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PANDEMIC & REVOLUTION IN EDUCATION

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ABSTRACT

Education is the tool to modify one's skill in right direction. As the growth of nation is depend on the youth's progress and youth progress is measured through the education system prevailing in the country. In today's era education and technology are go hand in hand. Covid-19 has steered education sector towards technology. Due to some technical & infrastructure incapability online mode is not favorable, blended learning can be accepted post covid-19.

Keywords: Education, Covid-19, traditional & modern method of learning.

1. INTRODUCTION:

Education has begun in prehistory where adults used to train the younger which was gained through imitation. As story-telling, skill from one generation to next slowly and gradually as time passes various systems of education emerges. Teaching methodology has been also changed from "Gurukul" to "School". Education helps the individual to sharpen their skill, values, morals etc. Education can be taken place in formal, informal ways. Vocational Education has been added since decades, favorable response has also noticed in such area.

As world is facing tremendous issues due to pandemic (Covid-19), which has led impact on all aspects of life including education. During mid of March 2020 almost whole world had bared such unknown calamity. Many of wage workers Industries, school, colleges, cinema, restaurant etc. were closed down completely up to five months. Though we all are witnessed the ill effect of Covid-19 but there are some positive activities are also noted. Developing countries like India where more than 90% education were prevailing through offline mode, but due to outbreak of pandemic teaching learning organizations has adopted to online mode. Since the lockdown announced as other sectors were closed but learning part was still open. Educators have started learning the skill to deliver lectures via use of different software. It is noted the period from March 2020 to June 2020 many of the institutions has arranged various webinars, workshops, faculty development programme etc. to make teachers familiar with modern teaching. All age group of teaching fraternity welcomes modern learning system it's because of pandemic. Despite of lots of problem in all over the country with respect to IT infrastructure, network, electricity, educators has moved ahead to the path of modern learning. It is seen many of courses viva- voce held online including doctor of philosophy, it proves the axiom "Where is a will there is a



A study on repercussion of COVID-19 on common people – India

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ABSTRACT

The purpose of this paper is to present day to day problems faced by common people during COVID-19 pandemic. This pandemic have put the world in predicament. The world is confronting infinite challenges related to social life, personal life, economy, security, medical infrastructure, international relations, etc. Pandemic have tremendous affect on everyone's life. Humankind is living in trauma. " COVID-19 is a common enemy that does not care about ethnicity or nationality, faction or faith. It attacks all, relentlessly." Said António Guterres Secretary General of UN. Each and every individual is facing numerous problems due to this pandemic. Most of the places in world are lockdown, consequently life of people is modified. Primary source is used to collect information from common people. To evaluate the impact of COVID-19 on the life of common people. To understand the problems faced by common people during this pandemic. It is desired that the bottom line of this study would contribute to the understandings of major problems faced by common people in COVID-19 pandemic.

INTRODUCTION

PANDEMIC is defined as " an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people". The **COVID-19 pandemic**, also known as the Coronavirus pandemic, is an ongoing pandemic caused by the transmission of severe acute respiratory syndrome Coronavirus 2 (SARS – COV – 2). The outbreak was declared a Public Health Emergency of International Concern in Jan 2020. In Dec 2019, many cases of pneumonia of unknown cause in the city of Wuhan were reported. The virus consists of a core of genetic material surrounded by an envelope with protein spikes. This gives it the appearance of a crown. The word Corona means "crown " in Latin. Symptoms may include respiratory symptoms, fever, cough, shortness of breath, breathing difficulties, fatigue, sore throat, etc. **TRANSMISSION** can occur more easily in the crowded places with many people nearby; close – contact, etc. It spreads mainly when an infected person is in close contact with another person. **PRECAUTIONS** should be taken to prevent from infection by hand hygiene using hand sanitizers and washing hands, avoid touching eyes, nose, and mouth, wear a medical mask, maintain social distancing, etc.

LOCKDOWN IN INDIA DURING PANDEMIC COVID-19

On 23rd March 2020, the Government of India under Prime Minister Narendra Modi ordered a nation wide lockdown for 21 days, it was ordered after 14 hour voluntary public curfew on 22nd March 2020. The lockdown was placed when the number of confirmed positive coronavirus cases in India was approximately 500. The first phase of lockdown was from 25th March to 14 April of 23 days . The second phase was from 15th April to 3rd May of 19 days. The third phase was from 4th May to 17th May of 14 days . The fourth phase was from 18th May to 31st May of 14 days. After that unlockdown have began.

ECONOMIC& SOCIALPROBLEM'S

Micro and Macro economic problems in an economy follows increase in poverty, Unemployment, affected birth rate and death rate, Inflation, Adverse purchasing power, loss of investment, adverse impact on national income, food chain supply, government budgets, etc. The Social problem is usually taken to refer social conditions that disrupt or damage society such as increase in crime rate, racism, casteism, inequality, discrimination on basis of various grounds, etc. A social problem is something that threatens the values of society such as law and order and social cohesion.

STRESS

Stress can defined as a degree to which one feel to unable to cope as result of pressures that are unmanageable. Stress can cause feeling of fear, anger, sadness, worry, numbness or frustration. It might lead changes in appetite, difficulty sleeping or nightmares. Sometimes it leads to physical problems such as headaches, body pains, stomach problems.

More often, it may increase consumption of tobacco, alcohol and other substances. Worsens of chronic health problems are results of stress.

❖ **RESEARCH PROBLEM**

COVID-19 led to an adverse impact on everyone's life. The mankind is living in trauma. Mankind is facing many economic, social, psychological problems during this pandemic. Life style have been changed. Many services are inaccessible nowadays. Most of people have lost their loved one's. Therefore, it is important to study the repercussion of COVID-19 on life on common people. Hence this research intended to explore the consequences faced by common people due to COVID-19 pandemic.

❖ **OBJECTIVES OF THE STUDY**

This study is conducted to determine the problems of common people during COVID-19. Specifically study aims to:

- To evaluate the impact of COVID-19 on the life of common people.
- To understand the problems faced by common people during this pandemic.
- To understand the economic, social challenges faced by common people.
- To understand the psychological and health problems suffered during this pandemic.

❖ **HYPOTHESIS**

COVID-19 have adversely impacted life of common people.

Common people are facing social, economic, health, psychological challenges due to COVID-19.

