolescents With Autism	3 children with ASD	OTJR: Occupation, Participation and Health, 35(2), 95-100, 10.1177/1539449	2015	Develops the acquisition of self-help skills giving them greater levels of

	Spectrum Disorder		215570040		independence with reduction in the need to be told to do something.
Ramachandiran. C.R, Jomhari. N, Thiyagaraja. S, Maria. M	Virtual Reality Based Behavioural Learning for Autistic Children	Parents as well as CWASD.	Electronic Journal of e-Learning, 13(5), 357-365	2015	Behavioural learning takes place without any complication and with age, parents gain confidence in handling children with ASD.
Zaki. T, Islam. M.N, Uddin. M.S, Tumpa. S. N	Towards Developing a Learning Tool for Children with Autism	-	Paper presented at the 6th International Conference on Informatics, Electronics & Vision (ICIEV) at: University of Hyogo (Hyogo kenritsudaigaku), Himeji, Japan, 10.1109/ICIEV.2017.8338597	2017	Develop learning of various concepts in children by means of attractive and interesting tools.
Cabiellas-Hernández. D, Pérez-Pérez. J, Paule-Ruiz. M, Fernández-Fernández. S	Specialized Intervention Using Tablet Devices for Communication Deficits in Children with Autism Spectrum Disorders	11 children	IEEE Transactions on Learning Technologies, 10(2), 182 – 193, 10.1109/TLT.2016.2559482	2017	Progress in vocabulary and sentence formation as this intervention facilitates easy and interesting teaching-learning process.
Hedges. S.H, Odom. S.L, Hume. K, Sam A	Technology use as a support tool by secondary students with autism	499 students	Autism, 22(1), 70 –79, 10.1177/1362361317717976	2018	Reduction in anxiety, increased independence and improvement of social opportunities.
Kiruba. K, Sharmila. D	Certain investigations to improve communication and recognize emotion for the autistic children	-	Shodhganga@IN FLIBNET, <a href="http://hdl.handle.net/10603/331700">http://hdl.handle.net/10603/331700</a>	2019	Provide appropriate communication training by identifying specific needs.
Yousif. M.J, Yousif. J.H	Humanoid Robot as Assistant Tutor for Autistic Children	Tutors, students, robots	International Journal of Computation and Applied Sciences, 8(2), 8-13	2020	Robots as tutors assist children with ASD in grasping difficult topics using their native language and by including fun

					activities in an unbiased environment.
Grindle. C, Kurzeja. O, Tyler. E, Saville. M, Hughes. J.C, Hastings. R.P, Brown. F.J	Teaching Children with Autism Reading Comprehension Skills using Online Reading Instruction: Preliminary Evaluation of Headsprout Reading Comprehension	3 girls and 3 boys with ASD	Journal of International Special Needs Education, 23(1), 1-12	2020	Bring up the reading and comprehension skill of children as there will be a consistency in teaching.

**Table 2: Review Papers**

Author	Title	Source		Findings
		Name of the Journal	Year of Publication	
Goldstein. H	Communication Intervention for Children with Autism: A Review of Treatment Efficacy	Journal of Autism and Developmental Disorders, 32(5), 373-396, 10.1023/A:1020589821992	2002	Most of the child-language intervention researches have aimed at developing effective treatments for greatly challenging cases and hence, have targeted more rudimentary language skills.
Ayres. K.M, Langone. J	Intervention and Instruction with Video for Students with Autism: A Review of the Literature	Education and Training in Developmental Disabilities, 40(2), 183–196	2005	Video models allow the acquisition of skills without the help of a teacher, can increase communication skills in children having ASD.
Mechling. L	The Effect of Instructor-created Video Programs to Teach Students with Disabilities: A Literature	Journal of Special Education Technology, 20(2), 25-36, 10.1177/016264340502000203	2005	Instructor-created video programs are promising and engrossing means of instruction

	Review			which can be used to present topics in an organised manner with repetition.
Silverman. M.J	Nonverbal Communication , Music Therapy, and Autism: A Review of Literature and Case Example	Journal of Creativity in Mental Health, 3(1), 3-19, <a href="https://doi.org/10.1080/15401380801995068">https://doi.org/10.1080/15401380801995068</a>	2008	Vocalizing in sessions, improvement in eye contact and self-expression through therapist interaction and keyboard improvisation along with an increase in the quality of life and social development.
Shukla-Mehta. S, Miller. T, Callahan. K.J	Evaluating the Effectiveness of Video Instruction on Social and Communication Skills Training for Children with Autism Spectrum Disorders: A Review of the Literature	Focus on Autism and Other Developmental Disabilities, 20(10), 1-14, <a href="https://doi.org/10.1177/1088357609352901">10.1177/1088357609352901</a>	2009	Video modelling is beneficial for those who are very attentive and have high sensitivity to auditory stimuli and also to those who cooperate with videotaping.
Whalon. K.J, Otaiba. S.A, Delano. M.E	Evidence-Based Reading Instruction for Individuals with Autism Spectrum Disorders	Focus Autism Other Dev Disabl, 24(1), 3–16, <a href="https://doi.org/10.1177/1088357608328515">10.1177/1088357608328515</a>	2009	Anaphoric cueing is an effective intervention to improve reading comprehension and accurate task completion in learners with ASD.
Randi. J,	Teaching	J Autism Dev	2010	Working with

Newman. T, Grigorenko. E.L	Children with Autism to Read for Meaning: Challenges and Possibilities	Disord, 40(7), 890–902, 10.1007/s10803-010-0938-6		written text can lead to acquisition of language skills and since visual texts are permanent, and hence, the learners can come back n refer to it whenever needed.
Reed. F.D.D, Hyman. S.R, Hirst. J.M	Applications of Technology to Teach Social Skills to Children with Autism	Research in Autism Spectrum Disorders, 5(3), 1003-1010, 10.1016/j.rasd.2011.01.022	2011	The most normal way of developing common social skills is by using play skills and outcomes of the child can be maximised by prioritising professional developmental attitudes.
Simpson. K, Keen. D	Music Interventions for Children with Autism: Narrative Review of the Literature	Journal of Autism and Developmental Disorders, 41(11), 1507-14, 10.1007/s10803-010-1172-y	2011	Communication , socialisation and behavioural skills can be positively impacted by music therapy.
Khowaja. K, Salim. S.S	A Systematic Review of Strategies and Computer-Based Intervention (CBI) for Reading Comprehension of Children with Autism	Research in Autism Spectrum Disorders, 7(9), 1111-1121, 10.1016/j.rasd.2013.05.009	2013	Vocabulary instruction and text comprehension strategies help in developing the reading capability in children with ASD. Multimedia methods are

				interactive and engaging while question answer method help in understanding their level of inference.
Murray. J	Practical Teaching Strategies for Students with Autism Spectrum Disorder: A Review of the Literature	BU Journal of Graduate Studies in Education, 7(2), 68-75	2015	Developing instructional approaches that integrate social, behavioural and academic requirements will be of benefit for both, the teachers as well as the students.
Gunn. K.C.M, Delafield- Butt. J	Teaching Children With Autism Spectrum Disorder With Restricted Interests: A Review of Evidence for Best Practice	Review of Educational Research, 86(2), 408–430, 10.3102/0034654315604027	2015	Positive impacts in learning can be brought about by accommodating restricted interests of children with ASD in classroom practices as it will lead to educational attainment as well as social engagement.
Fernandes. F.D.M, Amato. C.A.L.H, Cardoso, C, Navas. A.L.G.P, Molini-	Reading in Autism Spectrum Disorders: A Literature Review	Folia PhoniatriLogop, 67(4), 169–177, 10.1159/000442086	2015	Oral language skills are connected with reading comprehension . Nonverbal social and cognitive



Avejonas. D. R				abilities are related to reading performance as well as comprehension . It is seen that single-word reading tasks produce better results. Phonological skills are also related to reading comprehension .
Aller. E. E	Developmental Impact of Inclusion Classrooms on Autism Spectrum Disorder: A Systematic Review	. Social Work Master's Clinical Research Papers, 1-34	2017	Teachers with no specific knowledge about ASD feel under-confident in teaching students with ASD, thereby reducing the success of inclusive education. Hence, teacher education on ASD is of high importance for the development of the students they teach.
Torres-Carrión. P, González-González. C, Bernal-Bravo. C, Infante-Moro. A	Gesture-based Children Computer Interaction for Inclusive Education: A Systematic Literature Review	Paper presented at CITT 2018 - The 4th International Conference on Technology Trends At: Babahoyo, Ecuador,	2018	Personalised teaching helps in addressing all the needs of children, thereby, making them feel adapted to their

		<a href="https://doi.org/10.1007/978-3-030-05532-5_10">https://doi.org/10.1007/978-3-030-05532-5_10</a>		environment.
Valencia. K, Rusu. C, Quiñones. D, Jamet. E	The Impact of Technology on People with Autism Spectrum Disorder: A Systematic Literature Review	Sensors, 19(20), 10.3390/s19204485	2019	Latest technology like virtual agents, artificial intelligence, virtual reality, and augmented reality create a comfortable space that encourages continuous learning in CWASD.
Ediyanto. E, Wulandary. V, Fatmawati. D	Science learning for student with autism spectrum disorder: A literature review	Paper presented at The 3rd International Conference on Mathematics and Sciences Education (ICoMSE) 2019. At: Malang, 10.1063/5.0000727	2019	Learners with ASD can become well-versed in science by using resources like textbooks/eText and computer programmes.
Bailey. J, Baker. S. T	A synthesis of the quantitative literature on autistic pupils' experience of barriers to inclusion in mainstream schools	JORSEN, 20(4), 291-307, 10.1111/1471-3802.12490	2020	Difficulties in certain experiences like friendship, anxiety and sensory sensitivity are common to children with ASD.
Daub. A. C, Huber. T	Effectiveness of Social Stories on Social Skills for Elementary-Aged Students with Autism: A Literature	International Journal of Education, 12(4), 12-37, 10.5296/ije.v12i4.17759	2020	Social story delivery calls for illustration of stories with personalised pictures which ensures active involvement of

	Review			the child. This intervention is found to be user-friendly, entertaining and interesting due to which a significant improvement in learning takes place.
Alqudah. M, Alsababha. R, Almalki, I, Al-Masaeed. M	A Systematic Review of Studies on Social Skills Development for Adolescents with Autism Spectrum Disorders	Journal of Quality in Health care & Economics, 4(1), 1-13, 10.23880/jqhe-16000206	2021	3 branches of social skill interventions developed to improve social and communication skills include: Programme for the Education and Enrichment of Relational Skills (PEERS), through groups that train in social skills and mass skills training.
Stack. K, Symonds. J. E, Kinsella. W	The perspectives of students with Autism Spectrum Disorder on the transition from primary to secondary school: A systematic literature review	Research in Autism Spectrum Disorders, 84(4), 10.1016/j.rasd.2021.101782	2021	Feelings and expectations can vary from one phase of life to another. There will be facilitators as well as barriers during a transition. A variety of needs will have to be fulfilled for a successful transition with the help of either universal

				or individualised support.
Mosher. M. A, Carreon. A. C	Teaching social skills to students with autism spectrum disorder through augmented, virtual and mixed reality	Association of Learning Technology, 29(1), 1-22, <a href="https://doi.org/10.25304/rlt.v29.2626">https://doi.org/10.25304/rlt.v29.2626</a>	2021	Using Augmented Reality and Virtual Reality result in high student motivation toward intervention and positive outlook on technology.

### Result and Discussion

In order to develop this review paper, studies were carried out from 49 materials that were collected, out of which 26 were research articles and 23 were review papers. The research articles were studied as evidences for the relevance of various interventions and review papers were referred for data analysis. By now, it is a known fact that apt interventions can lead to the development of adaptive behaviours in CWASD spectrum disorder. In order to prove it further, research articles and review papers dealing with various behaviours and interventions were gathered. Some review papers covered more than one skill in it. Out of the referred materials, there are 13 materials dealing with the interventions to improve Communication. Reviewing these studies, it was found that systematic interventions not only improve communication skills in autistic children, but it also leads to the development of their social as well as language skills. Enhanced Milieu Approach is an evidence-based intervention that employs the interest and initiations of a child during daily social interactions to develop language use as well as communication. But one thing to be noted in this approach is that its success depends upon the extent of efficiency with which the tutors implement the strategies. Another approach that is highlighted is the use of Visual cues for teaching autistic children. But this will be applicable only for those who are visual learners. Certain other interventions involving parents or technology should be applied upon students who require it. There are 9 materials dealing with the interventions to improve reading in autistic children. Direct instruction methods as well as CAI can help in the development of reading in autistic children. The children should also be given a space of their own where they can learn at their own pace. They should also be granted enough freedom to put forth all their creativity as this will help in bringing out their complete potential. 2 materials that focus on the development of writing were also taken up. There are evidences that Computer

Assisted Instruction as well as programmes like Handwriting Without Tears give enough confidence to autistic children to develop their writing skills as well as improve the handwriting respectively. The tutors should also have a lot of patience while teaching the students how to write as not a lot of students will be interested to write. Any sort of threats from the tutors' or even parents' sides will bring about a decline in the development of the skill in the affected children. There were 4 materials based on developing the problem-solving skills in autistic children which can be brought about by human as well as technological interventions based on the kind of problem at hand. 13 materials that were gathered dealt with the ways to develop Academic skills which can again be developed by both human as well as technological interventions depending upon the academic task or subject at hand. 10 of the materials display the ways to upgrade social skills. This can be brought about by peer interactions or even through mobile learning. The more the autistic children mingle with their peers and other people who treat them normally the more they will learn how to behave with the others. Also, these children should not be shut up in the house just because they appear to be a little different from the others. They should be taken around to a lot of places and be allowed to experience everything that the other children also get to. In this way too, the CWASD get to learn a lot about social skills by observing their surroundings. Further, it was noticed that very few researches were carried out in which the interventions of parents were solely regarded in developing the adaptive behaviors of children with ASD and hence, this area calls for more researches to be conducted as parents are the first mentors of every child.

### **Conclusion**

The challenges faced by CWASD can be reduced to a large extent by involving right interventions to ease it out. The study shows that all the interventions have its own limitations attached to it which clearly proves that none can be said to be complete and perfect on its own, hence, when found necessary, a combination of two or more interventions can be taken up as the appropriate way of dealing with the problem at hand. Autistic community should not be cornered just because they find difficulty in handling a few things. Solutions have to be framed to subside their issues and they have to be held together for a better tomorrow, for them, as well as for the world. Each one of us have the right to develop and people actually grow by helping each other grow. The findings of this review paper may assist further studies related to how particular combinations of interventions can effectively develop adaptive behaviors in children with ASD. Such combinations can prove to be more fruitful than sticking to just one intervention for each skill. At times, certain interventions may work hand-in-hand and complement each other and produce good result in a relatively short span of time. Taking up appropriate efforts for CWASD will not only help them to overcome their present problem, but it also transforms them into independent individuals in their future.

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## Employment Generation through Felt Waste Products Development in Tonk District, Rajasthan

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### Introduction

Felt from wool is one of the oldest known textile. Felt making in India is still a household enterprise. Felt is a woolen or wool-blend fabric characterized by the densely matted condition of most or all of the fibers of which it is composed. The main advantage of felting over other fabric manufacturing techniques is that it gives a finished product in much less time and requires very little equipments. Handmade felt making is essentially a small scale cottage based industry located in rural, sub urban and urban areas. Felt manufacturing units are scattered in different pockets of the Rajasthan state mainly in Tonk, Jaipur and Bikaner. Today approximately 150 different handmade felt units are working in Rajasthan and other parts of country (Shakyawar et al., 2004). Handmade felt is commonly found in Malpura, Deoli, Uniara, Todaraisingh and Newai (Batra et.al., 1998).

Another advantage contributed by wool content is the brightness of colour. Wool takes up dyes well and the felt looks attractive. Felt is a fabric in which both sides can be used as the face side. This makes it suitable for making reversible articles (Gill and Pusphanjali, 2005).

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Tonk in the east of Rajasthan has a well-developed wool based industry and has emerged as the largest felt producing district in the state. Handmade felt industry is producing limited types of articles as a result market is also very limited. Due to this very reason the felt industry of Tonk has not received the attention it deserved. India is having rich resources and cheap labor. It is helpful in the employment opportunities but due to lack of product diversification felt industry is struggling to achieve national and international fame.

**Aktas & Makela (2017)** stated that craftsperson can be empowered by design, which gives her the ability to maintain her work and practice. Craftspeople who employ design have more power: they may develop their own craft identities, maintain their practice, and form productive relationship with the local community.

**Sirpa & Minna (2015)** there is a problem among Cyprus' craftspeople between retaining and developing their traditions. Traditional and modern features of textile crafts must be integrated for a sustainable future. One issue is that the living tradition is being lost since it is no longer taught to the new generation: the Cypriot youngsters should be taught about their artisan traditions so that they can understand the importance of conserving their own cultural heritage.