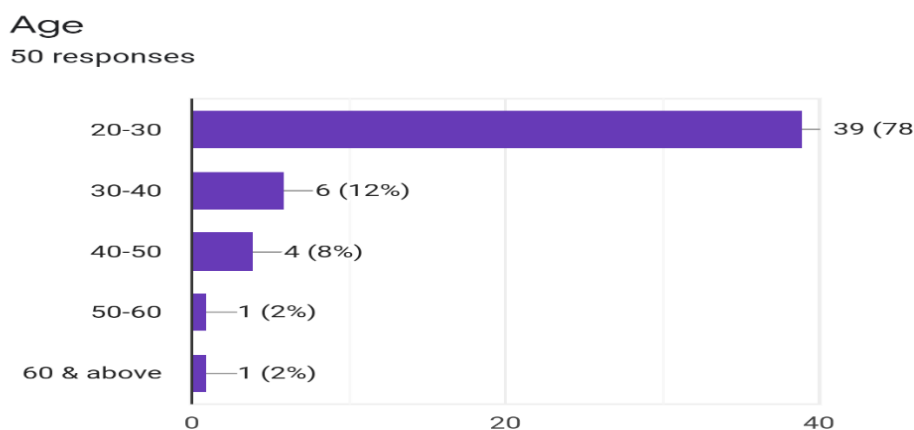
❖ **METHODOLOGY**

The study is both descriptive and analytical in nature. The descriptive study uses primary method to obtain the needed data and to determine the problems of common people during COVID-19 pandemic. Common people were asked to fill questionnaire through mails to find out their problems, current circumstances, and assistance received. Secondary data is collected from newspapers, journals and information from the websites. Sampling size is 50 respondents, each of them were given questionnaire through mail. All appropriately fulfilled questionnaires were retrieved, prepared, organized and compiled for analysis of data.

❖ **ANALYSIS AND INTERPRETATION**

Empirical evidence relating to impact of COVID-19 on the life of common people is discussed.

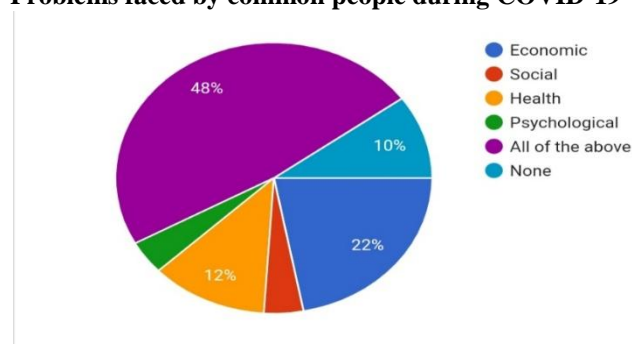
Figure 1 Age wise break of the respondent's
(Source : surveyed data)



Interpretation:

The above graph shows that 78% of the respondents are in the age group of 20 – 30 years, 12% are in the age group of 30 – 40 years, 8% are in the age group of 40 – 50 years, 2% are the respondents in the age group of 50 – 60 years and 2% above 60 years.

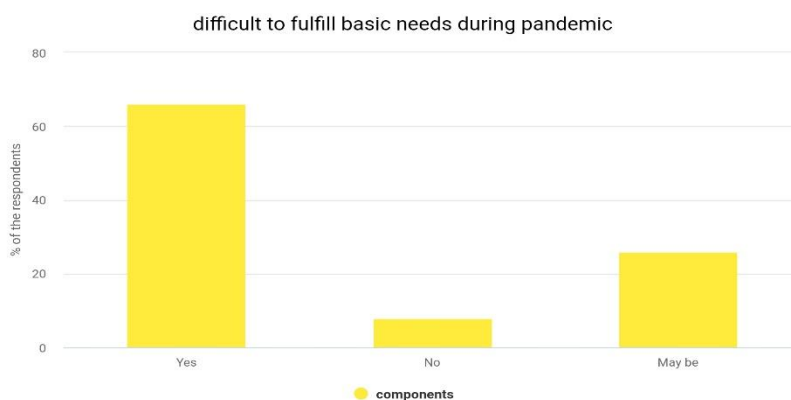
Figure 2
Problems faced by common people during COVID-19



Interpretation:

The above pie chart shows that 48% of the respondents have faced all the problems. 22% of the respondents have faced economic problems. 12% of the respondents have faced health related problems. 4% of the respondents have faced psychological problems. 4% of the respondents have faced social issues and 10% of the respondents have faced none the problems mentioned above.

Figure 3
Difficult to fulfill basic needs during pandemic

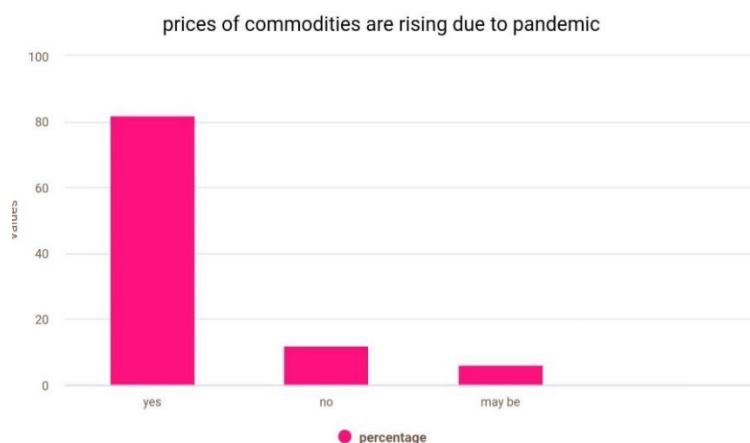


Interpretation:

The above chart resents that 66% of the respondents feel that it is being difficult to fulfill basic needs during this pandemic whereas 26% are not sure and 8% respondents have responded no.

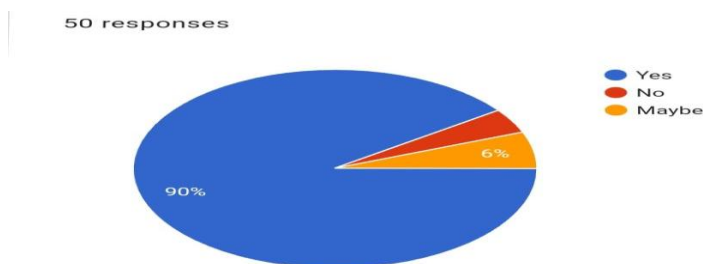
Figure 4
Prices of basic commodities are rising due to pandemic

Interpretation:



The above bar graph shows that 82% of the respondents feels that prices of commodities i.e., general price level is rising due to pandemic, whereas 12% have responded no and 6% of the respondents are not sure.

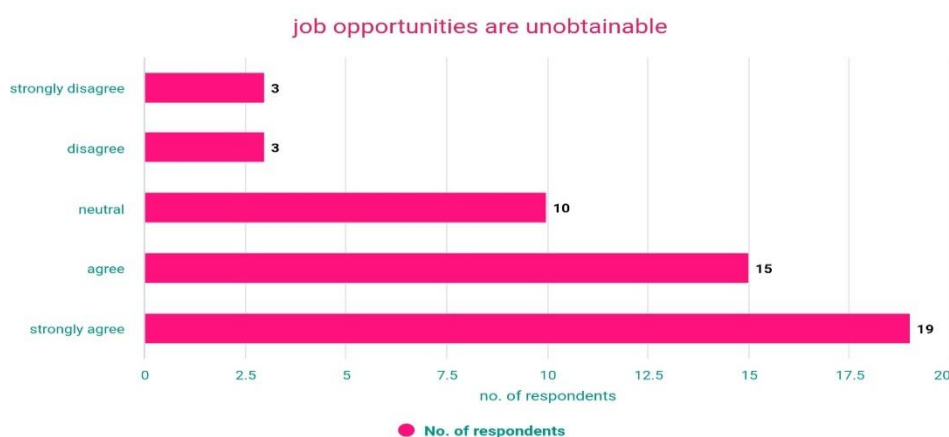
Figure 5
Income of many have lost due to pandemic



Interpretation:

The above pie diagram shows that 90% of the respondents agree that due to pandemic common people have loose their source of livelihood, their income. 6% of the respondents are not sure and 4% does not feel loss of income due to pandemic.