### **Significance of the Study**

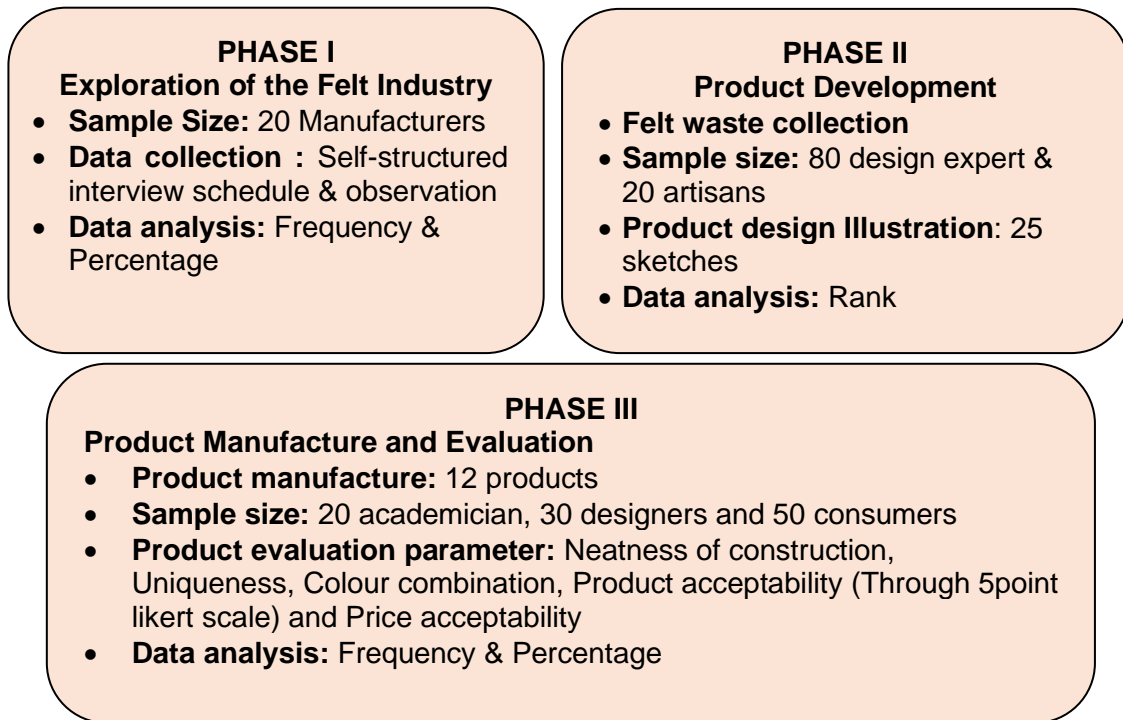
Felt industry should realize that product diversification is the key to its growth. There is need to find out the different ways of utilizing the felt waste. The industry generally produces items like toys, carpets, hats, jackets, caps, blankets, pillows cover and other decorative and utility articles which provide employment opportunities to the population. Therefore, the present study was conducted to experiment with different types of potential uses of felt industry waste which could benefit the population in starting their enterprises and earn their livelihood.

### **Objectives**

- To study the existing product types and felt waste handling practices in the handmade felt industry of Tonk.
- To design a series of new products utilizing felt waste.
- To develop the products and evaluate the preference and marketability of the products.

### **Methodology**

The study was carried out in phase-wise manner which has been described under the following heads:



**Figure 1: Research Design**

To study the existing products and waste handling practices a survey was carried out by selecting some artisans as respondents. In the next phase of study felt waste was procured and some new products were designed and evaluated on the basis suitability for making in felt. Some product were actually constructed and evaluated in the same way as the sketches, this time assessing the marketing potential also. In the final stage some order were fulfilled and dissemination work was also initiated

### **Explore the Felt Industry**

The survey was carried out in Tonk town of Rajasthan. Areas selected in Tonk were “Purana Tonk” near “Ghanta Ghar” and “Bada Kunva” as most of the felt artisans resides there.

The required information was gathered by observation as well as self-structured interviews schedule of 20 persons involved in this business. An intensive field survey was done to study the existing state of the felt making industry to analyse the kind of felt being manufactured, raw material used, and technique of felt making. In addition, the information regarding type of surface enrichment techniques being used and kind of products being manufactured were noted.

The information regarding types of felt and kind of products that could be manufactured were noted and photographs were taken.

### **Product Development**

For preparing the desired product the felt waste was collected from different units of Tonk according to the needs of the products. Considering the waste available, twenty five new products and design were planned and sketched in black and white. While planning the product some points were kept in mind like product should not need frequent washing, its design should be unique, it should not be expensive, and felt may be combined with other fabrics and trimmings.

- **Product Design Review**

The 25 possible products sketches were sketched in black and white and design number was designated for ease in evaluation by the experts. 25 product sketches were evaluated by 80 design expert and 20 artisans .Suitability for making in felt was evaluated by asking the judges to mark yes or no against each sketch. After evaluation the expert give the ranks of all the design and best 12 ranked design select for further development.

### **Product Manufacture and Evaluation**

On the basis of evaluation of sketches, 12 designs were selected out of them for construction. Some new product ideas were also conceived at this stage and were decided to be produced.

The selected designs of different product were manufactured using the already collected waste. Technical help in this task was extended by the felt product making unit of Mohammad Bahid , Tonk.

- **Costing and Pricing**

Total cost of each product was calculated by summing up all the materials' and labour costs and a profit margin of 10% was added to ascertain the price.

- **Final Product Appraisal**

The finished articles were evaluated by 100 judges. The panel of judges comprised 20 academicians, 30 designers and 50 consumers Each judge gave scores for neatness of construction, uniqueness, colour combination, and product acceptability of each article on the basis of five point likert scale Then scores of all judges for each article is calculated and on the basis of scores rank is given to each article of every category. Suggestions and remarks were also invited.

### **Results and Discussions**

The present study was conducted to develop a series of new products utilizing felt waste. Traditional products and felt waste handling practices in the handmade felt industry of Tonk were studied prior to new product development. The developed products were evaluated for preference and marketability. The results obtained in each phase of the study are discussed under the following heads:

- Existing product types and felt waste handling practices
- Evaluation outcome of the sketched designs
- Evaluation outcome of the finished products

### Existing Product Types and Felt Waste Handling Practices

**Table 1: Type of Handmade felt produced in Tonk**

(N = 20)

S.no.	Felt Type	Respondents	
		Frequency	Percentage
1.	Fine Felt	20	100
2.	Coarse felt	20	100
3.	Embroidered felt	14	70
4.	Patch work felt	20	100
5.	Appliqué work felt (Bold and Fine)	20	100

Types of handmade felt produced in Tonk are presented in Table 1. It is clear from the table that all the respondents were involved in producing fine as well as coarse felt. Embroidered felt was being produced in fewer amounts than the patchwork and appliqué work felts.

**Table 2: Type of Products made from Handmade Felt**

(N = 20)

S. No.	Felt Type	Respondents	
		Frequency	Percentage
1.	Wall hangings	20	100
2.	Foot mats	20	100
3.	Carpet	20	100
4.	Slippers	15	75
5.	Caps	10	50
6.	Plain bags	15	75
7.	Soft toys	3	15
8.	Dusters	10	50
9.	Pillow	3	15
10.	Pillow cover	2	10
11.	Crowns	10	50
12.	Magazine holders	20	100

The product which are conventionally made in the cottage industry by most of the producers include wall hangings, foot mats, carpet, slippers, magazine holders and plain bags other items were caps, toys, dusters, pillows, and crowns (Table 2).

**Table 3: Consideration for Product Selection or Making****(N = 20)**

S.No.	Consideration	Respondents	
		Frequency	Percentage
1.	Fashion	1	5
2.	Tradition	20	100
3.	Order	3	15

Table 3 indicates that while selecting products for manufacturing the Namadgars largely followed tradition. Production changes on order basis and adaptation to changing consumer tastes were negligible.

**Table 4: Reasons for not Developing new Products****(N = 20)**

S.No.	Reasons	Respondents	
		Frequency	Percentage
1.	Lack of initiative	19	95
2.	Lack of Marketing help	19	95
3.	No orders from Buyers	18	90
4.	Lack of Awareness	19	95

It is apparent from table 4 that lack of initiative, marketing help, new product orders and awareness were the hindrances in developing new products.

**Table 5: Material other than Felt used for Making felt Products****(N = 20)**

S.No.	Felt Type	Respondents	
		Frequency	Percentage
1.	Joining threads	20	100
2.	Embroidery threads	20	100
3.	Adhesive	20	100
4.	Cotton fabric	15	75
5.	Jute fabric	10	50
6.	Beads	10	50
7.	Bells	10	50
8.	Zippers	3	15
9.	Buttons	5	25

For making products out of handmade felt, the artisans used some other materials also which included mainly joining threads, embroidery threads, adhesive, cotton fabric, jute fabric beads and bells. Zippers and buttons were being used as fastenings in some of the products (Table 5).

**Table 6: Amount of Felt Waste Generated in Tonk Industry****(N = 20)**

S. No.	Time Duration	Amount of waste
1.	Every Week	30-60 kg
2.	Every Month	900-1200 kg
3.	Every Year	2000-3720 kg

Table 6 shows the amount of felt waste generated in the Tonk industry. Every week nearly 30 to 60 kg waste accumulates depending on the size of the units, as told by the respondents.

**Table 7: Selling Price of Waste Felt****(N = 20)**

S.No.	Waste Type	Price
1.	Small Size Pieces	Rs.9-12/kg
2.	Medium Size Pieces	Rs.15 /kg
3.	Large Size Pieces	Rs.20-25/kg

When the felt waste is sold the small size pieces fetched minimum prices, i.e. Rs. 6-9/per kg while medium space to large size pieces are sold at Rs. 10-12/per kg (Table 7).

### Evaluation Outcome of the Sketched Design

One of the objectives of the study was to explore new products utilizing felt. Twenty felt samples were made with the help of coral.

**Table 8: Evaluation Outcome of the Product List****(N = 100)**

S. No.	Product Name	Score	Rank
1.	Baby blanket	79	15
2.	Key stand	81	13
3.	Basket	99	1
4.	Bottle cover	69	21
5.	Footwear	70	20
6.	Cushion cover	89	8
7.	Flower pot	64	23
8.	Folder	95	3
9.	Chapatti cover	90	7
10.	Hand bag	88	9
11.	Towel hanger	61	25
12.	Key ring	74	19
13.	Bandhan wall	83	12
14.	Laundry bag	92	6
15.	Pin cushion	84	11

S. No.	Product Name	Score	Rank
16.	Photo frame	94	4
17.	Pen stand	77	17
18.	Table mat	66	22
19.	Table runner	76	18
20.	Tablet cover	63	24
21.	Tea coaster	93	5
22.	Waist coat	78	16
23.	Wall décor	80	14
24.	Hanging piece	97	2
25.	Wind chain	87	10

Table 4.46 presents the data related to assessment of 25 articles proposed to be made from felt material. The assessment of planned products has been done for short listing of articles to be actually made from felt fabric. The suitability of felt for making products has been evaluated by asking the panel of judges to mark yes or no against each product. Products have been ranked on the basis of score. 12 products out of 25, which get high ranks (rank 1-12), have been selected for construction. Basket gets the highest acceptability and towel hanger gets least acceptability.

#### Evaluation Outcome of the Finished Products



Wind chain



Hanging piece



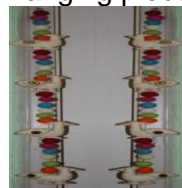
Basket



Pin cushion



Hand bag



Bandhan wall



Photo frame



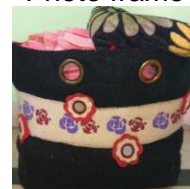
Tea coaster



Cushion cover



Chapati cover



Laundry bag



Paper folder

**Table 2: Assessment of Constructed Felt Products****(N=100)**

Product Description	Utility	Neatness of Construction	Uniqueness	Colour Combination	Product Acceptability	Rank	Price Acceptability		
	WMS	WMS	WMS	WMS	Total WMS		Price (Rs.)	Acceptance (%)	Price (Rs.)
Paper Folder	4.55	4.42	3.03	4.67	16.67	VIII	75*	100	13
Tea Coaster	4.36	4.65	4.47	4.97	18.45	I	150*	100	4(24)
Cushion Cover	4.31	4.73	3.53	4.33	16.90	VII	90	100	3(15)
Chapati Cover	4.07	4.52	3.40	4.11	16.09	X	70	100	1
Laundry Bag	4.33	4.47	4.14	4.09	17.03	VI	150*	100	9
Hand Bag	4.44	4.80	4.60	4.40	18.34	II	350*	100	12
Bandhan Wall	4.62	4.70	4.33	4.50	18.15	III	150	100	8
Wind Chain	4.41	4.75	4.73	4.00	17.89	IV	150	100	10
Hanging Piece	4.48	4.14	3.63	3.70	15.95	XI	45	100	10
Basket	3.98	4.20	4.60	4.53	17.31	V	100	100	1
Photo Frame		4.88	4.40	4.47	18.15	III	145*	100	6
Pin Cushion		4.23	3.40	4.45	16.61	IX	100	100	2

\*Few judges suggested increasing the profit margin.

The weight mean score and rank for utility, neatness of construction, uniqueness and colour combination of finished felt product have been presented in Table 4.47. It is clear that among the tea coaster is liked the most for its uniqueness as well as aesthetic appeal. It can be said that in general felt products have been liked by the judges as their weighted mean score vary from 15.95 to 18.45 out of total weighted mean score of 20.

The prices, price acceptance percentage and orders received for each of constructed utility articles are presented in table 4.47. It is clear from the table that all the products were acceptance by the judges at given price except a few articles like.

The data related to order reveal that among utility articles the tea coaster was ordered by max no. of consumers. It was felt that the orders were influenced by the prices and utility for consumers.

## Conclusion

The present work was carried out to find out variety of ways of manipulating this waste so as to produce value added innovative and low cost products which could support the rural population in earning their livelihood. Adoption of the array of new products will certainly help in upliftment of handmade felt industry. A large base of artisans with low socio- economic and educational status will be benefited. The added products will rejuvenate the industry and consequently help in preserving the textile heritage of India.

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## Depiction of Women Subalterns in Rohinton Mistry's *a Fine Balance*

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Dr. Indu Swami\*\*

### Introduction

Rohinton Mistry is one of the foremost novelists of Indian diaspora who depicts the picture of his motherland with utmost sincerity. He portrays the banal aspects of his country, its varied nuances including political squalor, social ills, religious fanaticism, casteism, inequality, subjugation of women and the underprivileged. The bulk of his writings are preoccupied with his Parsi community and their survival in a cosmopolitan India. Mistry's portrayal of the Parsi community reflects and echoes the difficulties experienced by a disadvantaged group undergoing modernization. His works can be considered as evocative of India's socio-cultural and political complexities between the 1960s and 1990s and the readers are pulled into the repercussions of the political, social, and financial turmoil of historical events. Mistry weaves mainstream politics into the primary plotline of his narrative, which is the fate of the underclass prior to and following India's independence. The novel chronicles the country's period of Emergency in 1975 and Indira Gandhi's assassination in 1984 and it is based on true events about how our country survived political catastrophe. He is not like those diaspora writers who romanticise their birthplace; instead, he has taken it upon himself to expose the vices much like Charles Dickens with a motif of a reformist. His works demonstrate that he is a utopian society enthusiast, and he makes his readers aware of the injustice that the poor face. His works also explore issues of alienation and dislocation, which push individuals to the margins and wreak havoc on their well-being. Mistry has shown the subjugation of lower caste women and even woman from his religion and how that are made subalterns by their family and society.

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The subaltern does not have a voice and agency he/she must be represented. It was Antonio Gramsci (1891-1937), an Italian Marxist, who first used the term 'subaltern' instead of 'proletariat' in his 'Notes on Italian History' and in *Prison Notebooks* (1929-35) subsequently. Gayatri Chakravarty Spivak's perspective on 'subaltern' is somewhat different from that of Antonio Gramsci, who used the term 'subaltern' to indicate some one of 'inferior rank' and for substitution of the word 'proletariat'/'working class', who were under the hegemony of ruling class elite. Spivak tended to find a critical vocabulary to describe the lives and experiences of disenfranchised group of people who were dispossessed historically and exploited both by colonialist elites and bourgeois elites. The word 'subaltern' in martial contexts, it denoted a junior officer, particularly at various grades of lieutenant. From being used as a 'military term' in the eighteenth and nineteenth centuries, the term 'subaltern' encompasses anyone who is outside the social, political, religious and economic hierarchies in the twentieth and twenty-first centuries. The women characters like Roopa and Dina represent two individuals from diverse socio-economic, religious and community backgrounds but both gets exploited and subjugated by the patriarchal society.

#### **Victimization of Untouchable Woman**

Through the narrative of the untouchable Dukhi Mochi and his family, Mistry has expertly presented the marginalisation of the lower parts of society. Dukhi is painfully aware of his condition and the invisible barrier that divides untouchables such as him from the upper castes. He marries Roopa, an untouchable girl, at an early age. While the girls of higher castes are occupied with their academics, Roopa, because of her untouchable status, is left without an education. Her marriage occurs while she is only fourteen years old. A woman is tethered to her husband in the same way as cattle are tethered to their herd. She has no voice in the process. Roopa has a miserable existence as Dukhi's wife, as he works to support his family as a tanner. Roopa's motherly instinct forces her to steal food from the upper caste individuals once she becomes a mother. She could not tolerate her children's sorrow over their lack of food, and she steals cows' milk and fruits from the farms and orchards of higher caste people in the dead of night. While picking oranges from the orchard of a higher caste landlord, she observes the orchard's watchman looking at her. The man tells her to take as much as she wants, but as she fills her bag and prepares to leave, he threatens her with the consequences if he reports the landlord. Roopa begs the watchman for her freedom, but he wants sexual pleasure from her and threatens her, stating that one yell from him would bring the landlord and his men rushing in. The watchman terrifies Roopa even more by warning her that the landlord and his men would strip her, lash her, and rape her alternately. Roopa feels powerless and, picturing the misery that the landlord would inflict not only on her, but also on her husband and children, she accepts the outraged request.