Figure 6

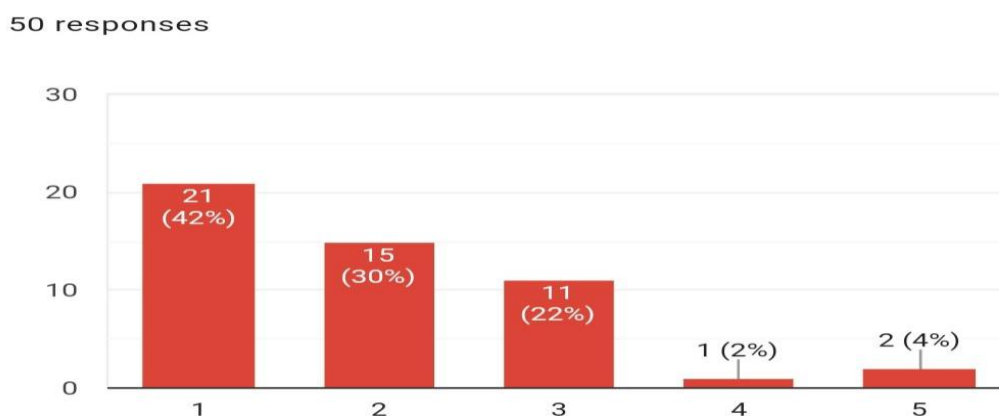


Jobs opportunities are unobtainable

Interpretation:

The above Horizontal bar graph shows that 19 respondents are strongly agree, 15 respondents are agree, 10 respondents think statement is neutral statement, whereas 3 respondents are disagree and 3 respondents are strongly disagree.

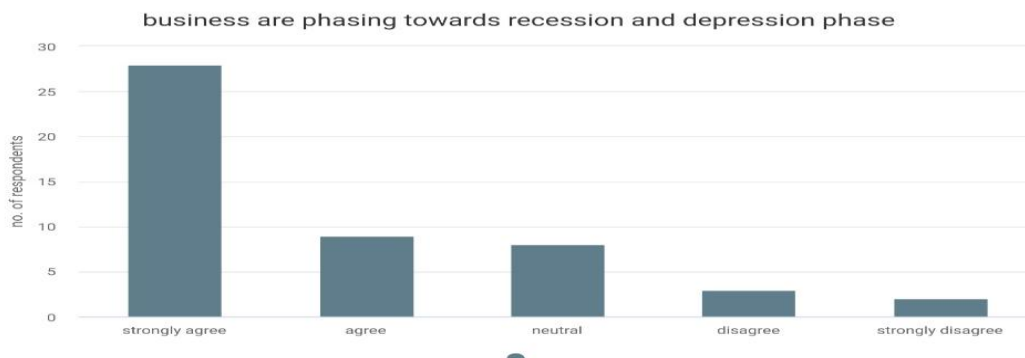
Figure 7
To manage household expenses is being difficult



Interpretation:

The above bar graph represents that 42% respondents are strongly agree with the statement of managing household expenses is being difficult during this pandemic, 30% are agree, 22% acted neutral, 2% are disagree and 4% are strongly disagree.

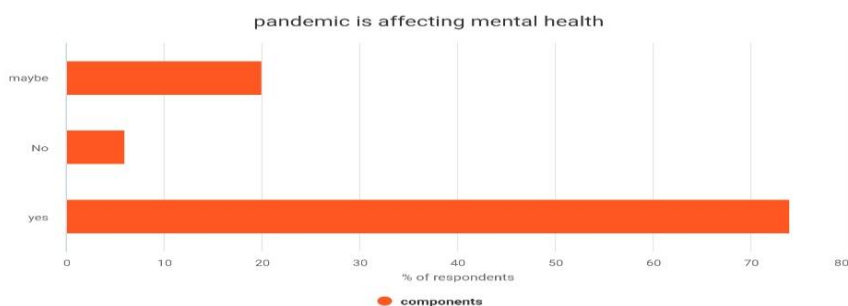
Figure 8
Business are phasing towards depression and recession phase



Interpretation:

The above bar graph represents that 28 respondents strongly agree with the statement business are phasing towards recession and depression phase, 9 respondents are agreed, 8 responded neutral 3 are disagree and 2 are strongly disagree with the statement.

Figure 9

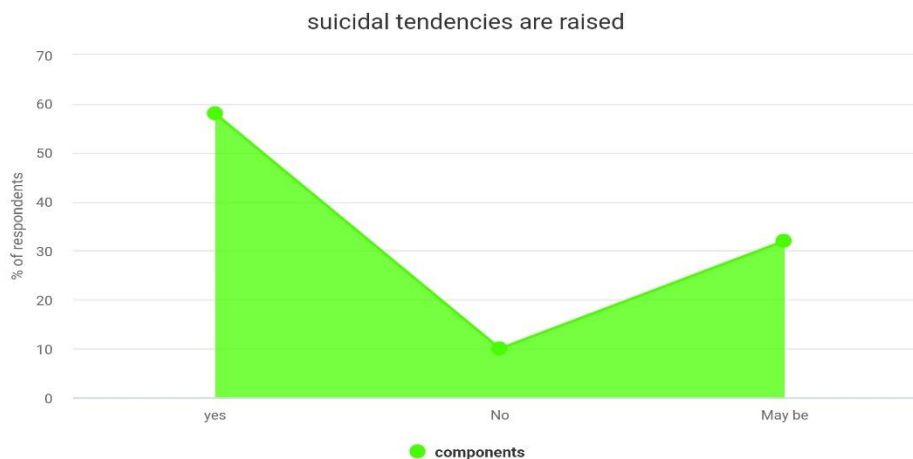


Pandemic is affecting mental health

Interpretation:

The above Horizontal bar graph shows that 74% of the respondents believes that pandemic is having adverse impact on mental health of people, whereas 20% are not sure, and only 6% respondents don't believe that pandemic is having adverse impact on mental health of people.