The watchman's exploitation of Roopa demonstrates the superiority of upper castes and patriarchal society. As a woman and an untouchable, Roopa is doubly marginalised. Roopa remains traumatised by her rape; she flees nude in her shattered mental and physical spirit, stopping only when she convinces herself that her rapist is not following her. She returns home and laments over her rape and her powerlessness in the face of the abuse. Dukhi hears her cries but is unable to help her get justice. He was aware of his place in the caste conscious society, but he also wanted to help his wife. Fearful of the higher castes, he sobbed silently. Not only was Roopa's suffering agonizing for her, but it was also devastating for the untouchable Dukhi, as "The rape of one person is translated into an assault upon the community as a whole through the emphasis placed in every culture on women's sexual 'virtue'. The shame of rape humiliates the family and all those associated with survivor" (Women War Peace 2004). Lower-caste women are prone to victimization, as evident from the tale of Buddhu's wife, whose refusal to accept the sexual advances of the landlord's son resulted in her exploitation and humiliation as her hair was shaved and she was paraded naked in the village. As untouchable women, they were incapable of contemplating justice, which remains an imaginary concept for marginalised individuals. The fact that high-caste males are likely to be contaminated just by the shadow of an untouchable man, yet have no issues sleeping with women from the untouchable caste, is an infuriating paradox of Indian culture.

### **Torture of Women from Lower Social Strata**

Avinash's sisters helplessness made them take the ultimate step of suicide to rid themselves of their tormented existence. The treatment of Avinash's sisters exemplifies the injustice that women experience in patriarchal societies. His sisters were not educated and were forced to do domestic chores. Their potential for financial freedom and empowerment was stolen away due to a lack of education and a tethered home sphere. They realised that as they grew older, they were becoming a burden to their family. They were well aware of their family's financial constraints, and with the death of Avinash, the family's lone breadwinner, they realised there would be no one to help them pay for their dowries. Girls are no better than livestock in patriarchal cultures, with the exception that when cattle are sold, money is received, but when a girl is sent to her groom's family, her family must satisfy the groom's family in cash and kind. Dowry is a social sin that drains a girl's and her family's financial resources.

### **Marginalization of Woman from Upper Echelons**

Mistry has not been exclusive in addressing the predicament of Hindu women; through the characterization of the protagonist Dina Dalal, he has also exposed the degradation of his own faith. Dina hails from a wealthy household, since her father is a physician. Her father is a loving human being who leverages his expertise to help

those in need. He also remained a devoted parent who wanted to see his daughter become a doctor like him. However, Dina's life is turned upside down by her father's tragic death. Nusswan, her brother, is quick to impose his dominion as the family's lone male member. Dina's mother was distraught by her husband's death, and did not intervene with Nusswan's takeover of the family. Nusswan's first act as the patriarch is to dismiss the servant and give all household chores to Dina, stating, "We cannot continue in same luxury as before . . . I can't afford the wages" (AFB 18). Nusswan begins to assert his male domination over Dina by relegating her every action. Dina's hairstyle, outfits, and even her companions are all decided solely by him. Dina was not permitted to meet her friends without Nusswan's consent, and even her friends had to get Nusswan's permission to meet Dina. He is also envious of Dina's academic talent, and by prioritising home obligations above Dina's academics, he is able to cut her studies short. Dina protests, but it is in vain since Nusswan is adamant in his judgments. Any resistance from Dina drew Nusswan's rage, and he assaulted her, ripping her clothing and pinching her breasts in one occasion. Her brother's tyranny and harshness utterly enslave Dina. Nusswan discards her to the margins and derives sadistic pleasure from controlling his sister as a patriarch. Kate Millett's comment from *Sexual Politics* is particularly relevant in this case:

Under patriarchy, the female did not herself develop the symbols by which she is described. As both the primitive and the civilized worlds are male worlds, the ideas which shaped culture, in regard to the female, were also of male design. The image of woman, as we know it, is an image created by men and fashioned to suit their needs. These needs spring from a fear of the "Otherness" of woman. Yet this notion itself presupposes that patriarchy has already been established and the male has already set himself as the human norm, the subject and reference to which the female is "other" or "alien" (46-47)

Dina's status in her brother's home after Nusswan's marriage is no better than that of a maid, since she is responsible for all of the household work that should have been divided by her and Nusswan's wife Ruby. Knowing Dina's disadvantaged status, Ruby continues to be domineering in her approach to her and approaches her roughly. Ruby's behaviour demonstrates that women are enemies of their own kind, since she acts like a dictator, copying her husband Nusswan, ignoring her compassion for her unhappy sister-in-law. Dina's sole relief comes from her trips to libraries and music events when out searching for vegetables. She is desperate to be free of Nusswan's tyranny in her life, but as a girl, she has nowhere to turn. As a Parsi girl, she is harassed by Dustoor Framji, the temple priest, who preys on young girls visiting the temple and delights in caressing them under the pretence of placing Holy ashes on their bodies. Dina fall victim to it, but as a result of the experience, she begins to keep a distance from the priest and even ceases to frequent the temple. As with Roopa, Dina is shown as a person who is ostracised twofold for being a woman

and a Parsi. Mistry has attempted to educate his readers through the projection of this incidence that women, even those belonging to his ostensibly progressive community, are victimised by patriarchal system and religious stakeholders. Other priests were aware of Dustoor Framji's warped attitude but chose to remain silent and ignore his deeds.

Dina's love for Rustom begins a joyful chapter in her life, and much to Nusswan's chagrin, Dina marries the love of her life. Dina's idyllic married life is cut short when Rustom is killed in an accident soon after their wedding. Dina reverts to her old ways and returns to live with her brother. He began forcing Dina for remarriage to relieve him from Dina's responsibilities and to get her out of his household. He even goes out of his way to find a suitor so that the marriage may be finalised quickly. Dina, on the other hand, is certain in her desire to remain with her deceased husband's fond memories. Nusswan mocks her about her stubbornness of not availing the privileges of their Parsi community which has no restrictions on a widow's marriage. In this context, Vinita Basantani in *Rohinton Mistry: Representations of Identity: A Critique*, mentions, "The marriage is brought to an unexpected end by the tragic death of Rustom. Sometimes unexpected events ruin human lives, make them powerless and cause disillusionment. The sudden death of Rustom destroys Dina's world. She tries her best to adjust with life but it's not that easy" (40).

Nusswan's motivations for restricting Dina to household tasks and restoring control over her life are clear to Dina. Even though she is aware of the difficult path ahead in achieving financial independence, she gathers psychological strength. Dina's ability to get white collar employment is hampered by her lack of education, but this did not deter her. She takes the first step toward financial independence by working as a hairdresser, but her first endeavour is cut short owing to her Parsi community's orthodox beliefs. She tries her luck at tailoring after failing in her first effort, but she never considers returning to her brother's hegemony. She had the support of Roopa's son Ishvar and her grandson Omprakash in her fight with destiny, since both were seeking for employment after migrating to the city. She keeps Maneck, the son of her classmate Aban, as a paying guest in order to improve her financial situation. Initially, the four struggle to bond and have frequent misunderstandings, with Dina suspecting the uncle-nephew. However, with time, they develop a deep friendship that last a lifetime. Dina's hard work suffers a setback as a result of the emergency scenario, which has placed the country in a state of political lockdown, resulting in economic slowdowns among other things. Dina was unable to rescue her business from being devoured by Emergency's dismal rule. India's social and cultural fabric was badly shattered during the Emergency. Even during moments of governmental upheaval, like as the Emergency, the wealthy and influential elements of society do not suffer nearly as much as the poor. They are victims of a social system that is heavily biased in favour of the country's affluent population. Nusswan's business has been

unaffected by the political instability, and he has hailed the government for their efforts. The state of emergency, on the other hand, has had a negative impact on Dina's modest business. Dina's situation deteriorates to the point that she is unable to pay her rent and is eventually evicted. Dina tries her hardest to resist fate and stay on her feet, but she is crushed to dust and is unable to rise. She returns to her brother's oppressive authority and puts her struggle for dignity and freedom.