Figure 10
Suicidal tendencies have raised

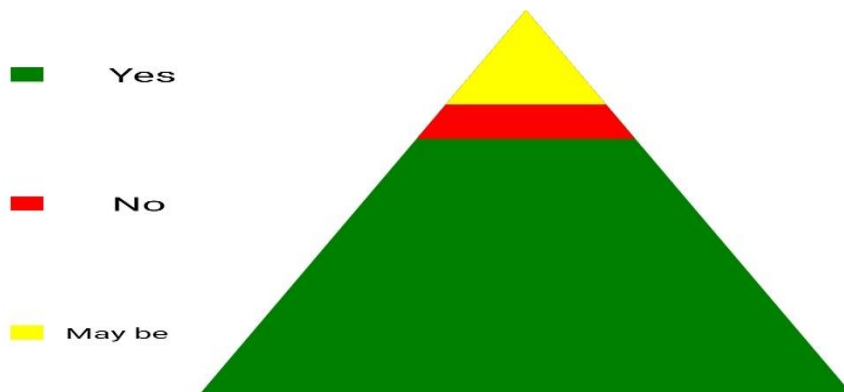


Interpretation:

The above graph shows that 58% of the respondents feels that suicidal tendencies are rising during this pandemic, 22% respondents think might be the suicidal tendencies are rising and 10% of the respondents don't believe with the statement.

Figure 11

Many people are being alcohol addicted due to stress and trauma faced in this pandemic

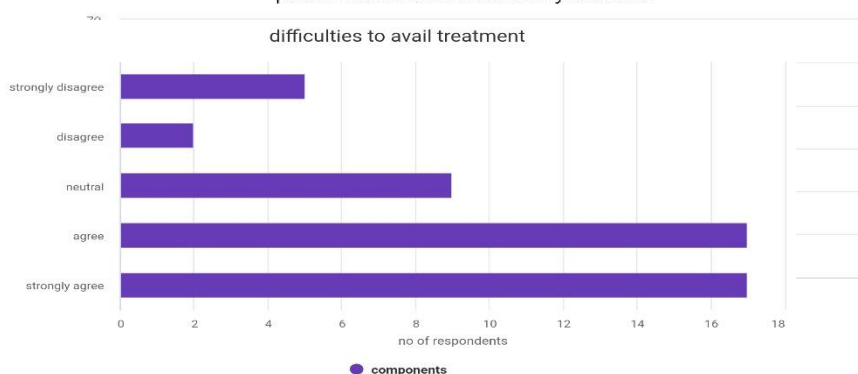


Interpretation:

The pyramid shows that more than half of the respondents feel that many people are getting alcohol or drug addicted due stress or trauma faces during pandemic.

Figure 12

pandemic have affected family relations



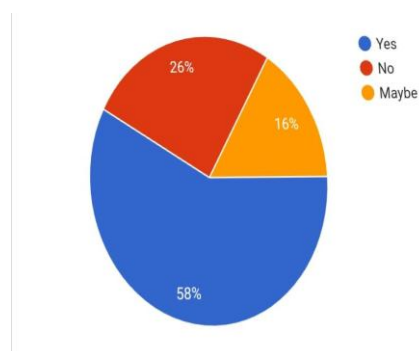
People faces difficulties to avail treatment of COVID-19

Interpretation:

The above horizontal graph represents that 17 respondents strongly agree with the statement that it's being difficult to avail treatment of COVID-19, 17 respondents are agree, 9 have responded neutral, 2 are disagree and 5 are strongly disagree with the statement.

Figure 13

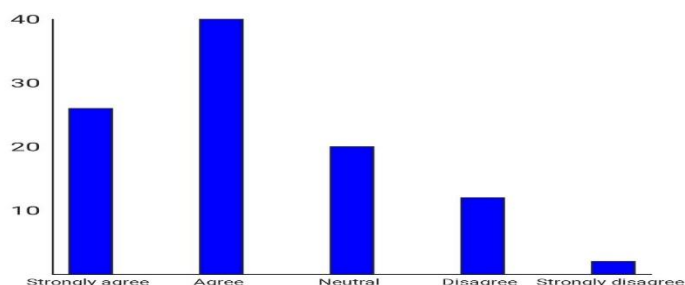
Crimes are rising due to pandemic



Interpretation:

The above pie chart represents that 58% respondents believe that crimes are rising during this pandemic situation, where as 26% think might be and 16% have responded no.

Figure 14
Medical treatment for health issues other than COVID-19 is also not easily accessible

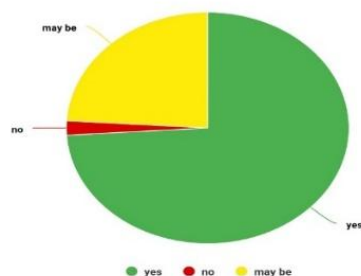


Interpretation:

The above graph shows that 26% respondents are strongly agree with the statement medical treatment for health issues other than COVID-19 is also not easily accessible, 40% are agree, 20% think neutral, 12% are disagree and 2% are strongly disagree.

Figure 15
Pandemic have affected to religious and cultural life of people

pandemic have affected religious and cultural life of people



Interpretation:

The above pie chart shows that more than half of the respondents have agreed with the statement that pandemic have affected religious and cultural life of people.

❖ FINDINGS AND CONCLUSION:

Major findings of the study are as follows:

- Common people are facing economic, social, psychological, health problem. 48% of the respondents are facing all the mentioned problems.
- Due to alarming increase in unemployment, many people resorting to criminal activities to make ends meet. The no. of street crimes in India has spiked.
- Authorities have also reported an increase in cybercrime since the start of pandemic.
- As many as 21 million salaried jobs have been lost between April and August 2019 according to CMIE (Centre of Monitoring Indian Economy).
- There had been sudden spurt in domestic violence, trafficking of women and children during pandemic reported by parliamentary standing committee on Home Affairs.
- The number of divorce and domestic violence cases in Mumbai were 1280 and after pandemic raised to 3480, Delhi 1080 to 2530, Bengaluru 890 to 1645 reported by BBC News.
- Many problems are faced to avail treatment of COVID-19 and other health treatments are also not easily accessible.

CONCLUSION

Pandemic have adversely impacted life of common people. The findings in the study give evidence that supports the hypothesis. The life of people is in dilemma. Pandemic have resulted to disruption in social and economic life of people. Mankind is living in trauma resulting to many psychological challenges. The opinion of the respondents and findings of the study give strong support to the conclusion that pandemic have adverse impact on life of common people in many ways.



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INTERNATIONAL E-CONFERENCE
ON
INNOVATIVE RESEARCH TRENDS IN LIFE SCIENCES
(3rd, 4th & 5th December 2020)



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Department of Life Sciences
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CERTIFICATE

This is to certify that

Dr. Abhijit Sahasrabudhe, Dept. of Botany, D.S.P.M, s K.V. Pendharkar College of Arts, Sci. & Com., Dombivli (E) Mumbai has participated in the International e-Conference on Innovative Research Trends In Life Sciences (ICIRTLS-2020) held during 3rd to 5th December 2020 and organized by Department of Life Sciences, Shri Shivaji College of Arts, Commerce and Science, Akola (MS) in collaboration with Indian Science Congress Association- Amravati chapter (MS). He/ She has presented his/ her research paper entitled as **Anti-dandruff activity of Garcinia indica**

as e-poster/ oral e-presentation.

The organizers acknowledge his/ her contribution and cooperation.

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Principal & Chief Organizer
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Convener
ISCA-Amravati Chapter

Carbon Nanofibers Fundamentals and Applications

Edited by Madhuri Sharon and Maheshwar Sharon

Walchand Center for Research in Nanotechnology & Bionanotechnology, WCAS, Solapur,
India

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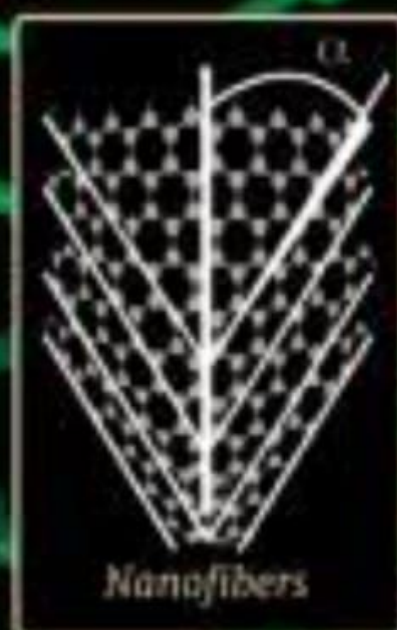
CARBON NANOFIBERS

*Fundamentals
and Applications*

Edited By

MADHURI SHARON

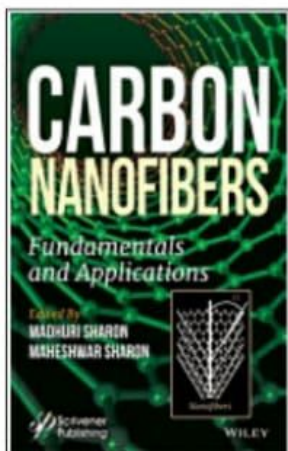
MAHESHWAR SHARON



 **Scrivener
Publishing**

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Carbon Nanofibers: Fundamentals and Applications



Madhuri Sharon, Maheshwar Sharon

Wiley, 16-Mar-2021 - Technology & Engineering - 430 pages

★★★★★

0 Reviews

This book covers the fundamentals and applications of Carbon Nanofiber (CNF). In the first section, the initial chapter on the fundamentals of CNF is by Professor Maheshwar Sharon, the recognized "Father of Carbon Nanotechnology in India", which powerfully provides a succinct overview of [More »](#)

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one. We haven't found any reviews in the usual places.

Bibliographic information

Title	Carbon Nanofibers: Fundamentals and Applications <i>Advances in Nanotechnology and Applications</i>
Authors	Madhuri Sharon, Maheshwar Sharon
Publisher	Wiley, 2021
ISBN	1119768810, 9781119768814
Length	430 pages
Subjects	Technology & Engineering › Materials Science › General Science / Chemistry / General Technology & Engineering / Materials Science / General



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EndNote

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TO STUDY THE IMPACT OF JOB INCENTIVES ON MOTIVATION LEVEL OF HOUSING COMPLEX SECURITY GUARDS IN DOMBIVLI –KALYAN CITY.

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ABSTRACT:

Motivation is the extent to which an employee feels committed, energised and satisfied with their jobs and incentives are tools employers use to reward satisfactory work and encourage employee commitment and long stay in the workplace and ensure high level of motivation. Convenience sampling data collection method was used on sample size of 180 employees from security guard profession. This study has found that security guards are satisfied with their pay and resources given to them by their employers. However, job insecurity threatens them and thus lack longevity and commitment. But when bonus received occasionally as an incentive besides pay motivates them since they have dependents to be served on sole meagre salary. Employer must offer generous incentive system to ensure security guards feel committed, energised and satisfied with their jobs.

Keywords: Security guards, motivation, incentives and rewards, satisfaction

1. INTRODUCTION

Safety and security needs have always been primary for the human race.

The evolution and growth of planned societies have brought few complexities and threat to human life and mostly in urban areas. Like several other occupations and its relevance in the society the role of security guards too have severe implication on the demand for the safety and security of life and assets. They are the first respondent who are succumbed to risks and threats in the act of safeguarding the assets or people they are held responsible for several studies have explored the nature of employee job satisfaction. However, limited studies have been conducted on job satisfaction of those employed in the security guard occupation several studies have explored the nature of employee job satisfaction. However, limited studies have been conducted on job satisfaction of those employed in the security guard occupation. Several studies have explored the nature of employee motivation and job satisfaction, however limited studies have been conducted on motivational level of those employed in the security guard occupation.

2. OVERVIEW OF CONCEPTS:

2.1 Employee incentives are tools employers use to reward satisfactory work and encourage employee commitment and long stay in the workplace. When an employer wants to improve productivity among its employees' incentives are the only option to keep them engaged in their work which in turn results in high employee retention and productivity.

Incentives at work can be offered in the form of-

- **Compensation incentives-** It may include items such as raises, bonuses, profit sharing, signing bonus, and stock options.
- **Recognition incentives** – It includes generous actions such as thanking, praising and recognising employees.
- **Reward incentives-** It includes offering gifts, monetary rewards, service awards. Such incentives when offered to employees they feel valued, they tend to stay with the organisation longer, work harder, and perform faultless work. This reflects their motivation level at work.

2.2 Employee motivation is the extent to which an employee feels committed, energised and satisfied with their jobs. Such high level of perseverance and loyalty can lead to higher productivity also allow any organisation to achieve its goals.

2.3 Security Guards are people who are appointed on job by buildings, institutions, offices and individuals to ensure that no harm or damage is made by any illegal and inappropriate actions. They can be formally or informally appointed personnel to diligently guard any premises or a person with high degree alertness and observation for signs of destructive or harmful actions and taking appropriate measures by timely reporting to the employer.

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स्वातंत्र्यपूर्व काळात देशभरात मोठमोठ्या राजकीय व सामाजिक चळवळी उभ्या राहिल्या. महाराष्ट्रात देखील या चळवळीमध्ये अग्रेसर राहिला. वर्षानुवर्षे ग्रामीण भागातील जमीनदार, वतनदार, सरंजामशहा व सावकार यांचे सामान्य जनतेवर अबाधित असे वर्चस्व होते. त्यांना मिळालेले अधिकार हे वंशपरंपरेने प्राप्त झाले असल्यामुळे काहीही कष्टाचे काम न करता बहुजन समाजावर त्यांना सत्ता गाजवने सोपे गेले. अल्पसंख्य अशा धनाढ्य वर्गाकडे जमीन, कारखाने व संपत्ती यांची मालकी असल्यामुळे बहुसंख्य कष्टकरांचे जीवन त्यांच्यावर अवलंबून होते. याचाच गैरफायदा घेत त्यांनी सर्वसामान्यांचे जीवन व्यापून टाकले. शेतकरी व कामगार यांना नाडले. त्यांचे शोषण केले. इंग्रजी राजवटीत सुरु असणारे हे शोषण स्वातंत्र्य मिळाल्यानंतरही सुरूच राहिले. स्वातंत्र्यपूर्व काळात सामाजिक व आर्थिक वर्चस्व हे या वर्गाकडे होते तर राजकीय वर्चस्व मात्र इंग्रजांचे होते. तथापि १९०९ नंतर सुरु झालेल्या विविध राजकीय सुधारणातून या वर्गाने कशा प्रकारे आपले प्रभुत्व प्रस्थापित केले व स्वातंत्र्योत्तर काळातही त्यांनी राजकीय प्रणाली आपल्या फायद्यासाठी वापरली याचे भेदक चित्रण अण्णा भाऊ साठे यांच्या लोकनाट्यातून प्रकर्षाने समोर येते.