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## **A Study of Persons Liable for Registration Under GST and Regulated Unorganized Sector which Increase the Number of Registered Taxpayers Under GST**

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Vrushali Vinay Joshi\*

### **Introduction**

A tax is a compulsory and financial charge on a person or organisation levied by the government to collect revenue to provide the best public facilities and infrastructure to the public. Tax is divided into two parts i.e direct and indirect tax. Indirect tax is charged on goods and services, not directly charged on income and profit. The tax burden can be shifted from one person to another ultimately the last consumer suffers the charge.

Unorganised Sectors, as the name indicates those businesses which are not governed by any official entity i.e. unincorporated like a fisherman or handloom workers. The unorganised sector most of the time depends upon the organized sectors for the selling purpose. To be able to cope with the impact of GST they registered themselves under that advantage goes off. Even if they get the input tax credit, the compliance cost would go up.

A taxpayer is a person or organization subject to pay tax. As per CGST Act 2017, the Definition of 2(107) Taxable Person means a person who is registered or liable to be registered under section 22 or section 24. Any business registered under this Act is involved in the supply of goods and services. Mandatory registration for those who have an aggregate turnover of Rs.40 lakhs or more for Normal Category states and Rs.20 lakhs for the Special Category States in a financial year. Special category states in GST are Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Himachal Pradesh, and Uttarakhand.

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### **Migration of Registration**

- Any persons, who registered under an earlier law (i.e., Excise, VAT, Service Tax etc.), shall be liable to be registered under this Act with effect from the appointed day.
- Where a business that is registered under this Act has been transferred or otherwise, to another person as a going concern, the transferee should get registered from the date of transfer.
- In case of transfer of business by order of Court, Person liable for Registration.

### **Sec: 24 Compulsory Registration in Certain Cases**

- A Person making any inter-State taxable supply of goods is required to be registered under GST irrespective of turnover limit but have some exemption from compulsory GST registration even making interstate supply: -
  - A person making an inter-state supply of services is not required to register under GST if his aggregate turnover is less than Rs 40/20 lakhs.
  - Engaged in the supply of handicraft goods making inter-state supplies exempt from GST registration if they are less than Rs 40 lakhs/20 lakhs per annum.
  - A job worker with a turnover of less than 40/20 lakhs is exempt from registration, even if he makes inter-State supplies to a registered person. This exemption is not available to Jewellery, goldsmiths' and silversmiths' wares and other articles manufactured on job work basis
- Casual taxable person means that do not have a fixed place of business, but if making taxable supply exceed 40/20 lakhs turnover in the previous year.
- Those persons paying tax under the reverse charge mechanism.
- Electronic Commerce Operator who directly or indirectly owns, operates and managed an electronic platform which they can supply goods and services, under the TCS mechanism they are required to deduct tax 1% of the net taxable value of supplies
- A non-resident person or a casual taxable person making taxable supply then has to take compulsory registration.
- Persons who are required to deduct tax under section 51, whether or not separately registered under this Act.
- Persons who make a taxable supply of goods or services or both on behalf of other taxable persons whether as an agent or otherwise.
- Input Service Distributor, whether or not separately registered under this Act.

- Any person supplying online information and database access or retrieval services from a place outside India to a person in India, other than a registered person.
- Such other person is notified by the Government on the recommendations of the Council.

**Person Not Liable for Registration**

- Any business involved in the supply of exempted goods and services.
- An agriculturist, up to the supply of produce out of the cultivation of land.
- On the Recommendations of Government by the notification that person is exempted from obtaining registration.

Earlier, in the VAT structure, any business with a turnover of more than Rs 5 lakh (in most states) was liable to pay VAT. Please note that this limit differed state-wise. Also, in case service tax was exempted for service providers with a turnover of less than Rs 10 lakh.

Under the GST regime, however, this threshold has been increased to Rs 40 lakh, which exempts many small traders and service providers. Earlier to the GST regime, supplying goods through the e-commerce sector was not defined. It had variable VAT laws. All these differential treatments and confusing compliances have been removed under GST. For the first time, GST has clearly mapped out the provisions applicable to the e-commerce sector and since these are applicable all over India, there should be no complication regarding the inter-state movement of goods anymore.

The following table shows:

**Table 1**

Sr. No	Tax	Threshold Limits
1.	Excise	1.5 crores
2.	VAT	5 lakhs in most states
3.	Service Tax	10 lakhs
4.	GST	40 / 20 lakhs (20 / 10 lakhs for NE states)

Under GST, however, there are provisions for online compliance and payment, and for availing of input tax credit only when the supplier has accepted the amount. This has brought accountability and regulation to unorganized industries. Unorganised sectors can able to provide goods or services at a price that is below the tax deducted price that the organised sector discharge.

**Impact of GST on Unorgnising Sector**

Orgnised sectors are partially formalised into The Ministry of Micro, Small & Medium Enterprises (MSME) companies, they are into the GST because of they have

a maximum revenue up to the limit of GST mentioned i.e 40 Lakhs/20 Lakhs. It's also regulated the as home based workers, self-employed workers, hadloom workers registered themselves in to the above category as a Casual taxpayers, Normal Taxpayers and so on.

So that Positive impact on unorganized sectors and The Ministry of Micro, Small & Medium Enterprises (MSME) is independent to get registered and take input tax credit, which enhance their creditability in to the GST.

### **Need of the Study**

This study will help us to examine the person liable for registration including the unorganized sector; it will show the gap between increases in the number of registered taxpayers in the post-GST era. Unorganised sectors before GST always depend upon the organised sectors because they cannot fit into the limits of various indirect taxes like a VAT, and Excise duty. After GST they are independent to register themselves and take the input tax credit.

### **Objectives of the Study**

- To enquire about the person liable for registration.
- To find out the difference between increases in the number of registered taxpayers in the post-GST era and before GST.
- Regulate unorganized sectors.

### **Review of the Literatures**

Milandeep Kour, Kajal Chaudhary, Surjan Singh, Baljinder Kaur studied "A STUDY ON IMPACT OF GST AFTER ITS IMPLEMENTATION" in November 2016, the process of registration for GST is different from other registrations in different ways.

Dr R. Rupa, Associate Professor, SCMS School of Technology and Management, SCMS Campus, Prathap Nagar, Muttom, Aluva, studied "GST IN INDIA AN OVERVIEW" March (2019) GST will Improve Ease of Starting a Business in India and with the implementation of GST in India, the procedure for GST registration would be centralized and standardized similar to service tax registration.

Atul Mittal, blog.saginfortech. "One Year of GST Impact on Unorganised Sector" One positive impact of GST on the organised sector has been in the form of partial formalisation of The Ministry of Micro, Small & Medium Enterprises (MSME) companies. "Now, that they are in the GST net, they can prove that they have basic minimum revenue, which has improved their chances of getting credit from banks. The credit off-take of The Ministry of Micro, Small & Medium Enterprises (MSME) has gone up,"

### Research Methodology

The study attempts at descriptive analysis based on the secondary data sourced from journals articles and media reports. Available secondary data was extensively used for the study.

### Data Collection & Result Analysis

#### Active Taxpayers as on 30th June 2021

**Table 2**

Normal Taxpayers	Composition Taxpayers	Input Service Distributor	Casual Taxpayers	Tax Collect at Source	Tax Deductor at Source	Total	Migrated Out of Total
1,10,15,536	16,66,507	6,972	131	13,034	2,04,789	1,29,07,284	49,83,600

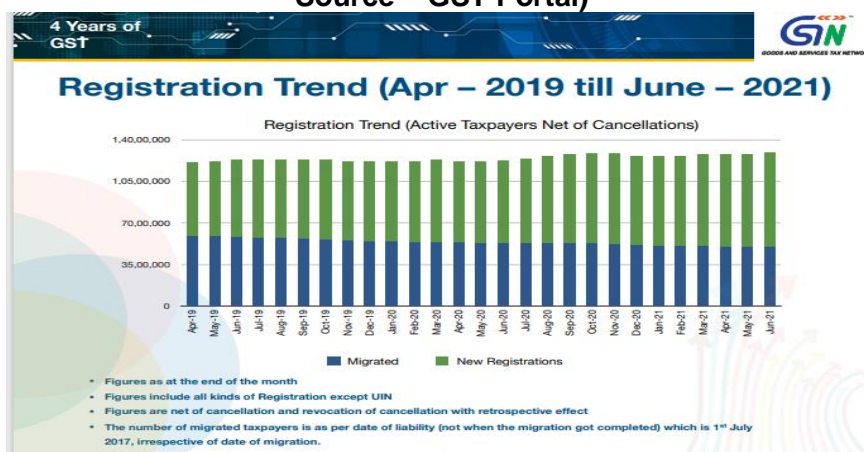
**Graphical Presentation form Table 2**

UIN Holders	Non-Resident Taxpayers	OIDAR
2,265	29	286

Source of the data:[https://tutorial.gst.gov.in/offlineutilities/gst\\_statistics/4YearReport.pdf](https://tutorial.gst.gov.in/offlineutilities/gst_statistics/4YearReport.pdf)

The above chart shows Normal and composition taxpayers higher than the migrated taxpayer. Composition dealers have a limit for registration up to 1.5 crores, so the number of composition dealers is lower than normal and migrated taxpayers. UIN stands for Unique Identification Number & Online Information Database Access and Retrieval services (OIDAR), Input service distributors, Non-resident taxpayers, TDS and TCS collectors are registered less than 10000. Unorganised sectors are registered with the above categories with anyone of them like casual taxpayers, Input service distributors and so on. It shows that the numbers of registrations are increasing under GST with different categories of taxpayers.