ब्रिटीश राजवटीत संमत झालेले नियामक कायदे, १९०९ चा मिंटो-मोर्ले कायदा, १९१९ चा मोन्टेग्यू चेम्सफर्ड कायदा व १९३५ चा कायदा यामधून भारतीय लोकांना निवडणुकीद्वारे आपले प्रतिनिधी कायदेमंडळात पाठवण्याची संधी मिळाली. राजकीय स्वातंत्र्य इंग्रजांकडे व सामाजिक स्वातंत्र्य सावकार जमीनदार व कारखानदार यांच्या अधीन असताना प्रथमच त्यांना थोड्या थोडक्या राजकीय अधिकारांचा अनुभव त्यांना मिळणार होता. अर्थात संपूर्ण आयुष्य वंशपरंपरेने चालत आलेल्या जमीनदार व सावकार यांच्यावर अवलंबून असल्याने केवळ कायदे मंडळात प्रतिनिधी पाठवून देखील त्यांचे प्रश्न सुटले असते असे नाही. एकतर हे प्रतिनिधी स्वतंत्र भारतातील प्रतिनिधी नव्हते दुसरे म्हणजे त्यांच्यावर अंतिम नियंत्रण ब्रिटीश सरकारचेच होते. पण या थोड्या थोडक्या अधिकारावरही समाजातील जमीनदार, कारखानदार, सावकार व स्वतःला गांधीवादी म्हणवणारे नेते कसा डल्ला मारतात याचे वेधक चित्रण अण्णाभाऊ यांच्या लोक नाट्यातून

समोर येते. ग्रामीण भागातील जमीनदार व सावकार यांच्याविरुद्ध अण्णा भाऊ यांना संताप वाटत होता कारण त्यांनी या वर्गाकडून होणारे शोषण पाहिले होते व अनुभवले होते.

अण्णा भाऊंनी तमाशा या लोककलेला लोकनाट्य हे नवे रूप दिले. पारंपारिक तमाशा प्रकारात जनजागरण नसून केवळ मनोरंजनाचा समावेश होता. त्यामध्ये मनोरंजनासाठी अश्लीलतेचा देखील समावेश होत असे. अण्णांनी तमाशा प्रकारातील हा प्रकार टाळून मनोरंजनासोबत प्रबोधनाचा वसा हाती घेतला. राजकीय विषयांवरील लोकनाट्य त्यांनी लिहिले व त्यातून महाराष्ट्रातील जनतेत राजकीय परिस्थिती बदल जागृती वाढवण्याचे काम केले. संयुक्त महाराष्ट्र चळवळ, बेळगाव-कारवार सीमावाद आणि गोवा मुक्ती आंदोलन यामध्ये मोलाची भूमिका बजावणाऱ्या महाराष्ट्र समितीच्या स्थापनेपूर्वी आणि स्थापनेनंतर अण्णाभाऊंनी सामान्य जणांना भोवतालच्या राजकीय घडामोडींबद्दल जागरूक करण्याचे मोठे कार्य केले. कम्युनिस्ट पक्षाचे ते सक्रीय कार्यकर्ते होते. लाल बावटा कलापथक, च्या माध्यमातून त्यांनी शाहीर अमरशेख व द. ना. गव्हाणकर यांच्या सोबतीने लोकांना आर्थिक, राजकीय व सामाजिक वास्तवाबद्दल जाणीव करून दिली.

अकलेची गोष्ट' या लोकनाट्यातून शेतकऱ्यांचे शोषण त्यांनी उघडकीस आणले व त्याविरुद्ध बंद करण्याचा संदेश दिला. हे लोकनाट्य १९४५ साली त्यांनी लिहिले. या लोकनाट्यातील नायक जानबा हा किसान सभेचा कार्यकर्ता आहे. किसान सभेच्या माध्यमातून गावातील गुंडू व बंडू या दोन धनदांड्यांविरुद्ध तो लढतो. गुंडू हा कापडाचा व्यापारी असून त्याचा हस्तक बंडू हा बहुजन आहे. दोघांना जानबाबद्दल राग आहे. बंडू हा उच्चवर्गीय लोकांचे प्रतिनिधित्व करतो त्यामुळे तो जानबाला उठ्लासुटला किसान सभेचे कार्य करतो, शेतकरी राजा झाला तर नांगर कुणी हाकायचा? अशी निर्लज्ज विचारणा करतो. ग्रामीण भागातील जमीनदार, सावकार व पारंपारिक व्यापारी यांनी मोठ्या प्रमाणावर सामान्य लोकांची पिळवणूक केली होती. त्यामुळे अण्णांना याबद्दल चीड होती. आपल्या लोकनाट्यातून त्यांनी या वर्गाला टीकेचे लक्ष बनवले. शेतकऱ्याला किरकोळ रक्कम व्याजाने देऊन त्याची वसुली करण्याच्या निमित्ताने त्यांची जमीन हडपण्याचा प्रकार गावाकडे सर्रास घडत असे. अशा प्रकारांना त्या काळातील अनेक बहुजन साहित्यिकांनी वाचा फोडली. अण्णाभाऊ त्या बंडखोर परंपरेचे पाईक होते.

'शेटजीचे इलेक्शन' या लोकनाट्यातून सावकार, श्रीमंत लोक व राजकारणी यांची अभद्र युती कार्यरत दाखवली आहे. १९४६ मध्ये स्वातंत्र्य पूर्व काळात हे नाट्य रचण्यात आले. या काळात भारत स्वातंत्र्याच्या उंबरठ्यावर होता. या पार्श्वभूमीवर पहिली निवडणूक घेण्यात येणार होती. यावरच हे नाट्य आधारित होते. सर्वच राजकीय पक्ष आपले उमेदवार निवडून आणण्याच्या कार्याला लागले होते. समाजवादी तत्त्वज्ञान हे साम्यवादी तत्त्वज्ञानापेक्षा विस्तृत असल्याने कम्युनिस्ट अथवा साम्यवादी वगळता बहुतेक पक्ष आपण समाजवादी असल्याचा दावा करत होते. या पार्श्वभूमीवर समाजवादी व साम्यवादी

तत्त्वज्ञानामध्ये कोणता फरक आहे हे लोकांना समजून सांगण्यासाठी हे नाटक रचले गेले. काँग्रेस पक्षाचे तिकीट मागणाऱ्यापैकी काहीजण प्रदीर्घ काळ पक्षात काम करत होते. काहीजण घरदार सोडून स्वातंत्र्य संग्रामात तुरुंगवास भोगून आलेले होते. अशा निष्ठावंतांची उमेदवारी मोडीत काढून पक्षाचे बोर्ड अध्यक्ष सखारामबापू अशा उमेदवारांना शिष्ट म्हणून संबोधतात. काँग्रेसमध्ये काम केलेले अथवा देशासाठी तुरुंगवास भोगलेले लोक कायदेमंडळात जाऊन काय करणार? असा त्यांचा सवाल आहे. देशासाठी लढणे वेगळे व कायदेमंडळात जाऊन प्रश्न मांडणे वेगळे अशी शहाजोग भूमिका ते घेतात. पक्षासाठी वेळ देणाऱ्या कार्यकर्त्यांपेक्षा पक्षाला निधी देणाऱ्या मगरचंद सारख्या व्यक्तीला तिकीट देण्याची शिफारस ते करतात. मगरचंद याचे स्वातंत्र्य संग्रामात काहीच योगदान नाही उलट तो काळा बाजार करणारा आहे हे ध्यानात आणून दिल्यावरही सखारामबापू कायदेमंडळात डावपेच खेळणारी माणसे पाहिजेत, अशी मखलाशी करतात. मगरचंद हा मुळात व्यापारी असल्याने काँग्रेस कडून तिकीट मिळाले नाही तर हिंदू महासभेकडून तिकीट घ्यायची त्याची तयारी असते. याच दरम्यान १९४२ च्या आंदोलनात सक्रीय असलेला पक्षाचा कार्यकर्ता सत्तू हा तिकीटाची मागणी करतो. तेव्हा सत्तुसारखी माणसे असेम्ब्लीत जाऊन काय करणार? कोणत्या तारा उखडणार? तेथे हुशार माणसे हवीत या शब्दात त्याने देशासाठी केलेल्या त्यागाची खिल्ली उडवली जाते.

स्वाभिमानी सत्तू शेतकऱ्यांना नेतृत्व देणाऱ्या किसान सभेचे कार्य करू लागतो. सत्तुवर दबाव टाकण्यासाठी मगरचंदचा नोकर धोंडीबा हा सत्तुच्या घरी येतो तेव्हा सत्तूची पत्नी धोंडीबाला चांगली फैलावर घेते व त्याची कानउघडणी करते. मगरचंदच्या स्वामीनिष्ठेची ग्वाही देणाऱ्या धोंडीबाला नवे भान येते. ज्या मगरचंदने आयुष्यात कधी नांगर चालवला नाही व दुसऱ्यांची शेती बळकावली, त्याची बाजू कसा घेतोस? या प्रश्नावर धोंडीबाचा स्वाभिमान जागा होतो. मगरचंद गावात मते मागायला जातो तेव्हा ‘शेतकऱ्यांच्या बळकावलेल्या जमिनी परत देणार का?’ या सत्तुच्या प्रश्नाकडे कानाडोळा करून सडका बांधणार, घरे बांधणार, देवळावर कळस चढवणार, धर्मशाळा बांधणार अशी वचने देऊ लागतो. अण्णा भाऊंची लेखन हे वैयक्तिक पक्षाविरुद्ध नसून भांडवल शाही व धर्मवादी धोरणांविरुद्ध आहे. तेव्हा काँग्रेस प्रमुख पक्ष असल्याने साहजिकच त्यांचा रोख त्या पक्षाकडे आहे पण सद्यस्थितीतील राजकारण पहिले तर वर्तमान काळात काँग्रेसची जागा इतर पक्ष चालवत आहेत हे दिसून येते. त्यामुळे अण्णा भाऊंच्या लिखाणाची प्रासंगिकता अद्यापही आहे. देशामध्ये भांडवलदार, उद्योगपती व राजकीय पक्ष यांची अभद्र युती असून श्रीमंतांचे प्रश्न जेवढ्या लवकर सुटतात तसे गरिबांचे सुटत नाहीत. अन्न, वस्त्र, निवारा यासारख्या मूळ प्रश्नांना बगल देऊन लोकांना धर्माच्या प्रश्नावर फिरवले जाते हे आजही प्रासंगिक आहे. या लोकनाट्यात अखेरीस सर्वसामान्य लोक एकत्र येऊन मगरचंदाचा डाव हाणून पडतात असे दर्शवून अण्णांनी आशावाद प्रकट केला.

‘लोकमंत्र्यांचा दौरा’ या लोकनाट्यात तथाकथित देशभक्त घोटाळे यांच्या निवडणुकीतील युक्त्यांचा पर्दाफाश केलें आहे. सर्वसामान्य जनतेच्या संघर्षावर स्वतंत्र भारतात धनदांडगे व श्रीमंत निवडणूक जिंकू लागले व लोकांच्या मुलभूत समस्या सोडवण्याऐवजी भलते सलते उपदेशाचे डोस पाजू लागले. निवडणूक जिंकून मंत्री बनलेले खटारिया व त्यांचा सचिव घोटाळे यांच्याजवळ लोकांच्या समस्येला उत्तर नाही. जनतेची कामे करण्याऐवजी काळातील प्रचारकी थाटात भाषणबाजी करून गांधीवादाचा जप करणे व भारताला वैभवशाली बनवणाऱ्या वचनांचे पठन हे वर्णन अगदी सद्यस्थितीतील राजकारणालादेखील लागू पडते. देशातील गरिबी नष्ट करण्यावर मंत्री महोदय प्रत्येक पुरुषाने राम व स्त्रीने सीता व्हावे असा उपदेश करतात. गोरा साहेब जाऊन काळा साहेब आल्याची भावना जनतेत निर्माण झाली होती. मंत्री महोदयांना देशातील परिस्थितीची जाणीव नसल्याने अन्नधान्य टंचाई दूर करण्यासाठी अधिक धान्य पिकवा असा कोडगा उपदेश ते देतात. पण हे धान्य पिकवावे कोठे? सर्वसामान्य जनतेला जमीन नाही. यावर कोडगेपणाने गलारीत व व्हरांड्यात पिकवा असे अजब तर्कट ते देतात. गरिबांना अन्नधान्य मिळत नाही व साठेबाजी वाढली यावर अन्न धान्य नाही तर रताळी, कंदमुळे खा अशी अजब तर्कटे मंत्री व त्यांचा सहायक लढवताना दिसतात. या लोकनाट्यातील एक पात्र, घोटाळे अन्न मिळत नाही तर पेंड असे उत्तर देतो व पेंडीचे फायदे यावर मोठे भाषण देतो. एका पेंडीत पन्नास बकऱ्यांचे मांसएवढे व तीन हजर कोंबड्याएवढे प्रथिने असल्याचे ठासून सांगतात. जनेतेची दिशाभूल करण्यासाठी नेतेमंडळी कसे खोटे दावे करतात याचे मार्मिक वर्णन यामध्ये आले आहे. एवढे खोटे बोलून व काहीही उपाय योजना ना करतादेखील अखेरीस मी तुमचा सेवक असल्याचे मंत्री बजावतात. सर्वसामान्य जनतेचे प्रतिनिधी विष्णू व हणमू यांनी मंत्री महोदयांना अवघड प्रश्न विचारल्याबद्दल व जनतेची गाऱ्हाणी जाहीरपणे मांडल्याबद्दल जनता संरक्षक कायद्यान्वये पोलिसांच्या ताब्यात देण्यात येते.