#### Month on month trend of GST Registration from Apr-2019 to Jun-2021 (Date Source – GST Portal)



**Graph 1**

(Source:[https://tutorial.gst.gov.in/offlineutilities/gst\\_statistics/4YearReport.pdf](https://tutorial.gst.gov.in/offlineutilities/gst_statistics/4YearReport.pdf))

As per the above chart, the registration trend shows that from April 2019 to up to March 2020 it increasing the graph line of registration with the combination of migrated and new registration, in April 2020 it goes decreasing due to the situation of a Covid-19 as compared to March 2020. Up to June 2020 registration trend slopes do not increase it is equal to the trend of April 2020. After June 2020 it shows an increasing trend in GST registration.

### **Conclusion**

The GST System is basically well structured; tax management comes with technological support. It is completely transparent and more convenient than the previous tax. There is no need of multiple registrations and no confusion of the limit for registration under various laws as before. All the assesses are also included in GST registration so it enhances the number of registered persons. GST regulated unorganized sectors; they can independently register under GST and get the opportunity to take input credit of material. It is also an indication of a more formalised economy. GST aims to reduce corruption and tax evasion in India and will positively impact on the country's GDP in the long run.

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## Soil Pollution: An Overview

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Dr. K.K. Sharma\*

### Introduction

#### Composition of the Soil

Soil is a complex biological system comprising of organic and inorganic material including water and gases in variable proportion. It is an important part of biosphere and is a dynamic entity on which the entire man-kind depends for its food, shelter, etc. The major constituents of soil are as follows:

- **Mineral Matter**

The principle constituents of soil are sand, silt and clay. The distinction between these components is rather arbitrary and is based on the particle size:

Type of the Mineral Particle	Particle Diameter. mm
Stone and gravel	2 and above
Coarse sand	0.2-2.0
Fine sand	0.02-0.2
Silt	0.002-0.02
Clay and colloids	less than 0.002

Particles larger than 2mm diameter are called gravel sand particles in the range 0.02 - 2.0mm in diameter are mainly composed of quartz and silica. Particles of silt in the diameter range 0.002-0.02mm are mainly made up of quartz and other silicate minerals. Particles of diameter less than 0.002mm consist of a variety of silicates, aluminosilicates and colloidal substances. Depending on the proportions of sand, silt and clay present, a soil is described as sandy, sandy loam, clayey loam, clayey etc.

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- **Organic Matter**

The organic matter content of a soil is generally 2-5%. Partially decomposed organic matter present in a soil is referred to as "humus" and the process of formation of humus from plant and animal remains after decomposition by micro-organisms is called "humification". During this process, cellulosic materials disappear, lignin are modified while proteins are retained. In spite of the small quantity present in the soil, humus plays a very vital role in maintaining the porosity of the soil, its nutrient and water retaining capacity and the fertility of a soil. Humus also helps to bind the soil particles in aggregates of smaller or larger size which helps in restricting soil erosion. The top layer of soil consists of organic matter such as plant litter, decaying excreta and remains of a variety of organisms such as bacteria, algae, fungi, protozoa, nematodes, worms, moluses, arthropods etc. The organisms present in the soil are called "Edaphons:.. The amount of organic material in the soil depends on climatic conditions. In temperate regions of the world where decomposition is slow, plenty of organic debris collects in the soil. However, in tropical or subtropical regions, warm and humid conditions cause quick decomposition and mineralization of organic matter takes place.

- **Soil Water and Soil Atmosphere**

Soil water and soil air fill up the space in between the soil particles. The quantity and the movement of water and gases in the soil is determined by the size of the soil particles. Soils with a higher percentage of smaller particles (e.g., Clayey soils) have more inter-particle space, in spite of the smaller pore size. Soils with a higher proportion of larger particles (e.g., Sandy soils) have little interstitial space, in spite of the larger pore size. The water holding capacity of sandy soils is low although most of the water present is available to the plants. On the other hand, the water holding capacity of clayey soils is higher but most it is held tightly by the minerals present in the microscopic pores and is unavailable to the plants. The water present in the soil acts as a solvent for dissolving nutrients and transporting the same to plants. The amount of dissolved nutrients in water depends upon the pH of the soil solution. It is due to this reason that pollutants that affect pH of the soil water indirectly affect the availability of nutrients to the plants. Soil water also helps in maintaining soil texture, arrangement and compactness of soil particles and makes the soil as a perfect habitat for plants and animals." Soil solution is dilute solution of various dissolved solids, liquids and gases. It is held in the soil by capillary or absorptive forces between soils/layers and soil particles. The soil water may be gravitational water, capillary water, and hygroscopic water or combined water.

**Importance of Soil to the Biosphere**

Soil plays a role in determining the quality and composition of the biosphere which develops over it. The multifarious functions of soil are as follows:

- Soil provides mechanical support to the plants.
- Owing to the porosity and water holding capacity of soil, it serves as a reservoir of water and supplies water to the plants through their roots even when the land surface is dry.
- The ion-exchange capacity of the soil ensures availability and supply of macro-nutrients for the growth of plants, animals and microbes. It also helps in preventing excessive leaching of nutrient ions, while maintaining proper pH.
- The colloidal component of soils which comprises of clay micelles and humus particles (less than 0.002mm) tightly adsorb a number of nutrient ions and supply them evenly to the plants.
- Soil contains organotrophic bacteria, nitrifying bacteria, nitrogen-fixing bacteria, fungi, protozoans and other microbes which help in decomposition and mineralization of organic matter and regeneration of nutrients.

### **Types of Soil-Textures**

The following types of soil texture are generally distinguished.

- **Clayey Soils:** The particle size of clay is less than 0.002mm. They have very small interspaces and hence inhibit free circulation of water and air. They tend to become water logged and are unsuitable for growth of plants.
- **Sandy Soils:** They consist of loose and dry sand particles. They have poor water holding capacity and low nutrient content.
- **Loam Soils:** They contain sand, clay and silt nearly equal proportion. These soils are the best for copious plant growth. Depending upon the proportion of sand, clay and silt, they are further categorized as sandy-loam soils, clay-loam soils and silt-loam soils. Unlike sandy-loam and clay-loam soils, the silt-loam soils are not suitable for plant growth.

### **Accumulation of Salts in Soils**

Soils may consist of soluble salts such as chlorides, nitrates, sulfates, carbonates and bicarbonates of sodium, calcium and magnesium.

Accumulation of exchangeable sodium in soils is called "Alkalization of soils". Build-up of large quantities of sodium makes the soil alkaline, which is unsuited for plant growth."

Concentration of soluble salt in the soil is called "Salinization of soil". In arid regions of Rajasthan and Gujrat, leaching out of soluble salts is not so complete as compared to that in humid regions. Higher rate of evaporation and restricted drainage further adds to the salt concentration in the soils.

Soils affected by salts may be of the following three types:



- **Saline Soils:** These contain a high concentration of soluble neutral salts and small quantities of sodium. The excess soluble salts comprising of sulphates and chlorides of sodium, calcium and magnesium can be readily leached out of these soils.
- **Saline Alkaline or Sodic Soils:** These soils are formed as a result of both alkalization and salinization of soils. They contain high concentration of neutral soluble salts and moderate quantity of absorbed sodium ions. Their pH may be about 8.5.
- **Non-saline Alkaline (Sodic) Soils:** These contain high concentration of sodium ions. Their pH may be 8.5 to 10 due to hydrolysis of  $\text{Na}_2\text{CO}_3$  present.

Reclamation of sodic soils is achieved by replacing sodium ions by calcium ions with the help of gypsum followed by leaching to remove the sodium sulphate formed. Other soil amendments include application of calcium chloride, phosphogypsum, basic slag, sulphur, sulphuric acid, iron pyrites, aluminium sulphate etc. Salt resistant crops such as cotton, barley, sugar beat, paddy and alfa-alfa are recommended for these soils.

#### **Sources of Soil Pollution**

Soil pollution differs from water pollution or air pollution, because the pollutants remain in direct contact with the soil for relatively longer periods and hence alter the chemical and biological properties of the soil. The hazardous chemical can also enter the human food chain from soil or water plants.