बेकायदेशीर या लोकनाट्यात मगरचंद गुजर हे पात्र लोकांना पुष्कळ वचन देऊन निवडून आलेले असते. निवडून आल्यावर मात्र तो दिलेली वचने विसरतो. पण जनता विसरलेली नसते. या नाटकाची सुरुवात रघुनाथमल या गिरणीमालकाच्या त्याचा नोकर धोंडीबा याच्यामधील संवादाने होते. धोंडीबाला रघुनाथमल बजावतो की गिरणीमध्ये कुणीही कम्युनिष्ट म्हणजे लालबावटावाला असता कामा नये. आपल्याच गिरणी तील सत्तू हा कामगार कम्युनिस्ट आहे हे कळल्यावर याची तळपायाची आगमस्तकात जाते. सद्दू हा १९४२च्या आंदोलनात सक्रीय असतो. त्याने याबद्दल दोन वर्षे तुरुंगात काढलेली असतात. आता मात्र धनदांडग्यांच्या कामगार विरोधी धोरणांना विरोध करून तो त्यांच्याविरुद्ध लढा उभारतो. यावर रघुनाथमल सत्तूची अधोगती झाल्याची मखलाशी करतो व त्याबद्दल खोटी हळहळ व्यक्त करतो. स्वातंत्र्यपूर्व व स्वातंत्र्योत्तर काँग्रेस नेत्यातील फरक अचूक हेरताना या नाटकातील पात्र काँग्रेसवाल्याने खादी परिधान करावी, सूत

कातावे, कामगारात फूट पाडावी, नवनवीन युनियन काढाव्या, असे सुतोवाच करतो. लोकनाट्यातील मंत्री मगरचंद गिरणीमालक रघुनाथमल म्हणजे राजकारणी व भांडवलदार यांची अभद्र युती असून त्यांनी कामगारांची पिळवणूक करून त्यांना देशोधडीस लावले होते. गिरणीमालकाच्या पैशांच्या बळावर व सामान्य लोकांच्या मतांनी मगरचंद निवडणूक जिंकतो मात्र सर्वसामान्य जनतेला तो विसरतो. उठसुठ संप करतात म्हणून त्यांना ठोकून काढले पाहिजे असे त्याचे मत आहे. कामगार आपल्या न्याय्य मागण्यांसाठी संप करतात हे त्याला मान्य नाही. संप करणे म्हणजे शांतता भंग करणे होय म्हणून तो मोडून काढला पाहिजे असे त्याला वाटते. जेव्हा त्याच्या लक्षात आणून दिले जाते कि आपले राज्य कामगार व शेतकऱ्यांसाठी आहे तेव्हा संप म्हणजे आपले राज्य संपवून टाकण्यासाठी काम्युनिष्टांचा डाव असल्याचे तो कांगावा करतो. त्यामुळे रघुनाथमलचा धीर खचतो व तो मगरचंदकडे धाव घेतो. मगरचंद कलम १४४ लागू करून कामगारांच्या मुसक्या आवळण्याच्या मागे असतो पण कामगार एकजुटीपुढे दोघांना हार मानवी लागते.

आजदेखील लोकांच्या न्याय मागण्या, आरोग्य व शिक्षण या मूलभूत गरजा भागवण्याऐवजी त्यांना मंदिर, मस्जिद सारख्या धार्मिक मुद्द्यांवर खेळवले जाते, त्यांना शहाजोग सल्ले दिले जातात. समाजात वाढते खाजगीकरण व त्यामुळे नागरिक व कामगार यांचे शोषण आजही सुरु आहे. किंबहुना अनिर्बंध खाजगीकरण व जे शासकीय उद्योग लोकांच्या पैशातून उभारले गेले व ज्यामुळे देशाचा विकास झाला तेच नुकसानीत असणारया खाजगी उद्योगाला विकले जात आहेत. त्यामुळे अण्णाभाऊंच्या विचारांची आजही गरज भासते. अण्णांच्या लोकनाट्यातून कष्टकऱ्यांना ऊर्जा, आशेचा नवीन किरण व जिद्द मिळते

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Carbon Nanofiber and Photovoltaic Solar Cell

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Solar power is a safe form of nuclear energy. We are using fusion reactions that are 93 million miles away to make light that we then convert to electricity with photovoltaic modules.

Sean White

12.1 Introduction

A device which directly converts the energy of light into electrical energy through the process of photovoltaics is called a solar cell. This concept has been evolving since 1839, when the development of solar cell technology began with the research of Alexandre-Edmond Becquerel. He observed the photovoltaic effect via an electrode in a conductive solution exposed to light [1]. Since then, many scientists have worked on this idea and improvised on it. In 1877, Adams and Day [2] observed the photovoltaic effect in solidified selenium. In 1904, Wilhelm Hallwachs made a semiconductor-junction solar cell from copper and copper oxide, a prototype of thin-film Schottky barrier devices. This barrier layer at the semiconductor-metal interface was confirmed by Goldmann and Brodsky in 1914 and later studied in more detail by Walter Schottky, Nevill Mott and others in the 1930s [3–5]. Between 1950 and 1959, work leading to the practical silicon

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If N atoms interact (for example in a crystal), N outer levels have energy that is only slightly different and thermal energy allows electrons to pass from one level to another (the energy corresponding to $T = 300\text{ K}$ is $kT \approx 0.026\text{ eV}$). Resulting energy levels are grouped into bands. Two main bands are recognizable: conduction band and valence band. These two bands are separated by a forbidden region that is characterized by an energy value E_g . This value makes the difference among insulators, conductors, and semiconductors.

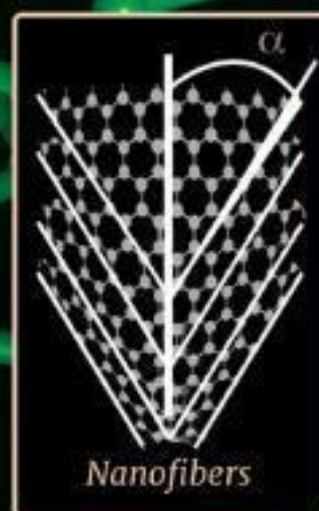
In a conductor the conduction band is partially superimposed on the valence band. As a consequence, there are many electrons available for conduction and an electric field can give them sufficient energy to perform conduction. In an insulator, the forbidden band has a wide energy (for diamond, $E_g = 5.5\text{ eV}$), and neither thermal energy nor an electric field is able to raise the energy of an electron to send it into the conduction band. Due to the absence of free electrons for conduction, the material behaves as an insulator. In a semiconductor, the two bands are separated but the energy of the forbidden band is low ($E_g = 1.12\text{ eV}$ for Si at $T = 300\text{ K}$) and it is easy to give energy to an electron to go into the conduction band. In this case, the hole in the valence band contributes to the conduction as well as the electron in the conduction band.

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