The major sources of metallic contamination of soils include mining, smelting, sludge, fertilizers, pesticides, composted town refuse etc. Metals such as Cd, Pb, Hg, Ni, Mo, Ni, Cr etc., are toxic to plant and animal life.

Indiscriminate dumping of industrial wastes and municipal wastes leads to the leaching and / or seepage of toxic substances into the soil and pollution of ground water. Further due to some modern agricultural practices, obnoxious pesticides, fungicides, insecticides, biocides, bactericides, etc., contaminate land. Direct pollution of soil by dangerous pathogenic organisms is also important.

Fly ash generated from thermal power plants, industrial waste discharged into streams or dumped into the surrounding land, mining wastes, non-biodegradable, heavy metal sludges etc, cause serious water and soil pollution problems.

Commercial and domestic urban wastes consisting of dried sewage sludge as well as garbage and rubbish materials such as plastics metal cans, glasses, street sweeping, waste paper, fibers, rubber etc., contribute to soil pollution."

Human and animal excreta, farm wastes, soil conditioners, soil fumigants, radioactive wastes, etc., also cause soil pollution.

### Effects of Soil Pollutants

"Soil pollution" was originally defined as the contamination of the soil system by considerable quantities of chemical or other substances, resulting in the reduction of its fertility or productivity with respect to the qualitative and quantitative yield of the crops. However, if some of the contamination are such that if they are taken up by the plants (with or without any detrimental effects on them), and enter into the food chain and impart detrimental or toxic effects on the consumers, then that also should be treated as soil pollution.

Soil pollution is receiving greater and greater attention due to its direct impact on public health. The major effects of various types of pollutants are given below:

- **Effect of Modern Agricultural Practices**
  - **Synthetic Fertilizers:** Synthetic fertilizers are employed to increase the soil fertility and crop productivity. These fertilizers concentrate the essential nutrients in layer of top soil. However, the soil enriched by chemical fertilizers cannot support the microbial floras which are so essential to enrich the humus that helps in plant growth. Excessive and indiscriminate use of chemical fertilizers may result in the following undesirable effects:
    - Wheat, maize, corn, etc., grown on soils fertilized with NPK fertilizers may result in considerable reduction in protein content of the crop.
    - Excessive use of nitrogenous fertilizers leads to the accumulation of nitrates in the soil which may contaminate the ground water. Nitrate concentration exceeding 90ppm in drinking water may lead to diarrhoea, blue Jaundice (Cyanosis) in children, 'methemoglobinemia" (or blue baby syndrome) in infants. Further, the nitrates and nitrites entering the human body may be eventually converted nitroso amines and other nitroso-compounds which are suspected to cause stomach cancer. Surveys in Rajasthan and other parts of the country indicated much higher nitrate levels than the permissible 45ppm levels.
    - Vegetation in nitrate-rich soils may exert toxic effects in cattle.
    - Excessive use of chemical fertilizers may enter the water bodies and contribute to "eutrophication". (Eutrophication is the excessive growth of algae and aquatic plants to undesirable levels).
    - Excessive use of chemical fertilizers may reduce the ability of plants to fix nitrogen.
    - Excessive quantities of potassium fertilizers in soils may reduce the quantities of valuable ascorbic acid (vitamin C) and carotene in fruits and vegetables grown in such soils.
    - The large sized fruits and vegetables grown in highly fertilized soils may be more vulnerable to attacks by pets and insects.

## Pesticides

As per the reports of the World Health Organization (WHO), about 50,000 people in developing countries are poisoned and about 5,000 people die because of improper use of pesticides and other chemicals in modern agricultural practices.

Pesticides pose potential hazards to animals, humans and aquatic life. They also cause deleterious effect on soil fertility and crop productivity. Pesticides applied to crops are retained in the soil in considerable quantities. They enter into cyclic environmental processes such as absorption by soil, leaching by water, etc., and contaminate both lithosphere and biosphere. Pesticides including herbicides, fungicides and rodenticides, are persistent pollutants. Owing to interactions between lithosphere and biosphere, pesticides may enter the food chain and pose serious health hazards. Some of them undergo metabolic transformation and bio-degradation. The degradation products of some of the pesticides are more dangerous than their respective parent compounds. Some of the pesticides residues are carcinogenic while their metabolic products are toxic. The rate of degradation of pesticides depends upon their properties and structural characteristics.

The following types of pesticides are commonly used:

- Chlorinated hydrocarbons (e.g., DDT, Aldrin, Dieldrin, Lindane, BHC etc.)
- Carbamate compounds (e.g., Carboyl or Sevin, Zectrion etc.)
- Organo-Phosphorous compounds (e.g., methyl or ethyl parathion, melathion, guthion etc.) Inorganic compounds (e.g.,  $AS_2O_3$ ,  $PbO_2$ ,  $NiCl_2$ ,  $CuSO_4$ , etc.)
- Miscellaneous compounds (e.g., organic mercurial's, 2,4D; 2,4,5T etc.)

Some of the adverse effects of pesticides are given below:

Some arsenic pesticides may render the soil permanently infertile.

- Pesticides residues in soil may be taken up by plants and cause phytotoxicity. They may enter the aquatic environment and enter the food chain.
- Pesticides such as, Aldrin, dieldrin, DDT, heptachlor etc., may seep through the soil and contaminate ground water and surface water.
- Fruit, vegetables, rice, wheat, barley, maize etc., are known to contain considerable quantities of toxic pesticides residue such as of DDT, BHC and other organochloro pesticides.
- Polychlorinated biphenyls (PCB) having half-life periods of about 25 years in soil are among the most hazardous soil pollutants. They may accumulate in soil and plants and when they eventually enter the animal or human body, they may cause severe health disorders including eye damage, skin problems, nervous disorders, fetus deformities and liver or stomach cancer.

- Irrigated water from pesticides contaminated soils may evaporate and spread the toxic pesticide vapours in the atmosphere.
- DDT can enter the food chain and accumulate in human fats and may lead to disorders such as impotency.
- Persistent pesticides can damage human tissues and interfere with the normal metabolic activities by disturbing enzymatic functioning.
- Chlorinated pesticides and herbicides are hazardous soil pollutants which can affect the soil texture and damage the ecosystem.
- Herbicides such as dioxan may cause congenital birth defects in offspring.
- Hunting birds feeding on grains contaminated with DDT are threatened of extinction.
- Organophosphate pesticides may cause muscular disabilities, tremors and dizziness.
- Excessive use of synthetic pesticides may lead to defoliation of forests and adverse effect on fauna and flora.
- Farm animals drinking stagnant water in fields sprayed by pesticides developed toxic symptoms and some mortality were reported.
- Farmers and farm workers are particularly prone to pesticide poisoning because of greater exposure while handling and spraying.
- Accidental spillages and leakages in pesticides manufacturing industries cause disastrous effects on the people residing in nearby areas due to pollution of air, water and soil. The Bhopal tragedy on 3rd December, 1994 is a lingering example.
- Contaminated soil may act as potential carriers of pathogenic bacteria and other dangerous organisms which may endanger human health.
- Volatile pesticides may cause pollution of air in the surrounding areas.

- **Effect of Industrial Effluents**

Soils, liquid and gaseous chemicals from various industries such paper and pulp, iron and steel, fertilizers, dyes, automobiles, pesticides, tanneries, coal-based thermal power plants etc., contain a variety of pollutants such as toxic heavy metals, solvents, detergents, plastic, suspended particulates, and refractory/non--bio-degradable/recalcitrant chemicals. If they are not properly treated at source, they give rise to water, air, and soil pollution. Fly ash resulting from coal-based thermal power plants is one of the alarming and continuously increasing sources of soil- pollution leading to degradation of soil, apart from water and air pollution in the nearby areas. Some trade wastes such as tannery wastes may contain pathogenic bacteria.

Indiscriminate dumping of untreated or inadequately treated domestic, mining and industrial wastes on land is an important source of soil pollution.

Fall out of gaseous and particulate air pollutants from mining and smelting operations, smoke-stacks, etc., is a major source of soil pollution in nearby areas.

- **Effect of Urban Wastes**

Millions of tonnes of urban waste are produced every year from critically polluted cities. The inadequately treated or untreated sewage sludge not only poses serious health hazards but also pollutes soil and decreases its fertility and productivity. Other waste materials such as rubbish, used plastic garbage, sludge, dead animals, waste medicines, hospital wastes, skins, tyres, shoes, cans, etc. also cause land and soil pollution. Some solid wastes may cause clogging of ground water filters. Suspended matter present in sewage can act as a blanket on the soil and interfere with its productivity.

Apart from the above major sources, radioactive waste dumped in the soil from natural and man made sources, soil erosion due to deforestation, unplanned irrigation and unscientific agricultural practices also result in land and soil pollution.

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